



## Effect of Anchor Borrowers' Programme on Rice Yield in North-Central, Nigeria

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### Abstract

*The Anchor Borrowers' Programme (ABP) was launched to boost rice production in Nigeria. Empirical studies on rice production abound in literature but effectiveness of ABP in enhancing rice yield, particularly in the North-Central region of Nigeria remained under explored. Hence, effect of ABP on rice yield in North-Central, Nigeria was investigated. Using a multistage sampling procedure, 314 respondents (157 beneficiaries and 157 non-beneficiaries) were randomly sampled and interviewed. Data were analysed using mean, percentage, Propensity Score Matching (PSM) and multiple linear regression analysis. The mean age of beneficiaries and non-beneficiaries were 42 and 44 years, respectively; 73.2% and 62.4% were male; 64.3% and 56.1% were married, respectively. Beneficiaries and non-beneficiaries had farm size of 3.3±1.0ha and 2.9±1.1ha; earned an average of ₦58,068.15 and ₦56,889.36 monthly, respectively. Beneficiaries' yield of 453.95kg/ha was higher than non-beneficiaries (367.36kg/ha). The ABP positively impacted on rice production as*

beneficiaries had an additional yield of 105.82kg/ha over non-beneficiaries. Household size ( $p=0.03$ ), education ( $p=0.00$ ) and farming experience ( $p=0.03$ ) influenced rice yield among beneficiaries. The study concludes that ABP impacted positively on rice yield in North-Central, Nigeria and sustainability of ABP is, therefore, recommended.

## Introduction

Rice stands out as a burgeoning commodity in Nigeria's food sector, showing promising prospects for sustained expansion (Onoja *et al.*, 2020 and Ogunkunle, *et al.*, 2023). Consuming a standard cup of rice, weighing 65 grams, provides approximately 53 grams of carbohydrates, meeting 23.6% of the daily carbohydrate intake and 10.6% of the daily energy requirement based on a 2000-calorie diet (Obianefo *et al.*, 2022). Nigeria exhibits notably accelerated growth in rice consumption compared to its West African counterparts, driven by rapid population growth, heightened urbanisation, and a prevailing preference for this staple product. The annual rice demand in Nigeria has been on the rise, increasing by 7.8%, while supply has grown at a contrasting rate of 5.5%, resulting in a deficit demand-supply gap of 2.3% (Obianefo *et al.*, 2020).

Rice yield in Nigeria remained persistently low, ranging from 2 to 3 tons per hectare, falling short of the potential yield of 4 to 7 tons per hectare (Obianefo *et al.*, 2022). This is due to challenges such as over-dependence on smallholder farmers, inadequate access to credit facilities, low yield, inefficiencies in resource allocation, limited access to improved varieties, inefficient fertiliser usage and farmers' over-reliance on traditional technologies. These challenges have raised concerns among scholars and policymakers (Oluwadamilola, 2018; Onoja *et al.*, 2020). The recent escalations in conflicts between herders and farmers, along with other insurgencies and agitations from various groups in Nigeria, have further widened the demand-supply deficit (Onoja *et al.*, 2022).

Efforts to address the shortfall in domestic rice supply led to the launch of the Anchor Borrowers' Programme (ABP) by the Federal Government of Nigeria through the Central Bank of Nigeria (CBN) on 17th November 2015. The ABP aims to enhance rice yield, generate employment opportunities, alleviate poverty, and combat food insecurity rampaging the country (Ejiogu, 2021; Ojo *et al.*, 2023; Akinbile *et al.*, 2023). However, domestic rice production in Nigeria seems not to have significantly improved after several years of nationwide implementation of ABP. Thus, there is a need to fact-check the impact of ABP on rice yield particularly from the primary beneficiaries (farmers). Empirical studies on rice production abound in literature, but the effect of ABP on rice yield in North-Central Nigeria remains inadequately researched. Therefore, investigating the contributions of ABP to rice yield in North-Central Nigeria is crucial for repositioning the programme to fulfil its intended purpose effectively. The study specifically:

1. described the socio-economic characteristics of the rice farmers in the study area;
2. estimated the rice yield of ABP beneficiaries and non-beneficiaries in the area;
3. identified factors influencing the rice yield of beneficiaries in the study area.

