DETERMINANTS OF RICE FARMERS' PARTICIPATION IN ANCHOR BORROWERS' PROGRAMME IN SOUTHEAST, NIGERIA

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ABSTRACT: *The study investigated the determinants of rice farmers' participation in Anchor Borrowers' Programme in South-East Nigeria. Purposive sampling technique was adopted in the selection of states and local government areas in order to capture areas where there are more concentrations of rice farmers and the participating LGAs. Proportionate sampling was adopted in selecting 120 rice farmers' beneficiaries. Data were collected using structured questionnaires and analysed using frequency, percentage, mean score, standard deviation and ordinary least square regression analysis. Findings show that the beneficiaries rice farmers had high participation ($\bar{x}$=2.52) in the programme activities with a discriminating index of $\bar{x}$= 2. Long bureaucratic procedures ($\bar{x}$=3.29), delay in loan disbursement ($\bar{x}$=3.39), and high cost of labour ($\bar{x}$=3.2) insufficient/unavailability of land ($\bar{x}$=3.1) among others were the most severe constraints faced by beneficiary rice farmers in southeast. Educational level (t =3.015), household size (t = -2681) and access to credit (t = -4.160) were determinants of rice farmers' level of participation in ABP. The study therefore recommends that there should be timely distribution of inputs among ABP facilitators.*

KEYWORDS: Rice Farmers' Participation in Anchor Borrowers' Programme.

INTRODUCTION

Rice consumption has continued to increase due to the fact that it is a major staple food in Nigeria. That Nigeria imports foods for domestic consumption is puzzling because a greater percentage of her population is engaged in agriculture. It is noteworthy that since the discovery of crude oil in commercial quantities in the 1970s, agriculture has suffered a severe neglect. Before the discovery of oil in exportable quantities, the country depended largely for her foreign exchange earnings on agricultural exports and the various regions in the country were quite active in agricultural production (Onuka, 2017). Most foods consumed in Nigeria today are imported foods, especially foreign rice. Nigeria today is ranked as the global second largest importer of rice after the Philippines (Onuka, 2017). The country is known as a net importer of rice, which had adversely affected local production (Ayinde *et al.*, 2018). In 2011 estimates, Nigeria was the largest importer of rice in the world, accounting for about 3.4 million metric tonnes (United States Department of Agriculture/Foreign Agricultural Service USDA/FAS, 2014).

Over dependence on importation by a country increases her import bill. In a bid to curb this problem and boost agricultural production, the government launched the Anchor Borrowers' programme. The Anchor Borrowers' Programme (ABP) was initiated by the Central Bank of Nigeria (CBN) in line with its developmental function. The Programme was launched by President Muhammadu Buhari on November 17, 2015 and it was intended to create a linkage between anchor companies involved in processing and small holder farmers (SHFs) of the required key agricultural commodities. The programme is geared towards provision of farm inputs in kind and cash (for farm labour) to small holder farmers to boost production of agricultural commodities, stabilise inputs supply to agro processors and address the country's negative balance of payments on food at harvest, the SHF supplies his/her produce to the Agro-processor (Anchor) who pays the cash equivalent to the farmer's account (Ayinde, Fatigun, Ogunbiyi, Ayinde & Ambali, 2018). The Programme evolved from the consultations with stakeholders comprising the 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 fluctuating crude oil prices and its effect on the revenue profile of Nigeria.

The broad objective of the ABP is to create economic linkage between smallholder farmers and reputable large –scale processors with a view to increasing agricultural output and significantly improving capacity utilisation of processors. Other objectives include: Increase banks' financing to the agricultural sector, reduce agricultural commodity importation, increase capacity utilisation of agricultural firms, create new generation of farmers/entrepreneurs and employment, reduce the level of poverty among smallholder farmers and assist rural smallholder farmers to grow from subsistence to commercial production levels (Central Bank of Nigeria, 2016).

The stages of ABP implementation consists of the following: Sourcing of funds from the N220 billion Medium, Small and Micro Enterprise, disbursing of fund to farmers at 9% interest rate, with crop specific tenors; identification and verification of targeted beneficiaries (farmers with at least 1 hectare); grouping of farmers into cooperatives linked to anchor companies; training of farmers and certification; opening of bank accounts by farmers, receipt of Bank Verification Number; and town hall meeting to discuss with stakeholders, among others (CBN, 2016). It is expected that when farmers have access to funds, they can purchase

their inputs, pay for labour, purchase productive resources like land, expand their scope of production, increase output, make more profit and this can only be achieved if farmers participate in Anchor borrowers Programme. Given the objectives of this program, it therefore calls for attention to what extent rice farmers participated in this programme and determined their participation in South-East Nigeria. It was on this backdrop that the study tried to answer the following questions; What is the level of rice farmers' participation in ABP? What determined their participation? What challenges were beneficiaries confronted with?

