



## **FACTORS INFLUENCING PARTICIPATION OF SMALLHOLDER RICE FARMERS IN THE ANCHOR BORROWER PROGRAMME (ABP) IN JIGAWA STATE, NIGERIA**

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### **ABSTRACT**

The Study assessed the Factors Influencing Participation of Small Holder Rice Farmers in the Anchor Borrower Programme (ABP) in Jigawa State, Nigeria. Multi-stage sampling techniques were employed to select 258 smallholder rice farmers, 129 non-Anchor borrower program participant (NABP) and 129 Anchor borrower programme participant (ABP). Data were collected through the use of structured questionnaire and analysed using descriptive statistics, inferential statistics, and Tobit regression. The result shows that, majority of the respondents were in active age, 20-30years 73(28.3%); in term of marital status, most of respondents 55.8% were married, 69.8% of the respondents were male and most (72.9%) the respondents were literate. The result also revealed that (53.0%) of the respondents were members of the cooperative society. Average farming experience was 12 years and mean household size was 9 years with mean farm size of 1.5ha. The result of Tobit regression indicated that yield, extension visit, were positive and significant at  $P < 0.01$  and  $P < 0.05$  respectively in an influencing participation in ABP, it also shows that multidimensional poverty index, awareness was negative and significant at ( $P > 0.01$ ) and ( $P > 0.01$ ) in influencing participation in ABP in the study area. The major constraints to the participation of smallholder rice farmers in ABP as reported were, inadequate inputs, farmers level of education, land tenure system, and poor funding which were ranked 1<sup>st</sup>, 2<sup>nd</sup>, 2<sup>nd</sup> and 4<sup>th</sup> respectively. The study recommended that, Federal Government should consolidated on the gain of ABP in the state by increasing the fund for the programme in the State and make sure more smallholders rice farmers (SHF) benefit from the programme given that the programme has enhanced both income and outputs of the beneficiaries, Government and other stakeholders should encourage timely provision of inputs to ABP participants, Other agricultural and financial institutions in the State should streamline their procedure for securing loans in order to make it easy to farmers.

**Keywords:** Anchor borrower, Rice, Participation, Small Scale and Farmers

### **INTRODUCTION**

The demand for rice (*Oryza sativa L*), in Nigeria is increasing annually and expected to reach almost 36 million tons by the year 2050, due to massive population growth as the country was forecasted to be the third most populated country in the same year, against the current population of 198 million (Adeyemo, 2018). Besides, the increase of harvested area from 2011 to 2021 yet, the rice production increment is yet to meet the demand (FAO, 2022). Rice is an important cash crop and a major source of livelihood for smallholder farmers, who consume 20% of their total production (Okpiaifo *et al.* 2020). It is one of the widely produced and



consumed food crops in Nigeria (FAO, 2021). It can be described as a family staple, gracing all the dining tables despite the social strata. The increasing domestic demand for rice in Nigeria has been attributed to consumer preferences, increasing incomes, rising urban population, among others (Osabuohien *et al.*, 2018). It is one of the global foremost food crops contributes about 42% of the globe's required source of calorie intake. Today, more than half of the globe's population uses it as their main food (Udemezue, 2018).

The banning of rice importation in to the country imposed by the government to provide credit facilities to rice farmers (Abraham, 2018). The imperative of rice has made food security studies since the beginning of the 21<sup>st</sup> century to explore the possibilities of boosting and sustainability of rice production. Nigeria established many financial institutions in the 1970s to provide credit to farmers. However, only 4% of total lending to the entire sectors was allocated to the agricultural sector by commercial banks. Nevertheless, many rice farmers have been reported complaining about the inability to access credit from Anchor Borrowers Programme in the country (Gabriel, 2018). The program thrust of the ABP is provision of farm inputs in kind and cash (for farm labour) to small holder farmers to boost production of these commodities, stabilize inputs supply to agro processors and address the country's negative balance of payments on food. At harvest, the Smallholder Farmer (SHF) supplies his/her produce to the Agro-processor (Anchor) who pays the cash equivalent to the farmer's account. The Programme evolved from the consultations with stakeholders comprising Federal Ministry of Agriculture & Rural Development, State Governors, millers of agricultural produce, and smallholder farmers to boost agricultural production and non-oil exports in the face of unpredictable crude oil prices and its resultant effect on the revenue profile of Nigeria. (Bank of Agriculture (BOA), 2016). In order to boost agricultural production and non-oil exports in the face of unpredictable crude oil prices and its resultant effect on the revenue profile of Nigeria, the Central Bank of Nigeria (CBN) in line with its developmental function, established the "Anchor Borrowers' Programme" (ABP).