The study hypothesized that there is no significant difference between the yield of ABP beneficiaries and non-beneficiaries in the study area.

## Methodology

The study was carried out in North-central region of Nigeria. It is one of the leading rice-producing regions that actively participated in the Anchor Borrowers' Programme (ABP). The area is situated within the southern guinea savannah agro-ecological zone with a total landmass of 226,668 km<sup>2</sup> representing approximately 24.9% of the country's total land area (NBS, 2020). The North-central region exhibits a rich ethnic diversity including the Eggons, Igalas, Idoma, Okuns, Tivs, Gwaris, Nupes, and others. Farmers predominantly dominate the region and they rely mainly on manual labour.

Multistage sampling procedure was used to select two categories of respondents (beneficiaries and non-beneficiaries of ABP). In stage one, three states (Benue, Kogi and Niger) were purposively selected based on their active participation in rice production under the ABP in North-Central region of Nigeria. In the second stage, two ABP participating Local Government Areas (LGAs) were selected from the three states. In stage three, 10% of the registered ABP beneficiaries rice farmers in each LGA were randomly selected to give 157 beneficiaries as follows: 27 Gwer East and 23 Gwer West LGA (Benue State), 25 Idah and 28 Kogi LGA (Kogi State) and 24 Katcha and 30 Bida LGA (Niger State). Similarly, another 157 of the ABP non-beneficiaries rice farmers who do not have close relationship with beneficiaries in the study areas were randomly selected to serve as control group. This brought the total number of respondents for the study to 314.

Interview schedule was used to collect primary data used for the study. Data were analysed using percentages, mean, Propensity Score Matching (PSM) and multiple linear regression analysis at  $\alpha_{0.05}$ . percentages and mean were used to describe the socioeconomic characteristics of beneficiaries and non-beneficiaries in the study area. The multiple linear regression analysis was used to identify factors influencing the rice yield of beneficiaries in the study area. This is expressed mathematically as:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \dots + \beta_{16}X_{16} + e \quad (1)$$

Where: Y = Dependent variable (rice yield in kg/ha),  $\beta_0$  = Constant,  $\beta_n$  = regression coefficients, and e = error term;  $X_n$  = independent (explanatory) variables which include:  $X_1$  = Age (in years),  $X_2$  = Marital status (married = 1, otherwise = 0),  $X_3$  = Household size (number of persons),  $X_4$  = Educational attained (formal education = 1, otherwise = 0),  $X_5$  = Rice farm size (ha),  $X_6$  = Years of rice farming experiences (in years),  $X_7$  = Number of agricultural group membership,  $X_8$  = Access to extension services (Yes = 1, no = 0),  $X_9$  = Estimated monthly income (₦),  $X_{10}$  = Labour used (Man day/ha),  $X_{11}$  = Fertiliser/manure used (kg/ha),  $X_{12}$  = Transportation cost (₦),  $X_{13}$  = Quantity of seed used (kg/ha),  $X_{14}$  = Agro-chemical used (Li/ha),  $X_{15}$  = Processing cost (₦) and  $X_{16}$  = Rent for land used (₦).