Objectives of the Study

The main objective of the study was to investigate the determinants of rice farmers' participation in Anchor Borrowers' Programme in South-East Nigeria. Specifically, the study

i)   determined the level of rice farmers' participation in Anchor Borrowers' Programme;

ii)   ascertained the constraints to rice farmers' participation in Anchor Borrowers' Programme; and

iii)   investigated the determinants of farmers' participation in Anchor Borrowers' Programme.

METHODOLOGY

The study was carried out in South-East Nigeria. South-East Nigeria is located within latitude 5^0N to 6^0N of Equator and latitudes 6^0E and8^0E of Greenwich Meridian. The South-East Zone of Nigeria is made up of Enugu, Anambra, Imo, Abia and Ebonyi states. The zone occupies a total land mass of 10,952,400 hectares with a population of 16,381,729 persons (NPC, 2006). The zone experiences an average annual temperature, rainfall, relative humidity, number of rain-days and hours of sunshine per day of 27^0C, 1800mm, 72%, 4.4hours and 142 days, respectively. Despite the observed erratic nature of both rainfall and dry spells, the location of the zone within the tropical rainforest belt of the country encourages and allows the growth and survival of most tropical food crops like yam, cassava, maize, cocoyam, vegetables, rice and livestock production. According to Okeye (2010), about 60-70% of the inhabitants of this zone are observed to engage in agriculture mainly crop farming and animal rearing.

The target populations for the study were beneficiaries and non-beneficiaries of Anchor Borrowers' Programme in rice production in South-East Nigeria. The list of beneficiaries was collected from NIRSAL ICT in CBN and through snowball for non-beneficiaries. A multi-stage sampling procedure was adopted in selecting samples for the study. The first stage involved purposive selection of three states out of the five states in the South- East, Nigeria, namely: Ebonyi, Anambra and Imo due to the prevalent cultivation of rice in the areas. Censored selection of Ivo LGA, Afikpo North,Ezza South, Ohaozara, Awka North, Orumba North, Ihitte Uboma, Ideato North, Ideato South and Oguta was adopted; this was promoted due to the fact that not all local government in the area are beneficiaries and to also have a good representative of the study area. A list of beneficiaries of ABP was collected from NIRSAL ICT in CBN.

A proportionate sampling technique was used to select farmers from the participating local government areas to give a sample size of 120 beneficiaries. Proportionate sampling is a type of stratified sampling with proportionate stratification. The sample size of each stratum is proportionate to the population size of the stratum. It is a sampling method used when a population is composed of several subgroups that are different in number. Each sample stratum has the same sample fraction. In proportionate sampling, the jth sample size is given as;

$$Nj = k \times n$$

N

Where,

nj= size of the jth stratum

K= the population size in the stratum

N= the entire population

n = sample size (As used by Chidiebere-Mark, 2019)

Selected States	Participating LGAs	Total Number of Beneficiaries	No Sampled
Ebonyi	Ivo	94	21
	Afikpo North	76	17
	Ezza South	123	27
	Ohaozara	96	21
Anambra	Awka North	41	9
	Orumba North	40	9
Imo	Ihitte Uboma	32	7
	Ideato north	20	4
	Ideato South	15	3
	Oguta	10	2
Total		**547**	**120**

Source: NIRSAL ICT Unit in CBN

Ivo 94/547 × 120 = 21

Afikpo North 76/547 × 120 =17

Ezze South 123/547×120 =27

Ohaozara 96/547×120 = 21

Awka North 41/547 ×120 =9

Orumba 40/547 × 120 = 9

Ihitte Uboma 32/547×120= 7

Ideato North 20/547×120= 4

Ideato South 15/547×120=3

Oguta 10/547×120 =2

Primary data were collected for the study using structured questionnaires from the beneficiaries. Also secondary data was collected from NIRSAL ICT in CBN. **Objective i** which is to determine the level of rice farmers' participation in Anchor Borrowers' Programme was measured using mean score and was realised through a 3 point likert-type scale of no participation =1,participated =2 and fully participated=3. The cut-off point was determined by adding up the rating (3+2+1=6) and dividing it by 3 to give 2.0. Any mean score equal or above 2.0 was considered high and less than 2.0 was regarded as low. .

