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ASSESSING CREDIT UTILIZATION AND PERFORMANCE OUTCOMES OF SMALLHOLDER RICE FARMERS UNDER THE ANCHOR BORROWERS' PROGRAMME IN SOUTH EAST NIGERIA

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ABSTRACT

This study assessed the utilization of credit and its effect on performance outcomes among smallholder rice farmers benefiting from the Anchor Borrowers' Programme (ABP) in Southeast Nigeria. Despite Nigeria's vast ecological potential and policy efforts, domestic rice production remains below demand, largely due to financial constraints faced by smallholder farmers. The study used descriptive statistics and binary logistic regression on data collected from 720 rice farmers (360 beneficiaries and 360 non-beneficiaries) across Abia, Anambra, and Ebonyi States. Results showed that the total credit accessed (₦39.93 million) was entirely used for paddy production, indicating 100% utilization. Binary logistic regression revealed that several factors significantly influenced access to the amount of credit demanded: age ($p < 0.01$), farm size ($p < 0.10$), marital status ($p < 0.05$), income from other sources ($p < 0.05$), gender ($p < 0.05$), and farming experience ($p < 0.05$). The study recommended sustainance in-kind input disbursement under the ABP to maintain high utilization rates and prevent credit diversion, expand eligibility criteria to improve equitable access for female and older farmers, encourage income diversification among farmers to strengthen their creditworthiness.

INTRODUCTION

Rice is a staple food in Nigeria, playing a pivotal role in food security, rural employment, and household income generation. Despite being ecologically blessed with fertile land and favourable conditions for paddy rice cultivation, Nigeria's local production falls far short of national demand. Gyimah-Brempong, Dorosh, Kuku, Predesha, and Ajibola (2012), as well as Ogunforwora (2007) noted that while national rice demand is estimated at 5.2 million metric tons per annum, local production only meets about 3.3 million tons, leaving a demand gap of 1.9 million tons, which is covered by importation. This continued reliance on imports exerts a significant burden on Nigeria's foreign exchange reserves.

The paradox becomes even more evident when contrasted with the rising availability of advanced production technologies and vast areas of underutilised arable land. However, paddy rice production still remains suboptimal (Akinniran & Faleye, 2020). Smallholder farmers, the backbone of local rice production, face several challenges, including high input costs, unaffordable equipment, policy inconsistencies, and most importantly, limited access to formal credit. As observed by Ehirim and Oguoma (2013), these farmers are stuck in a cycle of low productivity due to a lack of capital to expand their production.

The formal financial sector, especially Deposit Money Banks (DMBs), considers lending to agriculture a high-risk venture due to several structural issues such as poor value chain coordination, long gestation periods, weather volatility, and lack of formal credit histories among rural farmers (Augustine, Jokthan, Zafari, & Bivan, 2013). The situation is compounded by the failure of previous government interventions such as the Agricultural Credit Guarantee Scheme and the Rural Finance Institution Building Programme, which have had limited impact due to lukewarm participation by commercial banks.

Consequently, smallholder rice farmers in Nigeria face poor access to credit, low productivity, limited profit margins, and poor market integration. These challenges are exacerbated by issues such as inadequate extension services, lack of post-

harvest infrastructure, and rural isolation. Credit is crucial in financing critical inputs, hiring labour, and adopting new technologies, all of which are essential for improved yields (Ali & Awade, 2019; Awotide, Abdoulaye, Alene & Mayong, 2015).

However, accessing credit is only half the equation. Effective utilization of the funds—avoiding issues like late disbursement, partial access, or credit diversion (credit fungibility) is equally critical to realizing productivity gains (Akran, 2008; Cole, 2009). Farmers who access less than half of their required capital are considered quantity-constrained, which severely limits their ability to plan production efficiently (Dong, Lu & Featherstone, 2012).