In order to overcome the challenges posed by food insecurity so many agricultural programs were introduced with the sole aim of boosting food production, and stemming the tide of food insecurity. According to Evbuomwan, and Okoye, (2017), in an effort to solve the challenges facing the agricultural sector and help Nigeria overcome the problems of food insecurity through importation by over dependence on oil revenue, led to the launch of the Anchor Borrowers' Programme (ABP). The Anchor Borrower Programme (ABP) was launched by President Muhammad Buhari (GCFR) on November 17, 2015. The intention of the programme was to create a linkage between larger processing outfits (anchor companies) involved in the processing of agricultural produce, and small holder farmers, who specialize in the production of the required key agricultural commodities (CBN, 2016). According to Okelola (2019) as in February 2018, about 80% of the farmers in Nigeria who received credit under the programme were rice producers. The programme is presently in operation in 14 States namely Kano, Kaduna, Katsina, Sokoto, Jigawa, Kebbi, Zamfara, Adamawa, Niger, Plateau, Lagos, Ogun, Cross-Rivers and Ebonyi. The programme is still ongoing with positive impact on the participants that key into it (Yusuf, *et, al* 2022). The objective of the study is to assessed the determinant factors that influence the rice farmers decision to participate in the Anchor borrower programme in Jigawa State.



## METHODOLOGY

### The Study Area

Jigawa State lies between Latitudes 11°N and 13°N and Longitudes 8°E and 10°35'E and covers a total land area of about 22,410 square kilometres fig2. The state is bordered on the east by Bauchi and Yobe states, on the west by Kano and the north by Katsina and Yobe states and by the Republic of Niger. Jigawa State was created from Kano State on Tuesday, August 27, 1991 (Garba, 2017). The state has a population of 4,361,002 as at 2006 Census (Nigeria Population Commission, 2006) with a projected population of 8,292,956.5 in 2022 using 3% annual growth rate. With GDP of \$2,988 Million, and per capita income of at \$673 (National Bureau of Statistics, 2020). The State has a reasonable number of natural resources, and vast arable land, which is still yet to be explored. Farming is the major occupation accounting for about 80% employment in the State. Jigawa has a low literacy level of about 53.6% and is among the poorest states in Nigeria (NBS, 2014). Jigawa state has a land area of approximately 22,210 km<sup>2</sup> or about 2.2 million hectares. Most part of the state lies within the Sudan savannah vegetation zone. On some parts of the southern boundaries, some traces of Guinea Savannah do exist. The rainfall is higher in the southern part of the State. Jigawa has an average of about 700mm annual rainfall, (JARDA, 2004). The rainy season is between May to October in the south and June to September in the north (JARDA, 2004).

The State is considered to be agrarian as more than 90 percent of the working adults engage in agriculture as a means of their livelihood (JARDA, 2004). Popular rain fed food crops are millet, sorghum, beans and rice. Crop production during the rainy season is mainly for subsistence with farmers averagely cultivating about 2.5 hectares. Major cash crops include: rice, cowpea, groundnut, Bambara nuts, sesame, pepper, bitter melon, and water melon (JARDA, 2004). Livestock such as cattle, sheep, goats, poultry and donkeys are very common in the state. Rice production has been an integral part of agricultural production in Jigawa state. Almost every farming household in the state engages in the production of the crop (JARDA, 2004). This partly informed the decision of the federal government through the central bank of Nigeria and the Jigawa State government to encourage the production of rice as one of the key cash crops in the state.

### Sampling Procedure and Sample Size

Multi-stage sampling procedure was employed to select smallholder rice farmers in the State for this study. The multi-stage sampling technique is most appropriate when a researcher intends to reduce the size of the study area while maintaining fair representation. The first stage involved a purposive sampling of all the beneficiaries and some non-beneficiaries across the four agricultural zones of the State within the period of 2018 to 2020. Then four LGAs in each of the agricultural zone of the state were selected owing to their participation in the ABP for the purpose of this study. On this basis, respondents were drawn from the four agricultural zones of Jigawa State (Birnin kudu, Kazaure, Hadejia and Gumel). The sampled LGAs were; Dutse, Birninkudu, Gwaram and Buji (BirninKudu zone), Gwiwa, Gumel, Babura and Suletankarkar (Gumel zone), Hadejia, Auyo, Malanmadori and Kafin Hausa (Hadejia zone) and Taura, Roni, Kazuare and Yankwasi (Kazaure zone).