Propensity Score Matching (PSM) technique was used to match beneficiaries and non-beneficiaries of ABP based on their propensity scores estimated using certain covariates such as age, marital status, sex, among others. After matching, the average treatment effect (ATE) is computed by taking the average of the difference between the observed and potential outcomes for each subject. The difference in yield between the matched beneficiaries and non-beneficiaries was summed over all the differences to obtain the average treatment effect, indicating the effect of Anchor Borrowers' Programme on rice yield of farmers. The Average Treatment Effect is mathematically expressed as follows:

$$ATE = E [Y_i(1) - E[Y_i(0)]] = E [Y_i(1) - E[Y_i(0)]] \quad (2)$$

Where ATE = Average treated effect

P = participation in the programme (p = 1 if participated in the ABP and p = 0 if did not participate in the programme),

$Y_1$  = outcome (rice yield) of the ABP beneficiary after participation in the programme,

$Y_0$  = outcome (rice yield) of the same beneficiary if he/she did not participate in the ABP.

**Decision rule:** A positive value of ATE suggests that the beneficiaries of ABP had higher outcome variable (rice yield) than the non-beneficiaries.

In the study, rice yield was estimated as output per unit area cultivated (kg/ha).

## Results and Discussion

### Socio-Economic Characteristics of the Respondents

The results presented in Table 1 reveal that beneficiaries and non-beneficiaries had mean ages of  $42.1 \pm 9.6$  and  $43.6 \pm 10.3$  years, respectively. These suggest that rice farmers in the area are predominantly in their active age, potentially possessing the vigour and vitality to actively participate in farming and readily adopt new ideas, such as those introduced by the ABP. This is in line with the findings of Olanrewaju (2019), Ayuba *et al.* (2020), Balogun *et al.* (2021), Salisu *et al.* (2022) and Ugbor *et al.* (2022). Furthermore, the predominance of male farmers (73.2% beneficiaries; 62.4% non-beneficiaries) indicates a gender disparity in the ABP, aligning with observations by Abdulmumini (2021) that male farmers are more involved in agricultural production in North-Central Nigeria.

The results further reveal that most (64.3% beneficiaries; 56.1% non-beneficiaries) of the respondents were married. These reflect the commonality of married individuals engaging in farming activities to cater for their household needs (Balogun *et al.*, 2021; Yakubu *et al.*, 2021). The mean household size was  $7 \pm 2.94$  and  $6 \pm 2.90$  for beneficiaries and non-beneficiaries, respectively. The household member could serve as potential source of labour for rice production if properly deployed. Educationally, a significant proportion of respondents had at least a secondary educational qualification (52.8% beneficiaries; 40.1% non-beneficiaries), which could facilitate their ability to understand and implement new agricultural practices introduced by the ABP (Abdu-Raheem *et al.*, 2023).

Membership cooperative group was high among respondents (100% beneficiaries; 80.3% non-beneficiaries), indicating active engagement within the farming community, potentially facilitating knowledge sharing and innovation diffusion. Additionally, respondents had considerable farming experience (mean years of  $14.31 \pm 5.71$  for beneficiaries and  $13.34 \pm 5.37$  for non-beneficiaries). These signify a reasonable level of expertise in rice farming (Onoja *et al.*, 2020). The reported farm sizes ( $3.3 \pm 1.0$ ha for beneficiaries and  $2.9 \pm 1.1$ ha for non-beneficiaries) suggest predominantly small-scale farming operations, aligning with findings from other studies (Balogun *et al.*, 2021; Olanrewaju, 2019).