In recognition of these persistent financial gaps, the Federal Government of Nigeria launched the Anchor Borrowers' Programme (ABP) in 2015 through the Central Bank of Nigeria (CBN). The program aims to provide smallholder farmers with credit in both cash and kind (such as fertilizers, seedlings, and mechanization services), to enhance productivity and stabilize food supply. The repayment model is designed to be seamless, where the farmer repays through produce sales to agro-processors (the "anchors").

Despite the ambitious thrust of the ABP, concerns persist about its actual impact on farmers' performance outcomes. Issues such as late input delivery, inadequate quantity of credit disbursed, lack of proper monitoring, and inefficiencies in value chain integration could limit its effectiveness. Several studies (Zhao, Zhang & Barry, 2014; Boucher, Guirkinger & Trivelli, 2009) have examined the consequences of credit constraints on farm productivity, but a targeted analysis of how ABP credit is utilized and its relationship with performance outcomes among rice farmers in Southeast Nigeria remains scant.

Despite the introduction of the Anchor Borrowers' Programme as a policy intervention to bridge the financing gap in rice production, the performance outcomes of rice farmers in Southeast Nigeria remain largely suboptimal. Persistent challenges such as insufficient credit access, misuse or diversion of funds (credit fungibility), and low productivity raise concerns about the efficacy of the programme. Many rice farmers still operate with minimal inputs and achieve marginal returns on investment. While earlier literature identifies the presence of credit constraints and the theoretical importance of credit utilization, empirical evidence on how credit accessed under ABP translates into tangible performance gains for smallholder rice farmers in this region is lacking. This disconnect presents a major concern for agricultural policy formulation and rural development strategies.

Although several studies have investigated credit access among smallholder farmers in Nigeria, few have specifically addressed the actual utilization of credit disbursed under the Anchor Borrowers' Programme. Even fewer have linked this utilization to concrete performance metrics such as yield, farm income, and productivity outcomes. Most existing works tend to focus either on access alone or rely on national-level data, ignoring regional specificities. Therefore, this study seeks to fill the gap by providing a micro-level, location-specific analysis of how credit utilization under ABP affects smallholder rice farmers' performance in Southeast Nigeria. This is essential in understanding whether financial inclusion through ABP is achieving its stated goals and where policy and implementation gaps remain.

Objectives

The specific objectives are to;

(i) determine the factors influencing access to the amount of credit demanded by smallholder rice farmers under the Anchor Borrowers' Programme in Southeast Nigeria.

(ii) assess the level of credit utilization and its influence on the performance outcomes (productivity, income, profitability) of rice farmer beneficiaries of the programme in the study area.

RESEARCH METHODOLOGY

The study was conducted in the South-East of Nigeria. The region is located between latitudes 40°47′35″N and longitudes 80°27′10″E (Olumba et al., 2021). The Southeast geopolitical zone comprises five states: Abia, Anambra, Ebonyi, Enugu, and Imo. It is made up of eighty-five (85) Local Government Areas (LGAs). The region had a population of 16,395,555 people according to the 2006 census (National Population Commission, NPC, 2006), and an estimated population of 22,012,828 people (NPC, 2021). The region has a total land area of 33,664 km2 (National Bureau of Statistics, NBS, 2019). The zone is bounded by the River Niger on the West, the riverine Niger Delta on the South, the flat North Central to the North, and the Cross River on the East. The region is predominantly agrarian, with agriculture serving as the primary livelihood source, particularly among rural households. It also serves as a hub for commercial activity, with widespread engagement in micro, small, and medium-scale enterprises, including agro-processing and trade. The agro-ecological conditions of the zone are favourable to the cultivation of food crops such as yam, cassava, rice, cocoyam, and maize, and cash crops including oil palm, rubber, cocoa, banana, and various fruits. A multi-stage stratified sampling technique was employed to select respondents for the study. The sampling process involved three key stages:

Stage 1 involved the stratification and selection of Ebonyi, Abia, and Anambra purposively from the selected five States in the zone based on their active participation in the Anchor Borrowers' Programme (ABP) and their prominence in rice production. Each selected State was treated as a stratum. Stage 2 involved the selection of ABP Beneficiary Farmers. A list of ABP-participating rice farmers was obtained from the Development Finance Offices of the Central Bank of Nigeria (CBN) in the selected States. From this list, a proportionate random sampling method was used to select 70% of registered rice farmers across the participating LGAs in each state. A total of 360 ABP beneficiaries were selected and distributed as follows: Abia State (84 farmers), Anambra State (109 farmers), Ebonyi State (167 farmers). Stage 3 involved the selection of 360 Non-Beneficiary Farmers using the same procedures for the beneficiary to ensure comparability, and an equivalent number of non-beneficiary rice farmers were selected from the lists of non-beneficiary farmers obtained from the Agricultural

Development Programmes (ADPs) and Rice Farmers Association of Nigeria (RIFFAN) representatives in each State. Using the same sampling proportions, 360 non-beneficiaries were randomly selected: Abia State (84 farmers), Anambra State (109 farmers), and Ebonyi State (167 farmers), making a total sample size of 720 rice farmers. The study used both Primary and secondary data. Primary data were collected through a structured questionnaire administered to the 720 sampled rice farmers. Secondary data were obtained from official records of the Central Bank of Nigeria, ADPs, and RIFFAN, particularly lists of registered ABP participants, disbursed input records, and repayment performance data. Data collected were analyzed using a combination of descriptive and econometric models.

Model Specification

factors influencing accessibility to the amount of credit demanded by smallholder rice farmers under the Anchor Borrowers' Programme

Percentage Accessibility

The percentage accessibility was determined using the accessibility index, which was adopted from Okurut et al (2005) and stated as:

$$\%\ \boldsymbol{Accessibility} = \frac{\boldsymbol{Amount\ of\ credit\ demand\ met}}{\boldsymbol{Total\ credit\ requested}} \times 100 \qquad eqn\ (1)$$

Factors Influencing Accessibility to the Amount of Credit Demanded.

The factors influencing the accessibility to the amount of credit demanded were determined using the binary logistic regression technique. The probability that an i^{th} farmer is a beneficiary whose credit demand is met is denoted as P, and 1 – P otherwise. Therefore, rice farmer beneficiaries whose credit demands are met is represented as 1, while other whose demands were not met or fulfilled are represented as 0, hence, the dummy for the dependent variable (accessibility to the amount of credit demanded). The odd ratio of $\frac{P}{1-P}$ is subjected to a binary logistic regression estimate to isolate the factors influencing the probability that the loan is accessed by farmers in the area. The odd ratio is subjected the socio-economic features of the farmers and other production variables in the area and expressed as:

$$\log\left\{\frac{P}{1-P}\right\} = a + \beta_1 X_1 + \beta_2 X_2 + \text{----------} + \beta_n X_n + e \text{(Nwosu , 2014)}\ldots\ldots\ldots\ldots\ldots\text{eqn. (2)}$$

Where P = probability that an applicant has access to credit demanded and it is denoted as 1 otherwise 0 for no access. The model is thus stated as;

X_1 = Age (in years)
X_2 = Household size (number of persons)
X_3 = Level of Educations (years)
X_4 = Farm size (in hectares)
X_5 = Marital status (Dummy: 1 = married 0 = otherwise)
X_6 = Membership of a co-operative (Dummy; member = 1, 0=otherwise)
X_7 =Total Income
X_8 = Gender (Dummy; male = 1, female = 0)
X_9 = Farming Experience (number of years)
X_{10}=Certificate issuance after training(Dummy;1 =yes,0=no)
e = Error Term.

RESULTS AND DISCUSSION

Factors Influencing the Accessibility to the Amount of Credit Demanded

The result of the factors influencing the accessibility of the amount of credit demanded is presented in Table 1.