Objective ii is to identify the constraints to rice farmers' participation in Anchor Borrowers' Programme; respondents were asked to indicate the seriousness of each constraint on a 3 point likert-type scale (serious constraints =3, unserious constraints =2 and not a constraint =1). The mean score was obtained by adding 3+2+1=6 divided by 3 =2. Therefore the cut-off mean of 2 was obtained, any mean score of 2.0 and above was considered as a serious constraint and below 2.0 was considered as not a serious constraint.

Objective iii was analysed using Ordinary Least Square regression analysis. The implicit form of the regression model is specified as follows:

$Y = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b5x5 + ei$

Y =Level of Rice farmers' Participation in Anchor Borrowers Programme (mean score)

X = selected socio-economic characteristics

Where;

X_1 = age (years)

X_2 = Sex (female =0, male =1)

X_3 =level of education (years)

X_4 =household size (number)

X_5 =Total household income (Naira)

X_6 = access to credit (yes=1, no=0)

X_7 =Farm size (Number of Hectares)

X_8 =Extension contacts (yes=1, no=0)

ei = error term

The four functional forms are explicitly specified as follows:

RESULTS AND DISCUSSION

Level of Beneficiaries' Rice Farmers' Participation in Anchor Borrowers' Programme

The distribution of beneficiary rice farmers according to their level of participation in ABP is presented in Table 1. The various activities that farmers are expected to participate in were rated in a 3 point likert-type scale of no participation =1, participated =2 and fully participated=3. The cut-off point was determined by adding up the rating (3+2+1=6) and dividing it by 3 to give 2.0. Any mean score equal or above 2.0 was considered high and less than 2.0 was regarded as low, using the grand mean of 2.52 which is above the discriminating index ($\bar{x}$ =2) of the finding indicated that beneficiary rice farmers of Anchor Borrowers' Programme had high participation in both the planning and implementing stage. This implies that farmers were involved at each stage of the programme because when farmers are involved in any developmental programme they tend to participate and see the programme as their own. This is in consonance with Ani (2013) who noted that farmers are much likely to support extension programmes if they are involved in the process of determining their objectives. He went further to explain that implementation of the extension programme suffers once the farmers are not part of the planning. According to Badejo (2018), about 70,000 farmers participated in ABP in Kebbi. The low standard deviation values indicated that the farmers did not vary much in their responses.

Table 1: Distribution of Beneficiaries According to their Level of Participation in Anchor Borrowers' Programme

Participation of rice farmers in ABP	Anambra		Ebonyi		Imo		South-East		
	($\bar{x}$)	SD	($\bar{x}$)	SD	($\bar{x}$)	SD	($\bar{x}$)	SD	Rk
Planning stage									
Capacity building through training	2.90	.30	1.70	.46	2.65	.62	2.77	.91	H
Meetings	2.30	.46	1.25	.44	2.17	.59	2.38	.65	H
Cooperative formation	2.90	.30	2.35	.74	2.77	.48	2.87	.66	H
Opening of loan bank account	3.00	.00	2.40	.87	2.90	.44	2.92	.71	H
Registration	2.30	.46	1.95	.50	2.22	.48	2.46	.72	H
Seminar	2.10	.30	2.10	.63	2.12	.40	2.42	.65	H
5% equity contribution	3.00	.00	1.65	.86	2.80	.56	2.67	.97	H
Negotiations with off takers of farmers produce	2.50	.51	1.50	.82	2.42	.68	2.59	.67	H
Measuring of farmers land with GPS	2.10	.30	2.00	.64	2.12	.40	2.48	.76	H
Preparing of Economics production	2.90	.30	2.05	.59	2.77	.42	2.85	.77	H
Implementation Stage									
Monocropping	1.90	.55	2.45	.68	2.05	.59	2.43	.74	H
Land clearing	2.00	.00	2.55	.59	2.10	.30	2.75	.90	H
Land preparation	2.00	.00	2.60	.49	2.10	.30	2.28	.45	H