The second stage involved purposive selection of the respondents based on their experiences and year of registration across the diverse agricultural zones of the State within the period of 2018 to 2020.



**Table 15:** Selection of the Respondents Based on their Registration Year with ABP

S/n	Year	Registered Beneficiaries	Percentage of selected respondents
1	2018	500	50
2	2019	180	30
3	2020	1,745	20
<b>Total</b>		<b>2,425</b>	<b>100</b>

Source: Author field survey 2022

The third stage involved the compilation of all the beneficiaries of the ABP from each of the selected LGAs from the State. Based on the statistics available at the state's NIRSAL offices, various Off-takers in the State and the State's Agricultural Development Programmes office (JARDA), simple random sampling technique were used to select a sample size of ABP beneficiaries from a pool of 2,425 beneficiaries of the selected LGAs. Random sampling technique were employed for the selection, to ensure that the sample was the true representation of the smallholder rice farmers in the study area.

**Table 2:** Sample Size Selection Matrix

S/N	State	Zone	LGA	Sampling Frame	Sample Size Beneficiaries	Non-beneficiaries
	Jigawa		Dutse	30	13	13
		B/kudu	B/kudu	30	13	13
			Buji	15	7	7
			Gwaram	20	9	9
			Gumel	18	8	8
		Gumel	Babura	15	7	7
			Taura	12	6	6
			S/Tankrkar	20	9	9
			Hadejia	25	11	11
		Hadejia	Auyo	12	6	6
			M/madori	20	9	9
			K/Hausa	18	8	8
			Roni	16	7	7
		Kazaure	Kazaure	20	9	9
			Yankwashi	15	7	7
<b>Total</b>				<b>286</b>	<b>129</b>	<b>129</b>
<b>Total Respondents</b>					<b>258</b>	

Sources: JARDA 2022

### Method of Data Collection and Analysis

Data was collected through the use of structured questionnaire. Data collected were analysed using descriptive statistics. The descriptive statistics including frequency counts, means, percentages and ranks and Inferential Statistics (Tobit regression).



## **RESULTS AND DISCUSSION**

### **Socio-economic Characteristics of Smallholder Rice Farmers Participating in Anchor Borrower Programme**

#### **Age of the Respondents**

The results in Table 3 revealed that 28.3%, of the smallholders' rice farmers are between the age of 20 to 30 years, majority of the farmers falls within the age category of 31 to 40 years, followed by those with age ranging between 41 to 50 years and lastly 7.4% have ages between 51 to 60 years. The study shows that majority of the smallholder rice farmers participating in anchor borrower programme were youth in their active and productive years, hence they incentivize to increase their farming activities. This disagreed with Sanusi, (2017), Who said that In a research titled "The Effect of Anchor Borrower Programme on Poverty Reduction of Smallholder Rice farmers in Lagos and Ogun States that; about 28% of the respondents are between the age 51-60 years while 26.67% of the respondents were between ages 61-70 years, 25% are between the ages 41 -50 years, 16.67% are between the age 31 - 30 years.

#### **Sex of the Respondents**

Table 3: revealed that majority 69.8% of the farmers were male the remaining 30.2% were female. Farming in this part of the country is dominated by men, even though this tradition has started to fade. This corroborate with the report of Sanusi, (2017) that, most (63.3%) of the ABP in Lagos and Ogun States were male and 36.7% were female; this shows that most of the smallholder farmers were males. This The result also agreed with Muhammad (2020), revealed that, most of the rice farmers (80.56%) were male, while only 15.44% of the respondents were female.

#### **Marital Status of the Respondents**

The result in Table 3 further indicated that the most (74.4%) of the farmers were married, 21.3% were single, the least are the divorces who are only 0.4% of the farmers. Marital status are the distinct options that describe a person's relationship in marriage, marital status are terms used in forms, vital records, and other documents to ask or indicate whether a person is married, single or divorced. It is a civil term used majority in showing how responsible a person is in this part of the country. This is in line with (Magaji 2022), shows that 94% of the respondents are married. This as a result of married people is regarded as responsible for overseeing the family affairs in the study area. The table also shows that 94% of the respondents are married.



