

Effect of Input Subsidies on Rice Farmers Under Value Chain Development Programme in Benue and Niger States, Nigeria

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Abstract—The study assessed the effect of input subsidies on rice farmers under value chain development programme in Benue and Niger States, Nigeria. A multi-stage sampling technique was used to select 146 and 185 registered youth rice farmers using Yamane formular for appropriate sample size determination and data collected through a semi-structured questionnaire were analyzed using descriptive statistics (such as frequency count, percentages, mean) and Ordered Logit regression model. The results obtained shows that rice farmers in the study area were mostly males (85.4%) and (57.5%) and formally educated (70.8% and 85.6%) with an average age of 42years among rice farmers in Benue and Niger states respectively. The results also shows that increase in machine hiring services (94.1%), access to rice production modern technologies (86.5%) and access to training on rice farming (85.9%) are the major input subsidies benefited among the rice farmers in Niger state. While access to post-harvest handling and marketing (99.4%), access to information on agronomic practices (100.0%) and access to support for value chain and market linkages (98.6%) were the major input subsidies benefited among the rice farmers in Benue state. The result further shows that access to subsidize rice seed ($X=4.76$), access to subsidize fertilizer for rice production ($X=4.71$) and access to subsidize herbicides/insecticides ($X=4.70$). While access to information on agronomic practices ($X=4.27$), access to subsidize seed for planting ($X=4.21$) and access to support for value chain and market linkages ($X=4.21$) were the major top three inputs subsidies with high extent of access among the rice farmers in Benue and Niger states respectively. Hence, it was recommended that Value Chain Development Programmed should continue and expand the provision of subsidized rice seeds and fertilizers, as they are crucial for both states and strengthen extension services to provide continuous support and innovation dissemination in rice farming techniques.

Keywords— Value-chain, Inputs, Subsidies, Rice-farmers and Development.

I. INTRODUCTION

Agricultural production alongside non-farm or off-farm activities constitutes a major source of income for most rural households. Generally, human depend directly or indirectly on agriculture for food and livelihood. In Nigeria, agriculture plays a key role and even has a potent potential to be a dominant force in achieving a sustainable food security and nation economy in the future. It is a key contributor to poverty alleviation, as a larger percentage of the population derives their income from agriculture and related activities most especially the rural farm families, since more than 70% of the 182 million populations are employed in agriculture which are

mostly small farm holders (FAO, 2018). Nigeria is faced with a looming food security crisis with a growing population, as the country increasingly depends on imported foods (Federal Ministry of Agriculture and Rural Development (FMARD), 2020). Presently, majority of small holder farmers are still confronted by increasingly nutrient depleted soils, low agricultural productivity and declining land availability, coupled with increasing populations putting pressure on natural resources and threatening the environment (IFDC, 2021). Therefore, agriculture provides food for the teeming population, employers of labour, provides raw materials for industries, help in reducing poverty in the rural areas (Nwanku and Akonu, 2019).

Rice occupies a crucial space in household food expenditure. Importantly, it is a staple food with rich cultural identity. In Thailand, rice is often referred to as the very foundation of existence. In China, 'life' is often seen as the foundation of Asian civilization. In addition, rice has a rich nutritive value that provides more than 15 essential vitamins and minerals including folic acid, B vitamins, potassium, magnesium, selenium, fiber, iron and zinc (Onwuka, 2021). Considering the nutritional value of rice in the body, there is hardly any country in the world where it is not utilized in one form or the other. In Nigeria, rice is one of the few food items whose consumption has no cultural, religious, ethnic or geographical boundary (Ibitoye *et al.*, 2017). Consequently, its demand and consumption have continued to witness momentous changes with increasing population across all socio-economic classes (Onwuka, 2021).