Nursery Practices	2.00	.00	2.60	.49	2.10	.30	2.28	.45	H
Planting/transplanting	2.30	.46	2.65	.48	2.40	.49	2.46	.50	H
Fertiliser application	2.90	.30	2.65	.48	2.85	.36	2.77	.42	H
Application of pesticides	2.60	.49	2.65	.48	2.57	.50	2.61	.49	H
Harvesting	2.00	.00	2.30	.65	2.05	.32	2.14	.47	H
Threshing	2.00	.00	2.60	.59	2.12	.33	2.28	.50	H
Bird scaring	1.80	.41	2.40	.59	2.00	.51	2.09	.57	H
Bagging	2.00	.00	2.55	.68	2.10	.38	2.26	.54	H
Monitoring	3.00	.00	2.60	.59	2.95	.22	2.80	.45	H
Grand mean							**2.52**		

Source: Field Survey, 2020, *Discriminating index 2,≥2 High participation (H);<2 Low participation(L), RK Remark*

Constraints Faced by Beneficiary Rice Farmers in Participating in Anchor Borrowers' Programme

The distribution of respondents according to their constraints in participating in ABP is presented in Table 2. The result showed a grand mean of 2.45 implying that beneficiaries in the study area faced serious constraints since the grand mean is greater than the cut-off mean. From the result, all the constraints listed were actually what the farmers go through in participating in ABP. Poor administration/complex protocol ($\bar{x}$=3.0), insufficient or unavailability of land ($\bar{x}$=3.1), long bureaucratic procedures ($\bar{x}$=3.29), delay in loan disbursement ($\bar{x}$=3.39) and high cost of labour ($\bar{x}$=3.2) were the most severe constraints faced by beneficiary rice farmers in southeast, Nigeria. Sometimes, a farmer can get frustrated in trying to meet up with programme requirements because of the long bureaucratic approach which can hinder a farmer from participation. Also, a farmer may have interest in the programme but because the farmer does not have access up to a hectare, he finds it difficult to participate. Constraints faced by rice farmers non-beneficiaries of ABP in the study area include ($\bar{x}$=3.36), limited awareness ($\bar{x}$=3.62), insufficient/unavailability of land ($\bar{x}$=3.37) and lack of incentives ($\bar{x}$=3.75) were the major constraints faced by the non-beneficiaries farmers in the study area. Most of the non-beneficiaries have poor knowledge of ABP and even those that were aware were constrained from participation because of insufficient land. This is because for you to participate you must have at least one hectare of land as a condition. Badejo (2018) observed that there is limited awareness of Anchor Borrowers' Programme among rice farmers. The implication of limited awareness is low participation because a farmer cannot participate in a programme that he/she has no knowledge of. This result is also in line with the study of Isife and Madukwe (2005) on the constraints to farmers' effective participation in Agric extension programmes of non-profit nongovernmental organisations in South-Eastern Nigeria. Results showed that unfavourable financial terms, poor extension agent outputs, poor farmers' educational training, poor farmer-agent contacts and complexity of recommended technologies were major constraints to farmers' effective participation in extension programmes.

Socioeconomic Determinants of Rice Farmers' Participation in Anchor Borrowers' Programme

HO₁: The socioeconomic characteristics of rice farmers do not significantly influence their level of participation in Anchor Borrowers' Programme.

Table 3 shows the ordinary least squares regression estimates of the influence of the socioeconomic characteristics of the rice farmers on their participation in Anchor Borrowers' Programme. From the results in Table 4, the linear function was chosen as the lead equation based on the high magnitude of the F-ratio and the coefficient of determination as well as the number of the significant variables. The F-ratio of 7.757 which was significant at 1% significance level shows the goodness-of-fit of the model. The coefficient of determination (R^2) of 0.577 entails that 57.7% of the variations in participation of the rice farmers in Anchor Borrowers' Programme were explained by their socioeconomic variables, the low value of R^2 may be as a result of some other important variables that are not socioeconomic variables that can affect farmers' participation that were not captured in the model such as awareness, programme conditions/requirement. From the Table, educational level, household size and access to credit were the significant socioeconomic variables influencing the participation of the rice farmers in Anchor Borrowers' Programme.