**Table 1: Respondents' Socioeconomic Characteristics**

Variable	Beneficiaries		Non-Beneficiaries		Pooled Mean	
	(%)	Mean	(%)	Mean	(%)	
<b>Age (Years)</b>						
25-34	24.2		22.9		17.8	
35 - 44	43.3	42.1±9.60	39.5	43.6±10.26	40.5	42.82±9.95
≥ 45	32.5		37.6		41.7	
<b>Sex</b>						
Male	73.2		62.4		67.8	
Female	26.8		37.6		32.2	
<b>Marital status</b>						
Single	24.2		19.7		22.0	
Married	64.3		56.1		60.2	
Divorced	8.3		13.4		10.8	
Widow/widower	1.3		3.2		2.2	
Separated	1.9		7.6		4.8	
<b>Household size (Persons)</b>						
2 - 4	33.8		30.6		28.7	
5 - 7	47.8	7±2.94	43.9	6±2.90	27.7	7.0±2.93
≥ 8	18.5		25.5		43.6	
<b>Education</b>						
No formal education	14.0		23.6		16.9	
Primary education	33.1		36.3		34.7	
Secondary education	40.1		29.3		36.6	
Tertiary education	12.7		10.8		11.8	
<b>Membership of cooperative group</b>						
None	0		19.7		9.9	
1 - 2	68.8		52.9		60.8	
≥ 3	31.2		27.4		29.3	
<b>Rice farming experience (Years)</b>						
5 - 10	29.9		24.2		27.4	
11 - 15	49.7	14.31±5.71	43.9	13.34±5.37	46.5	13.83±5.64
≥ 16	20.4		31.9		26.1	
<b>Farm size (Ha)</b>						
2 - 3.0	55.4		66.9		61.5	
3.1 - 4.0	22.3	3.32±0.97	22.3	2.92±1.07	28.7	3.12±1.04
≥ 4.1	10.8		10.8		9.9	
<b>Extension visit/contact</b>						
None	28.0		24.8		26.8	
Fortnightly	4.4		8.3		6.4	
Monthly	24.2		20.4		22.3	
Twice Yearly	28.7		21.7		44.6	
<b>Estimated monthly income (₦)</b>						
25,700 - 49,127	48.4		54.1		51.3	
49,128 - 72,555	30.6	58,068.15	26.1	56,889.36	28.0	55,188.54
≥72,556	21.0		19.8		20.7	

**Source:** Author's compilation (2022)

Extension services contact was poor among the respondents, with many reporting seasonal or zero contact with extension officers, highlighting a significant challenge

in agricultural extension services delivery. Furthermore, income levels were modest among respondents, averagely ₦58,068.15±25,496.02 and ₦56,628.34±23,427.55 per month for beneficiaries and non-beneficiaries, respectively. This is low, especially when their household size is considered alongside the current economic situation. The low-income level may indicate financial constraints that can hinder investment in cutting-edge technologies to improve farming operations and socioeconomic status.

### Rice Yield of Respondents

Table 2 presents the rice yield of respondents, indicating that beneficiaries of the Anchor Borrowers' Programme (ABP) produced on average 453.95kg/ha, while non-beneficiaries rice fields yielded 367.36kg/ha. These signify a significant improvement in yield among ABP beneficiaries compared to non-beneficiaries. The increase in yield among beneficiaries could be attributed to enhanced access to credit from ABP for purchasing improved inputs. These results further support previous studies by Ayuba *et al.* (2020), Ewuzie & Okwu (2020), Aboje & Akintoye (2021), Akpan & Edet (2021), Soom *et al.* (2023), and Akinbile *et al.* (2023), which observed increased in rice yield among ABP beneficiaries over non-beneficiaries.

**Table 2: Respondents Rice Yield (kg/ha)**

Rice yield (kg/ha)	Beneficiaries (%)	Mean Non-Beneficiaries (%)	Mean
100 - 200	2.6	5.7	
200.1 - 300	13.4	22.9	
300.1 - 400	19.8	33.8	367.36
≥ 400.1	64.3	453.95	37.6
<b>Total</b>	<b>100</b>	<b>100</b>	