Onwuka (2021) noted that rice production in Nigeria has not been able to meet the demands of the growing population. The annual growth rate of food sub-sector is 2.0 percent while the annual population growth rate is 3.3 percent (National Bureau of Statistics (NBS), 2018). This means, a wide gap exists between food supply and the demand. For example, Nigeria requires more milled rice annually than its domestic production of 3.3 million metric tons, with an excess of 2.2 million metric tons per year (Federal Ministry of Agriculture and Rural Development (FMARD), 2020). However, United State Department of Agriculture (USDA), reported that Nigeria was the second highest importer of rice after China in 2019. According to Fosu (2017), Nigeria's enormous agricultural potentials is yet to be fully exploited. FAO (2018) opined that utilization of production knowledge and use of technology makes the real value of productivity that boost

Nigerias’ economy. Thus, if well managed, the sector has potential to contribute substantially to GDP, employment and revenue generations. It is in this regard, that the Nigerian government positions agricultural sector as one of the driving forces for the anticipated economic growth that is required to reduce poverty (World Bank, 2012).

The concept of IFAD-Value Chain Development Programme in relation to youth-led enterprises due to the closure of Nigeria’s borders to importation of rice, food security and self-sufficient in rice production has increased. The programme was introduced as special aspects relating to mainstreaming priority of VCDP’s approach in gender inclusion focusing on women and youths. The programme is geared to make commercial opportunities available to youths in existing or new youth-led, off-farm enterprise through cost sharing with competitively selected private sector small and medium enterprises off-farm microenterprises activities. These include value addition in agriculture, crop markets, tillage services and input and output network strengthening, it provides technical assistance to low-cost technology and mechanized farming service providers, technology suppliers, aggregators and financial institutions (FLS) to train, serve and link more youth as clients and agents. The concept has evolved over the years and different value chain related frameworks have been developed for youth and women geared towards small holder productivity enhancement, VCDP has largely focused on supporting youth entrepreneurs for the provision of improved rice seeds and improved technology. Value chain actors are those who are actually directly involved in value chain activities. Typically, in this research for example they are farmers, what they have in common is that they become owners of the raw product (inputs subsidies) at one stage in the value chain. The core, or primary actors in agricultural value chain typically includes input suppliers, primary producers also referred to as farmers. In the field of agriculture, stakeholders engage in transactions involving specific products as they progress along the value chain, encompassing various inputs. The value chain of a product details all the necessary steps involved in taking a product or service from its initial conception through various stages of production, processing, and delivery until it reaches the ultimate end users as explained by Yusuf (2018).

II. METHODOLOGY

This study was conducted in Benue and Niger States, Nigeria. Niger State was created out of the former Northwestern State and became a fully autonomous State on 3rd February 1976, with headquarter at Minna. Niger State is in the North-central part of Nigeria and lies in between longitude 3⁰ 30¹ and 7⁰ 20¹ East of the Greenwich Meridian and latitude 8⁰ 20¹ and 11⁰ 30¹ North of the equator. The State presently comprises of 25 Local Government Areas (LGAs) and it is made up of three major ethnic groups which are the Nupe, Gbagyi and Hausa. However, the total inhabitants in the State are over 3,954,772 people during the 2006 population census. But, going by the annual population growth rate of 2.5% in Nigeria, the population of Niger State was projected to be 5,556,200 in the year 2016 (National Bureau of

Statistics, 2018). However, Benue State falls within Longitude 7⁰47'E to 10⁰0'E and Latitude 6⁰25'N, 8⁰8'N. It is bordered in the North by Nasarawa state and in the East by Taraba and Cross- River States. The State covers an estimated land area of 34,059 km² and the total inhabitants in the State was 4,219,244 people during the 2006 population census. However, going by the annual population growth rate of 3.4% in Nigeria, the population of Benue State was projected to be 6,514,513 people in the year 2022 (NBS, 2022).

Multi-stage sampling procedure was employed to select the respondents for the study. The first stage involved purposive selection of Benue and Niger States as the beneficiaries’ states of the Value Chain Development programme (VCDP). The second stage involved random selection of four Local Government Areas (LGAs) that are participating in VCDP intervention programme; the two agricultural Zones in Benue state such as Guma and Gwer west LGAs in Zone A while Kwande and Logo LGAs are in Zone B were purposively selected based on their comparative advantage. While three agricultural Zones of Niger state which are; Bida LGA in Zone I, Shiroro LGA Zone II, Kontagora and Wushishi LGAs in Zone III were selected. The third stage involved random selection of 5 percent (5%) cooperatives from each of the villages under the selected LGAs based on the number of cooperatives registered; given a total of eighty-four (84) cooperatives. The fourth stage involved using Yamane’s formula to select sample size from sampling frame as obtained from Value Chain Development Programme data base. Thus, a total of 331 youth rice farmers formed the sample size for the study.