The coefficient of educational level (0.038) was positive and significantly related to the participation of the rice farmers in Anchor Borrowers' programme at 1%. This implies that as the educational level of the rice farmers increases, their participation in Anchor Borrowers' Programme also increases. This could be attributed to the fact that education increases the aptitude for information and also makes individuals more receptive to innovations. Hence, educated farmers might be in a better position to get information on newly introduced programmes and also will easily be moved to undertake the processes involved in benefiting from such programmes. This is in line with the findings of Sambe, Korna and Yaga (2020) where educational qualification was found to be positively related with access to credit. However, Okeke, Mbanasor and Nto (2019) found a negative significant relationship between educational level and access to Anchor Borrowers' Programme. According to Okeke *et al.* (2019), farmers with formal education have the capacity to understand credit schemes and their terms and conditions compared to farmers with low levels of education.

The coefficient of household size (-0.019) was negative and significantly related to the participation of the rice farmers in Anchor Borrowers' Programme at 5%. This implies that the higher the household size of the farmers, the lower their level of participation in the programme. This could be judged to the farmers having more mature adult household members who provide good support to them thereby annulling their need for external credit aids. This is contrary to the findings of Ayinde *et al.* (2018) and Okeke *et al.* (2019) which show a significant positive relationship between household size and access to Anchor Borrowers' Programme. Also, this could mean that the higher the household size the more fragmented the land becomes which discourages mechanisation because to qualify for ABP participation one must have at least one hectare.

The coefficient of access to credit (-0.089) was negative and significantly related to the participation of the rice farmers in Anchor Borrowers' programme at 1%. This implies that rice farmers who have access to credit are unlikely to participate in Anchor Borrowers' Programme. This could be due to the fact that farmers that have access to credit have financial outlays from

which they can resort to address their financial needs. The finding corroborates with the findings of Opeyemi (2019) where access to credit was found to be negative but significantly related with participation in Anchor Borrowers' programme. Access to credit may not have a direct relationship on participation and farm output, but it could have a positive and significant indirect impact through its positive influence on agricultural technologies adoption, increased capital for farm investment, hired labour, and improved household welfare through improved health care and better nutrition. In addition, Feder (1990) posit that credit allows farmers to satisfy the cash needs induced by the production cycle which characterise agriculture; land preparation, planting, cultivation, and harvesting are typically done over a period of several months in which very little cash revenue is earned, while expenditure on materials, purchased inputs and consumption need to be made in cash.

Table 3: Regression Estimate on the Significant Influence of the Socioeconomic Characteristics of Rice Farmers and their Level of Participation

Variables	+Linear	Semi-log	Exponential	Double log
Constant	2.359	0.849	2.212	0.804
	(19.422)***	(13.508)***	(3.969)***	(2.935)***
Age	.001	.001	.026	.025
	(0.597)	(.656)	(.256)	(.243)
Sex	0.067	0.034	0.136	0.137
	(1.590)	(1.560)	(1.381)	(1.386)
Educational level	0.038	0.022	0.084	0.106
	(3.015) ***	(3.307) ***	(0.882)	(1.104)
Household size	-0.019	-0.010	-0.342	-0.340
	(-2.681) **	(-2.565) **	(-3.496) ***	(-3.467) ***
Income	-6.369	-3.102	.023	.015
	(-0.970)	(-0.914)	(0.238)	(0.154)
Access to credit	-0.089	-0.045	-0.363	-0.349
	(-4.160)***	(-4.042)***	(-3.483) ***	(-3.350) ***
Farm size	-0.002	-0.001	0.053	0.045
	(-0.761)	(-0.901)	(0.587)	(0.505)
f-statistics	7.757***	7.702***	3.730***	3.657***
R^2	0.577	0.545	0.420	0.412
R adjusted	0.480	0.393	0.393	0.344

Source: Field Survey, 2020 * = *significant at 1%, ** = significant at 5% $H0_6$: rejected at 5% level**

CONCLUSION

The study concluded that the socioeconomic characteristics of beneficiaries of Anchor Borrowers' programme determined their level of participation. There were serious constraints encountered by the beneficiaries which include, among others, delay in input supply, delay in loan disbursement, and a long bureaucratic approach.

RECOMMENDATIONS

Based on the major findings of the study, the following recommendations were made:

1. ABP facilitators should ensure timely disbursement of fund and planting materials before planting season sets in.

2. The programme should reduce the condition of the farmer having access to at least a hectare of land before participation so that other farmers who do not have access to up to 1 hectare can benefit.

3. Government should encourage the continuity of the programme so that its aim towards achieving food security of the nation will be attained.

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