**Table 3:** Distribution of Respondents According to Age, Sex, and Marital status Cont.....

Variables	Frequency	Percentage	Mean
<b>Age (Years)</b>			
20 - 30	73	28.3	<b>25.2</b>
31 - 40	99	38.4	
41 - 50	67	26.0	
51 - 60	19	7.4	
<b>Sex</b>			
Female	78	30.2	
Male	180	69.8	
<b>Marital status</b>			
Divorced	1	0.4	
Married	192	74.4	
Single	59	21.3	
Widow	6	2.2	

Source: Field Survey, 2022

### Household Size of the Respondents.

The results in Table 4 shows that, respondents with a household size of 1-7 people constitutes 57.8%, followed by those with 8-13 people who are 26.4%, followed by those with 14-20 people with 11.2%.the least are those with 28-35 people in their household. Household size is essentially the number of people for whom you are financially responsible, living under the state roof as house, eating from the same pot. Specifically, household size is the persons plus the number of people that were claim as dependents on the farmers for food shelter and clothing but must be eating from the same pot, visitors that cannot last more than six months are not include, married children that in their husband house are not included, children that were employed elsewhere that are not currently eating the household are not included. Finding by Oluwafemi *et al.* (2015) in research conducted in Nassarawa and Benue States of Nigeria on rice farmers revealed that majority of the respondents' household (76.19%) were male-headed, only about 23.81% of the respondent's were female-headed; suggesting that the involvement of women in rice farming in the study area was low.

### Education Level of the Respondents

The result in Table 4 further revealed that 18.6% had attended primary school education, while 35.7%, 36%, 1.2%, 8.5% had attended secondary, tertiary and post graduate education respectively. Generally, of education are an ordered set of categories, intended to group educational programme in relation to gradations of learning experiences and the knowledge, skills and competencies which each programme is designed to impart levels. This result is in agreement with the findings of Ikwuakam and Iyela (2017) in Jibia Local Government area of Katsina State, reported that the respondents had one level of education or the other. However, majority (59.2%) had Quranic education. This explains why most of the respondents were into income generating activities (hired labourer, rope making, gathering of forest products, and sale of water and marketing of agro and non-agro products) that required little or no formal education to practice.



### **Farming Experience of the Respondents**

The result of farming experience from the Table 4 revealed that had an experiences of 11-15years, while 26.4% , 11.1% and 2.7% of the farmers had 16-20, above 20 and 1-5 years respectively with an average of 12 years.

### **Membership of Association of the Respondents**

Table 4 shows that 53.5% are members of a cooperative society, while the remaining 46.5% are not. The finding agrees with Muhammad (2020) who reported that, most (73.0%) registered with the farmers' association. This relates to the policy of the government of providing farm subsidies and other incentives through association than individuals. This implies that most the respondents can access credit from other financial institutions and boost the production.

**Table 4:** Distribution of Respondents According to their Household size, Educational level and membership of association status (n=258)

membership of association status (n=258)			
Variable	Frequency	Percentage	Mean
<b>Household Size (persons)</b>			
1 - 7	149	57.8	<b>9</b>
8 - 13	68	26.4	
14 - 20	29	11.2	
28 - 35	12	4.7	
<b>Education Level</b>			
a. no Formal Education	22	8.5	<b>12</b>
b. primary	48	18.6	
c. secondary education	92	35.7	
d. tertiary education	93	36.0	
e. post-graduate	3	1.2	
<b>Farming</b>			
<b>Experience(years)</b>	7	2.7	<b>12</b>
1-5	37	13.3	
6-10	120	46.5	
11-15	68	26.4	
16-20	26	11.1	
Above 20		100.0	
<b>Membership of association</b>			
Yes	138	53.5	<b>12</b>
No	120	46.5	

Source: Field Survey, 202

### **Primary Occupation of the Respondents**

The result in Table 5 depicts that majority (84.9%) of the farmers were crop farmers, while 9.7%, 2.7%, and 1.6% were traders, civil servants, artisans and livestock farmers respectively. This agrees with the report of Ayinde *et al.* (2018) that majority (58%) of the ABP in Kebbi Sate were rice farmers.