Data were collected using semi-structured questionnaire and analysis was conducted using descriptive statistics (mean, frequency distribution, and percentage) and inferential statistics (Ordered Logit regression model) was used to examine the determinant of youth rice farmers access to inputs subsidies under VCDP was specified as follows:

Ordered Logit Regression model - involves the relationship between a dependent variable and a collection of independent variables. The value of dependent variable is defined as a combination of independent variables plus error term. $Y=f(X_1, X_2, X_3, \dots, X_n, e_i)$

The implicit form of the ordered logit regression model is given as:

$$Y = f(X_1+X_2+X_3+X_4+X_5+X_6+X_7+X_8+X_9+ X_{10}+ X_{13}+e) \quad (1)$$

The explicit form is specified as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9 + e \quad (2)$$

Y = Level of access to inputs subsidies (high=3, moderate=2, low=1).

- X₁ = Age (Age of farmers)
- X₂ = Household size (numbers of people in the household)
- X₃ = Educational status of farmers (Years of schooling)
- X₄ = Farming experience (Number of years involved in farming)
- X₅ = Marital status (married =1, otherwise = 0)
- X₇ = Farm size (Hectares)
- X₈ = Extension contact (number of visit)
- X₉ = Access to credit (amount of credit received)

X_{10} = Major occupation (farming= 1, otherwise = 0)
 X_{11} = Income (in Naira)
 X_{12} = distance to redemption centre (km)
 X_{13} = Cooperative membership (yes=1, no=0)
 β_0 = Intercept
 $\beta_1 - \beta_{13}$ Regression coefficients
 e_i = error term.

III. RESULTS AND DISCUSSION

Socio-economic Characteristics of the Farmers

Age of the respondents: Entries in Table 1 revealed that majority (70.6%) of the respondents Benue state and (87.5%) of the respondents in Niger state were between the age bracket of 31-50 years with average age of 42 years respectively. This implies that, farmers in the study area were still within their active and productive age, i.e strong, energetic and full of innovative ideas that could be advantageous in efficient use of inputs subsidies given for rice production. At this age, farmers should be able to withstand the pressure and rigours involved in rice production from pre-planting operation till harvesting and post-harvesting operation respectively. This finding agreed with Okunola *et al.* (2018) who stated that majority of the farmers were within the youthful age group regarded as economically active age, innovative and productive age to carry out farming activities efficiently.

Sex of the respondents: Results in Table 1 showed that majority (57.5%) and (85.4%) of the respondents in Benue and Niger States were male respectively. This finding revealed that there are more male respondents than female respondents in the study area. This also might be due to the tedious, labourious and strenuous activities involved in rice production that could only be handled by men and restrict women to only domestic chores or as farm labourer in the study area. This is similar to the findings of Osanyinlusi and Adenegan, (2017) who found that men were dominant in rice production compared to female farmers.

TABLE 1: Distribution of respondents according to socio-economic characteristics

Variables	Niger State (n=185)	Benue State (n=146)
	Freq (%)	Freq (%)
Age (years)		
30 years and below	7 (3.8)	18 (12.3)
31-40	80 (43.2)	55 (37.7)
41-50	82 (44.3)	48 (32.9)
>50	16 (8.6)	25 (17.1)
Mean	42 years	42 years
Sex		
Male	158 (85.4)	84 (57.5)
Female	27 (14.6)	62 (42.5)
Marital status		
Married	159 (85.9)	129 (88.4)
Single	18 (9.7)	8 (5.5)
Divorce	2 (1.1)	1 (0.7)
Widow(er)	6 (3.2)	8 (5.5)
Formal education		
Yes	131 (70.8)	125 (85.6)
No	54 (29.2)	21 (14.4)
Level of education		
Non-formal education	54 (29.2)	21 (14.4)
Primary education	7 (3.8)	4 (2.7)
Secondary education	36 (19.5)	38 (26.0)
Tertiary education	88 (47.6)	83 (56.8)

Mean of years in schooling	11 years	12 years
Source: Field Survey, 2024.		