Table 1: Logit regression of the factors influencing the accessibility to the amount of credit demanded by rice farmer beneficiaries of the Anchor Borrowers' Programme

			Marginal Effects	
Access to credit demanded	**Coeff.**	**Std. Err.**	**dy/dx**	**Std.Err**
Age	-0.0156*	0.0156	-0.011*	-3.59
Household size	0.0632	0.0603	0.0132	0.0125
Education	-0.0241	0.0294	-0.005	0.0061
Farm size	0.5674***	0.3221	0.1185***	0.0662
anMarital Status	0.8187**	0.4102	0.1709**	0.0841
Cooperative membership	-0.2375	0.4903	-0.0496	0.1023
Income from Paddy	-9.26E-07	1.70E-06	-1.93E-07	3.55E-07
Income from other sources	1.38E-05**	6.91E-06	2.88E-06**	1.41E-06
Gender	0.6598**	0.2653	0.1378**	0.0538
Years of Experience	0.0455**	0.0195	0.0095**	0.0040
Certificate issued after training	0.5245	0.4875	0.1095	0.1012
Constant	-0.6087	0.7945		
Number of observations	**360**			
Log LH	**-217.862***			
Prob>chi2	**0.0009**			

Pseudo R^2	**0.0677**

*significant at 1%, **significant at 5%, and ***significant at 10% levels.
Source: Computer Results of the Field Survey Data (2024) using STA

Table 1 shows the logit regression of the factors influencing the accessibility to the amount of credit demanded by rice farmer beneficiaries of the Anchor Borrowers' Programme in the area. Results showed that the likelihood chi-squared was 217.862 and was significant at 1% level. This is an indication of strong evidence against the null hypothesis that all coefficients are equal to zero and the model has no predictive power. Therefore, the alternative hypothesis was accepted and the study concluded that the model specified has a predictive power. The pseudo R-squared value was 0.0677 (6.77%). This does not mean that the explanatory variables specified did account for the variability in the dependent variable. Rather the size of the pseudo R-square here stems from the binary nature of the dependent variable. Table 4.2.2 also shows the coefficients and marginal effects of variables specified. In this case, the marginal effect values are highly considered due to the fact that it measures the change in the probability or likelihood of the outcome (dependent variable) for a one-unit change in the independent variable, while holding all other variables constant. It also provides a more intuitive understanding of the relationship between the independent variable and dependent variable, and accounts for the non-linear relationships and interactions between variables, unlike the coefficient values.

The marginal effect of age (-0.011) was negative and significant at 1% level. This is an indication that a one percent increase in age decreases the likelihood of accessing the requested credit amount by 1.1%. This implies that younger farmers are more likely to access the credit amount demanded or requested. This also indicated that the organizers of Anchor Borrowers' Programme consider more of younger rice farmers in their eligibility criteria for accessing the requested credit amount. This is in consonance with work done by Opeyemi, *et.al.,* (2020) on ABP and youth rice farmers in northern Nigeria. He discovered that youth farmers who are not married are more likely to participate in ABP

The marginal effect of farm size (0.1185) was positive and statistically significant at 10% level. This implies that a one-per cent increase in farm size increases the likelihood of accessing the requested credit amount by 11.9%. This also indicates that larger rice farms/fields are more viable and rice farmers within this farm size are more eligible to access the amount of credit demanded. These findings are similar to those of (Ayinde et.al., 2018, and Silong, 2017) who discovered that farm size has a positive effect on access to credit.

The marginal effect of marital status (0.1709) was positive and statistically significant at 5% level. This implies that being married increases the likelihood of accessing the requested credit amount by 17.1%. This is an indication that the organizers of the Anchor Borrowers' Programme consider more of married rice farmers in their eligibility criteria for accessing the amount of credit demanded, since married farmers have more stability and security (Silong and Gadanaski,2020), who reported in their work that marital status will positively influence credit decisions.