### **Land Ownership Status**

The result in Table 5 revealed that 77.5% of the farmers acquire their land though inheritance 15.1% purchased it, 1.6% are on lease and 0.8% practice share cropping. The result



is in agreement with the report of Ayindeet *al.*, (2018) that Rice farmers mostly own their land through inheritance (95.5%) and Communal system of land ownership (4.5%) respectively.

**Table 5:** Primary occupation and Land ownership status

Variable	Frequency	Percentage
<b>Primary occupation</b>		
Artisans	3	1.2
Civil Service	7	2.7
Crop Farming	219	84.9
Livestock Rearing	4	1.6
Trading	25	9.7
<b>Land ownership</b>		
Inherited	200	77.5
Lease	4	1.6
Purchase	39	15.1
Rent	13	5.0
Share cropping	2	0.8

Source: Field Survey, 2022

#### **Factors Influencing Participation in Anchor Borrower Programme in Jigawa state**

The relationship between socio-economic and institutional factors influencing participation in ABP was found to exist. According to Okeke, *et al.*, (2019), on their research “Effect of Anchor Borrowers’ Programme Access among Rice Farmers in Benue State, Nigeria” found out that, the coefficient of sex was significant at 1% and positively related to ABP participation. The positive sign of the coefficient implies that male rice farmers were more likely to have participation in the ABP. The different economic activities engaged by men and women have impact on their probability of access to credit. Since women lack control and ownership of productive resources, they lack the required collateral to secure loans from formal financial lenders. The aggregate effect of socioeconomics and institutional factors influencing participation was found in the value of the pseudo-R-square for this relationship is 0.313, this is a very good data fit, as it is shown by -35.95% log-likelihood (Table 7). The individual contributions of the all the variables included shows that several number of them have play an important role in the expressing the relationship. Variables that are significant at 1% include, awareness, poorly index yield change whereas those that are significant are 5% are extension frequency and education level. These variables that significant shows that they are important are correctly specified in the model. This means that they determine the direction of the relationship.

Those that were not significant means they play a limited contribution in the relationship. This agreed with Okeke, *et al.*, (2019) who reported the coefficient of marital status as significant at 1% and positively related to ABP participation. The positive sign of the coefficient implying that married rice farmers were more likely to have participated in the ABP. Farmers who are widows, divorcees, and unmarried tend to face difficulties in accessing credit owing to their high level of mobility which discourages formal financial institutions in extending credit to them. This finding agrees with Owusu (2017) who revealed that married farmers are likely to access credit from formal financial institutions as they are less mobile to be located and their loan repayment easier as it is jointly made. This also corresponded with





that of Ayinde *et al.*, (2018) who reported that, not being married reduces the probability of participation in Anchor Borrowers' Programme in the study area. Also, the coefficient of educational level was significant at 1% and negatively related to ABP participation (Table 7). This is in line with Gona (2020), The negative sign of the coefficient differs with the a priori expectation implying that smallholder rice farmers with higher educational level were less likely to have accessed the ABP. Smallholder rice Farmers with formal education have the capacity to understand credit scheme and its terms and conditions compared to smallholder rice farmers with low level of education. However, educated smallholder rice farmers who did not access the ABP were the older smallholder rice farmers as credit institutions prefer giving credit to younger farmers who can easily repay the borrowed fund.

**Table 7:** Distribution of Respondents According the Factors Influencing Participation in ABP in Jigawa state

Factors	Coef.	Std. Err.	t-value	P> t
Extension frequency	0.34287	0.155	2.21	0.028**
Agric radio listening	0.02822	0.079	0.36	0.720
Yield change	2.47996	0.589	4.21	0.000***
Income change	0.03598	0.071	0.51	0.612
Farm size	0.10652	0.254	0.42	0.676
Education level	-0.46107	0.189	-2.44	0.015**
Dependency ratio	0.93467	0.773	1.21	0.228
Household size	-0.17593	0.0294834	-5.97	0.000***
Marital status	0.12592	0.1885087	0.67	0.505
Sex	0.55743	0.4263824	1.31	0.192
Observation				258
<b>LR chi2(14)</b>				<b>127.8</b>
<b>Prob &gt; chi<sup>2</sup></b>				<b>0.000</b>
<b>Log likelihood</b>				<b>-635.9</b>
<b>Pseudo R<sup>2</sup></b>				<b>0.313</b>

Source: Field Survey, 2022 \*\*\*Significant at 1% \*\* Significant at 5%

## CONCLUSION AND RECOMMENDATIONS

Based on the result of the study it is therefore concluded that small scale rice farmers participation in the ABP has enhance their income and output in the study area, there was appreciable participation of youth in anchor borrower programme (ABP) in the study area. Tobit regression result indicated that yield, extension visit, were positive and significant in influencing participation in ABP. It is recommended that: 1. Federal government should be consolidated on the gain of the ABP in the state by increasing funding for the programme and make sure more rice farmers benefit from the programme given that the programme has enhanced income and outputs of the beneficiaries in the state.