Marital status of the respondents: Table 4.1 showed that the majority (88.4%) of the respondents in Benue state and (85.9%) of the respondents in Niger state were married. This implies that farmers in the study area had the motivation to cater for their family needs such as provision of nutrition while also using family members as source of cheap labour for rice production activities. The result is in line with Okpe *et al.* (2019) who pointed out that, married persons were more involved in crop production due to higher food demand in the household.

Educational level of the respondents: The results in Table 1 showed that majority of the respondents (85.6%) in Benue state and (70.8%) of the respondents in Niger state had one form of formal education or other involving attending primary, secondary and tertiary institutions with an average school year of 11years and 12years in Niger and Benue states respectively. Indicating a high literacy level, with high percentage of the rice farmers at tertiary level of formal education. Given that there is high level of literacy, it is expected that extension agents may disseminate information on good agronomic practices with ease among farmers in the study area. This result is in line with that of Bello *et al.* (2016) who reported that farmers in rural Northern Nigeria had formal education with average of 6 years in school thus, influencing the adoption of rice production technology among the farmers.

Rice Production Inputs Subsidies Benefited by Rice Farmers

The results of the study on rice production input subsidies and benefits derived by youth rice farmers in Benue and Niger states provide insight of the effect of inputs subsidies on youth rice farmers. The findings highlight different focal points in each state, reflecting strategies that addressed specific local needs and conditions. The result in Table 2 shows that increase in machine hiring service (94.1%), access to rice production technologies (86.5%) and access to training on rice farming (85.9%) were the major input subsidies benefited among the respondents in Niger state.

The high percentage in machine hiring services indicate that youth rice farmers in Niger state to benefited from access to mechanized services. This likely reduces the labour intensity and time required for rice farming, leading to increased productivity. Mechanization can also improve the efficiency and precision of agricultural practices, thereby enhancing crop yields. Access to rice production technologies (86.5%) which is the second most benefited inputs subsidies shows that technologies include improved seed varieties, irrigation systems, and farming tools. The substantial access to these technologies suggests that youth rice farmers had adopted innovative practices that can lead to better crop management and higher productivity. Access to training on rice farming (85.9%), training programme is essential for equipping farmers with the knowledge and skills needed to utilize new technologies effectively. The high percentage of farmers that received training indicates importance attached to capacity building, which enable farmers maximize the benefits of inputs subsidies provided. This is in line with the findings

of Kayode and Adekoya (2018) who reported that majority (81.7%) of the respondents indicated that they benefited access to training service on good agronomic practices.

While access to post-harvest handling and marketing facilities (99.4%), access to information on good agronomic practices (100.0%) and access to support for value chain and market linkages (98.6%) were the major input subsidies benefited among the respondents in Benue state. Access to post-harvest handling and marketing facilities (99.4%) shows that nearly all farmers have benefited from improved post-harvest handling and marketing. This focus is crucial because post-harvest losses are significant issue in many agricultural settings. Improved handling and better marketing strategies ensure that the quality of rice is maintained, reduced losses and enhanced profitability for the farmers. Furthermore, access to information on good agronomic practices (100.0%) shows full access to information on best agronomic practices which ensures that youth rice farmers can adopt the most effective techniques for rice cultivation. These include knowledge on soil management, pest control, and efficient use of fertilizers lead to better crop management and yields. More so, access to support from value chain development programme and market linkages (98.6%) result revealed almost all the respondents had received support to connect with value chains and markets. This support is critical in ensuring that youth rice farmers sell their produce at fair prices and have consistent market access. Building strong market linkages can help in stabilizing income and reducing the uncertainties associated with agricultural markets. This assertion agrees with Okpe *et al.* (2019) who found that access to post-harvest handling technologies and access to markets were the inputs subsidies benefited by the crop farmers in Southern Nigeria.