**Source:** Author's compilation (2022)

### Effects of Anchor Borrowers' Programme on Rice Yield

Table 3 shows that participation in the ABP significantly increased the yield of beneficiaries in the area (ATE=105.823kg/ha;  $p < 0.01$ ). The coefficient of the average treatment effect on the treated indicates that beneficiaries produced, on average, 105.823kg/ha more than non-beneficiaries as a result of their participation in the ABP. This increase in yield can be attributed to beneficiaries' access to credit and other production incentives, allowing them to utilize more inputs and thus, achieve higher yield. These findings suggest that the ABP is effectively achieving its goal of improving rice yield in North-Central Nigeria by providing farmers with the means to increase production. This outcome aligns with previous studies by Balogun *et al.* (2021), Okoroh *et al.* (2021), Emeh & Ani (2021), Akinbile *et al.* (2023), and Baraya *et al.* (2023), whom found significant differences in yields between ABP beneficiaries and non-beneficiaries, with beneficiaries consistently outperforming non-beneficiaries. This finding is also consistent with the study of Okeke *et al.* (2019) in Benue State, they reported higher farm output among ABP beneficiaries than non-beneficiaries.

**Table 3: Effects of Anchor Borrowers' Programme on Rice Farmers' Yield**

Rice Yield (kg/ha)	Mean	ATE	Standard Error	z-value	P> z
Beneficiaries	453.95	105.823	14.561	7.270**	0.000
Non-beneficiaries	367.36				
Mean Difference	86.59				
N0 of observations	314				

**Source:** Author's compilation (2022)

### Determinants of Rice Yield among ABP Beneficiaries in the Area

Table 4 presents regression estimates of factors influencing rice yield among ABP beneficiaries. The statistically significant F-value of 14.43 ( $p < 0.01$ ) indicates a significant relationship between independent variables and rice yield. The model's adjusted R-squared of 0.6531 suggests that 65.31% of the variation in yield is explained by the explanatory variables (age, household size, education, farming experience and others), with the remaining 34.69% attributed to external factors or embedded in the error terms.

Among the 18 explanatory variables, six were statistically significant predictors of rice yield: household size (5.257), education (72.841), farming experience (3.113), and group membership (89.110). Notably, farming experience positively impacts performance over time, as observed by Meludu and Onoja (2018). Increased experience enhances farmers' capacity to manage farms effectively, make informed decisions on resource allocation, input combinations, and adherence to agronomic practices.

**Table 4: Determinants of Rice Yield among ABP Beneficiaries**

Variables	Coefficient	Standard error	t-value
Age	-0.460	-0.81124	-0.57
Marital status	11.455	11.04025	1.04
Household size	5.257	2.33272	2.25**
Educational attainment	72.841	21.47894	3.39**
Rice farm size used	-17.724	17.09502	-1.04
Years of rice experience	3.113	1.38424	2.25**
Agric. group membership	89.110	18.96108	4.70**
Access to extension services	7.445	6.14819	1.21
Estimated monthly income	-0.000	0.00002	-0.59
Cost of Labour	0.001	0.00041	2.43**
Fertiliser/Manure used	0.00056	0.00282	0.20
Transportation cost	0.00346	0.00310	1.12
Cost of seed used	0.00174	0.00157	1.12
Agro-chemicals used	0.00112	0.00201	0.56
Cost of processing	-0.00573	0.00155	-3.69**
Rent on land	-0.00222	0.00245	-0.91
Constant	248.3937	118.9782	2.09**
Number of observations	157		
R-Squared ( $R^2$ )	0.6531		
Adjusted R-Squared ( $R^2$ )	0.6078		
F-statistic	14.43**		

**Source:** Author's compilation (2022)

## Conclusion and recommendations

The study concludes that the Anchor Borrowers' Programme (ABP) positively influenced rice yield in North-Central Nigeria, with beneficiaries achieving higher yield than non-beneficiaries. However, the study observed poor participation of women in the ABP as more male than female rice farmers were involved in the programme. Household size, education, farming experience, group membership, and labour were the major predictors of rice yield among beneficiaries. The study recommends the sustainability of Anchor Borrowers' Programme to ensure widespread positive impacts on rice production in the North-Central region and substantial inclusion of women in ABP and related government interventions.