The marginal effect of income from other sources (2.88E-06) was positive and statistically significant at 5% level. This implies that a one-per-cent increase in income from other sources increases the likelihood of accessing the requested credit amount by 0.29%. This is an indication that the Anchor Borrowers' Programme favours more rice farmers with diversified income streams. This also indicates that diversified income streams enhance creditworthiness. This was also seen in the findings of Ayinde *et.al. (*2018), who discovered that income from paddy rice has a significant influence on farmers' access to the Anchor Borrowers' programme fund.

The marginal effect of gender (0.1378) was positive and statistically significant at 5% level. This implies that being male increases the likelihood of accessing the requested credit amount by 13.8%. This is also an indication of gender disparities and bias in the eligibility criteria of the organizers of the Anchor Borrowers' Programme in the Southeast, Nigeria. The result conforms to that of Gideon and Mensal (2016), whose findings showed that gender is an important factor influencing farmers' access to credit.

The marginal effect of years of experience in rice farming (0.0095) was positive and statistically significant at 5% level. This implies that a one-percent increase in years of experience increases the likelihood of accessing the requested credit amount by 0.95%. This also implies that the organizers of Anchor Borrowers' Programme consider more of experienced rice farmers in credit disbursement. Michael and Sang (2022) also discovered that years of experience has positive effect on access to credit.

Credit Utilization

The result of credit utilization is presented in Table 2.

Table 2: Percentage utilization of credit supplied to rice farmer beneficiaries of the Anchor Borrowers' Programme in Southeast, Nigeria

Items	Values
Volume of credit (value of farm inputs) supplied	**₦** 39,930,000
Amount allocated to paddy production	**₦** 39,930,000
Amount allocated to other production activities	**₦**0.00
%Utilization	100%

Note: Credit here was measured by the value of farm inputs demanded and supplied
Source: Field Survey Data (2024)

Table 2 presents the percentage utilization of credit by rice farmer beneficiaries under the Anchor Borrowers' Programme (ABP) in the study area. The findings reveal that the total credit disbursed, amounting to ₦39,930,000, was fully applied to paddy rice production. This indicates a 100% utilization rate, suggesting that all credit accessed by the farmers was used strictly for the intended purpose, rice farming. There was no evidence of diversion of funds to non-agricultural or alternative farming activities.

This outcome can largely be attributed to the in-kind nature of the credit delivery system under the ABP. Instead of receiving cash, beneficiaries were provided with farm inputs such as seedlings, fertilizers, and agrochemicals, equivalent in value to

the approved loan amount. This approach likely reduced the possibility of fund mismanagement or misuse, ensuring that resources were directed solely toward enhancing rice production.
The observed full utilization rate highlights a notable success of the ABP in aligning credit delivery with actual production needs, thereby improving the accountability and effectiveness of agricultural financing. Similar findings were reported by Isitor et al. (2014), who noted that farmer beneficiaries in their study also fully utilized agricultural loans for their intended purposes. This reinforces the argument that well-structured credit systems, especially those that minimize cash handling, can significantly enhance credit discipline among smallholder farmers and improve program impact.

CONCLUSION

The study concludes that the Anchor Borrowers' Programme (ABP) significantly supported rice farming in Southeast Nigeria by ensuring 100% credit utilization through its in-kind input distribution model. Credit accessed was fully directed to paddy production with no diversion to non-agricultural purposes. Additionally, access to the amount of credit demanded was influenced by several socio-economic factors such as age, farm size, marital status, income diversification, gender, and farming experience. These findings highlight the importance of both access and proper utilization of agricultural credit in improving farm productivity and income. The ABP, by limiting cash disbursement and focusing on input delivery, minimized misuse and maximized farm-level impact.

RECOMMENDATIONS

1. Sustain in-kind input disbursement under the ABP to maintain high utilization rates and prevent credit diversion.
2. Expand eligibility criteria to improve equitable access for female and older farmers.
3. Encourage income diversification among farmers to strengthen their creditworthiness.
4. Strengthen capacity-building programs and offer certification post-training to enhance eligibility.
5. Increase the volume of credit to align with the actual production scale and input needs of large-scale smallholder farmers.

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