## REFERENCES

- Abraham, T. W. (2018). Estimating the Effects of Financial Access on Poor Farmers in Rural Northern Nigeria. *Financial innovation*, 4(25): 1–20. <https://doi.org/10.1186/s40854-0180112-2>



- Adeyemo, I. (2018, April 12). Nigeria's population now 198 million – NPC. pp. 6–7.  
<https://doi.org/https://www.premiumtimesng.com/news/top-news/264781-nigeriaspopulation-now-198-million-npc.htm>
- Ayinde O. E., Fatigun O., Ogunbiyi, K., Ayinde, K. and Ambali Y. O. (2018) Assessment of Central Bank Intervention on Rice Production in Kwara State, Nigeria: A Case-study of Anchor Borrower's Program. *International Conference of Agricultural Economist*.
- Bank of Agriculture (BOA) (2016): The Anchor Borrowers' Programme: Implementation for Sustainability. Paper Presented at the Central Bank of Nigeria, Development Finance Department Workshop, October, 12-13.
- Evbuomwan, G. O. and Okoye, L. U. (2017) *Evaluating the prospects of the anchor borrowers' programme for small-scale farmers in Nigeria*. Paper presented at 21st International Farm Management Congress, John McIntyre Conference Centre, Edinburgh, Scotland, United Kingdom, 2-7 July 2017.
- FAO. (2022). *Nigeria at a glance*. Retrieved 20 June 2019, from <http://www.fao.org/nigeria/fao-in-nigeria/nigeria-at-a-glance/en/> FAOSTAT. (2019).
- FAO. (2021). Rural poverty analysis – From measuring poverty to profiling and targeting the poor in rural areas. Rome. <https://doi.org/10.4060/cb6873en>
- Jigawa State Agricultural and Rural Development Authority (JARDA, 2004) Survey of sesame farm lands in 21 local government areas in Jigawa state. Project management unit, Dutse, Nigeria.
- Magaji, S., Musa, I., Yakeen, O. A. & Eke, C. I. (2022). Poverty and Intractability; causes and consequences. *Inclusive Society and Sustainability Studies*, 2(2): 48-58.
- Muhammad I. D., (2020) Effect of Socio-Economic Demographics of Rice Farmers' on Accessing Credit from Financial Institutions in Kano, Nigeria. *The Advances in Accounting, Management, Business and Economics Journal* 4(2):15-26.
- National Bureau of Statistics (2020). Poverty profile for Nigeria 2012. Abuja: NBS.
- NPC, (2006) National population Commission, population census of the federal republic of Nigeria. Census Report National Population Commission Abuja
- Okeke, A. M. Mbanasor, J. A., Nto, P. O. (2019) Effect of Anchor Borrowers' Programme Access among Rice Farmers in Benue State, Nigeria: Application of Endogenous Switching Regression Model. *International Journal of Agriculture and Earth Science* 5(3): 31-47.
- Okelola, O. M. (2019) Agricultural Finance and Insurance Lecture Note. Department of Agricultural Economics, University of Abuja, Abuja, Nigeria
- Okpiaifo, G Alvaro D., Grant H.W., Lawton, L.N., Rodolfo, M., Nayga, Eric J. W. (2020) 'Consumer's Preferences for Sustainable Rice Practices in Nigeria', *Global Food Security* 24(2): 1–11.
- Osabuohien, E., Okorie, U. and Osabohien, R. (2018) Rice Production and Processing in Ogun State, Nigeria: Qualitative Insights from Farmers' Association. In Obayelu, E. (Eds). *Food Systems Sustainability and Environmental Policies in Modern Economics* (pp. 188-215), Hershey, PA: IGI
- Sanusi, W. A, (2017). The Effect of Anchor Borrower Programme on Poverty Reduction of Smallholder Rice farmers in Lagos and Ogun State, Nigeria. *International Journal of Organic Agriculture, Research and Development*, 14:31-41