## References

- Abdulmumini, A. B. (2021). Assessment of Anchor Borrowers' Financial Scheme on rice farmers' Productivity in Lavun Local Government Area of Niger State. *Fudma Journal of Management Sciences*,1(1): 111-123.
- Abdu-Raheem, K. A., Adekunmi, A. O. and Oluwatusin, F. M. (2023). Factors Influencing the Accessibility of Anchor Borrower's Programme Fund among Rice Farmers in Ebonyi State, Nigeria. *Asian Journal of Advances in Agric. Research*,22(2): 41-49.
- Aboje, A. O. and Akintoye, I. R. (2021). Determinants of smallholder farmers' participation in the Central Bank of Nigeria's Anchor Borrowers' Programme in Kwara State. *Journal of Business and Economic Development*, 6(1): 11-19.
- Agboola, T. O., Akintunde, O. K., Balogun, O. L., Jimoh, L. O. and Apata, M. O. (2021). Effects of Anchor Borrowers' Programme on Rice Production in Irepodun/Ifelodun Local Government Area, Ekiti State. *Journal of Life & Physical Science*, 13(1): 13-25
- Akinbile, L. A., Akingbade, M. and Salaudeen, A. O. (2023). Contributions of Anchor Borrowers' Programme to Rice Farmers' Productivity in Ekiti State. *Journal of Agricultural Extension*, 27(1): 49-60.
- Akpan, S. B. and Edet, J. J. (2021). Assessing the Impact of the Central Bank of Nigeria's Anchor Borrowers' Programme on Agricultural Productivity in Akwa Ibom State. *European Journal of Accounting, Finance, and Investment*, 7(1): 10-21.
- Anyanwu, I. B., Ojo, M. A., Nmadu, J. N. and Adebayo, C. O. (2023). Resource Productivity of Rice Farmers Under the Agricultural Transformation Agenda (ATA) Programme in Niger State, Nigeria. *Journal of Agriculture and Agricultural Technology (JAAT)*, 12(1): 35-53.
- Ayuba, G., Abba, M. and Abubakar, M. M. (2020). Effect of Anchor Borrowers' Programme (ABP) on Technical Efficiency of Beneficiary Rice Farmers in Kebbi State, Nigeria. *International Journal of Agricultural Economics*, 5(4): 106-113.
- Balogun, O. L., Ayo-Bello, T. A., Abasilim, C. F., Abimbola, O. G., Afodu, O. J. and Akinwale, O. (2021). Assessment of the Performance of Anchor Borrowers' Programme (ABP) Beneficiary and Non-Beneficiary Rice Farmers in Badagry Local Government Area, Lagos state, Nigeria. *Ife Journal of Agriculture*, 33(2): 62-76.
- Baraya, A. A. S., Handoyo, R. D., Ibrahim, K. H., Badayi, M. S. and Muhammad, F. R. (2023). Assessment of the Central Bank of Nigeria Anchor Borrowers' Programme on Rice Production in Kebbi State, Nigeria. *Journal of Law & Sustainable Development*, 11(12): 1-21.
- Ejiogu, A. O. (2021). Comparative Analysis of Prescribed and Actual Interest Rates of the Anchor Borrowers' Programme in Imo State, Nigeria. *Journal of Financial Services Marketing*,26: 122-128.
- Emeh, I. and Ani, W. (2021). Assessment of the Central Bank of Nigeria's Anchor Borrowers' Programme on Farmers' Productivity in Nigeria. *European Journal of Business and Innovation Research*, 9(1): 58-70.
- Ewuzie, U. E. and Okwu, O. J. (2020). Effects of the Anchor Borrowers' Programme on Agricultural Output and Food Security in Nigeria. *Journal of Agricultural Science and Food Technology*, 6(3):101-111.



- Meludu, N. T. and Onoja, M. N. (2018). Determinants of Edible Insects Consumption Level in Kogi State, Nigeria. *Journal of Agricultural Extension*,22(1): 156-170.
- National Bureau of Statistics (NBS) (2020). Demographic Statistics Bulletin. Publication of Central Bank of Nigeria (CBN). Pp. 1-26.
- Obianefo C., A., Nwigwe C. A., Meludu, T. N., and Anyasie I. C. (2020). Technical efficiency of rice farmers in Anambra State value chain development programme. *Journal of Development and Agricultural Economics*, 12(2):67- 74.
- Obianefo, C. A., Okoroji, N. O., Obiekwe, N. J., Osuafor, O. O., and Shah, Z. A. (2022). Economics of Good Agronomic Practices Adoption by Rice Farmers in Value Chain Development Programme, Anambra State, Nigeria. *African Journal of Food, Agriculture, Nutrition and Development*, 22(8): 21308-21330.
- Ogunkunle, T., Olaniyi, O. A., Puseletso, L. (2023). Determinants of youth farmers' utilization of improved rice production practices in south west, Nigeria. *Journal of Agricultural Extension* 27 (1): 61-74
- Ojo, B. J., Olalere, I., Bello, M. A. and Bello, J. (2023). Effect of the Anchor Borrowers' Programme on the Food Security of Smallholder Maize Farming Households in Kwara State, Nigeria. *Journal of Agribusiness & Rural Development*,68(2): 197-203.
- Okeke, A. M., Mbanasor, J. A. and 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 & Earth Science*, 5(3): 31-47.
- Okoroh, J. P., Eze, S. O., Apu, U. and Ekwe, K. C. (2021). Effect of Anchor Borrowers' programme on Rice Production in Southeast, Nigeria. *Journal of Community & Communication Research*,6(2): 140-148.
- Olanrewaju, O. (2019). Assessment of Awareness and Determinants of Anchor Borrowers' Programme's Adoption among Rice farmers in Kaduna State, Nigeria. *International Journal of Creative and Innovative Research in all Studies (JCIRAS)*, 2(1):58-68.
- Oluwadamilola, K. A. (2018). Challenges of Rice Production in Nigeria: A case study of Kogi State. Department of Science and Technology. National Defense College Abuja, Nigeria. *Food Science and Quality Management*,74: 1-16.
- Onoja, I.B., Bebenimibo, P. and Onoja, N.M. (2022). Critical Discourse Analysis of Online Audiences' Comments: Insights from Channels TV's Facebook Audiences' Comments on Farmers-Herders Conflicts News Stories in Nigeria. *Sage Open*, 12(3): 1-13.
- Onoja, N.M., Meludu N.T., and Omale, S.A. (2020). Consumers' Attitude towards Indigenous Rice in Lokoja Metropolis, Kogi State, Nigeria. *Journal of Home Economics Research (JHER)*, 27(2): 177-188.
- Salisu, J., Adebayo, C. O., Jirgi, A. J. and Ojo, A. O. (2022). Effects of Anchor Borrowers' Programme (ABP) Credit on the Productivity of Beneficiary Rice Farmers in Kebbi State, Nigeria. *FUDMA Journal of Agric. & Agricultural Technology*,8(1): 329-338.
- Soom, A., Sani, M. H. and Danwanka, H. A. (2023). Effects of Anchor Borrowers' Programme on Rice Farming in Benue State, Nigeria. *Asian Journal of Agricultural Extension, Economics and Sociology*, 41(5): 143-151.
- Ugbor, I. K., Ahmed, A. Y., Maccido, A. and Abdul'zeez, S. B. (2022). Assessment of Anchor Borrowers' Programme on Rice Value Chain and Employment Generation in Kebbi State, Nigeria. *Kebbi Journal of Economics & Social Science*, 4(2): 146-157.
- Yakubu, S. M., Musa, M. W., Bamidele, T. E., Ali, M. B., Bappah, M. T., Munir, R. T. and Manuwa, A. (2021). Effects of Farmer-Herder Conflicts on Rural Households Food Security in Gombe State, Nigeria. *Journal of Agricultural Extension*, 25(1): 11-20.