TABLE 2: Distribution of respondents according to rice production input subsidy

Variables	Niger state	Benue state
	(n=185) Freq (%)	(n=146) Freq (%)
Increase in fertilizer usage	145 (78.4)	140 (95.9)
Increase in rice seed usage	144 (77.8)	143 (97.9)
Increase in the use of herbicides	150 (81.1)	142 (97.3)
Increase in machine hiring services	174 (94.1)	74 (50.7)
Access to extension service	157 (84.9)	144 (98.6)
Access to training on rice farming	159 (85.9)	136 (93.2)
Access to rice production modern technologies	160 (86.5)	142 (97.3)
Access to post-harvest handling and processing	153 (82.7)	123 (84.2)
Access to post-harvest handling and marketing	151 (81.6)	145 (99.3)
Reducing price risk for producers	150 (81.1)	127 (87.0)
Access to credit/increase volume of funds	154 (83.2)	70 (47.9)
Access to agricultural facilities	151 (81.6)	129 (88.4)
Access to market infrastructural facilities	151 (81.6)	131 (89.7)
Access to information on rice agronomic practices	151 (81.6)	146 (100.0)
Access to support for value chain and market linkages	154 (83.2)	144 (98.6)
Access to support for small-holder productivity	152 (82.2)	134 (91.8)

Source: Field survey, 2024.

Extent of Youth Rice Farmers Access to Inputs Subsidies

Results in Table 3; show that youth rice farmers extent of access to inputs subsidies provided by the value chain

agricultural development programme in Niger and Benue states respectively. To this end, access to subsidized rice seed ($\bar{X}=4.76$), access to subsidized fertilizer ($\bar{X}=4.71$), access to subsidized herbicides/insecticides ($\bar{X}=4.70$), access to extension service ($\bar{X}=4.68$) and access to training on rice farming ($\bar{X}=4.63$) were the major inputs subsidies with high extent of access among the rice farmers in Niger state. With regards to access to subsidized rice seed show the highest mean value indicates that access to subsidized rice seeds is the most significant subsidy for rice farmers in Niger state. High quality seeds are fundamental for achieving high yields. Subsidized seeds ensure that farmers can afford improved varieties that are more resistant to diseases, pests, and adverse environmental conditions, leading to better crop performance and productivity.

However, access to subsidized fertilizer for rice production shows that fertilizers are critical for providing essential nutrients that rice plants need to grow. The near-highest rating for subsidized fertilizer access highlights its importance in boosting crop yields. Fertilizers enhance soil fertility and plant growth, resulting in healthier plants and higher productivity. By subsidizing fertilizers, the VCDP ensures that farmers can afford adequate amounts to optimize their crop production.

More so, access to subsidize herbicides/insecticides show the effective pest and weed management is vital for protecting crops and ensuring high yields. Subsidized herbicides and insecticides help farmers manage these threats more effectively and affordably. This access reduces crop losses due to pests and weeds, enhancing overall productivity and profitability for farmers. The high mean value signifies that subsidy is crucial in maintaining healthy crops. The pooled results also show high extent of access to subsidized seed, fertilizer and herbicides/insecticides among the rice farmers. This substantiates the findings of Nyangena and Juma (2019) who showed that there is high extent of access to subsidize inputs such as seed, fertilizer, agrochemicals and farm tools provided by the Ministry of Agriculture and Rural Development (MARD) for crop production among the farming households in the study area.

Furthermore, the results in Table 3 shows that access to information on agronomic practices ($\bar{X}=4.27$), access to subsidized seed for planting ($\bar{X}=4.21$), access to support of value chain and market linkages ($\bar{X}=4.21$), access to extension service ($\bar{X}=4.16$) and access to subsidized fertilizer ($\bar{X}=4.15$) were the major inputs subsidies with high extent of access among the rice farmers in Benue state. With respect to access to information on agronomic practices show the highest mean value suggests that access to information on agronomic practices is the most significant subsidy for rice farmers in Benue state. Agronomic practices include farming techniques such as crop rotation, proper spacing, soil fertility management, and pest control. Access to accurate and timely information enable farmers to implement best practices, thereby improving crop health and yield. This high level of access underscores the importance of knowledge dissemination in enhancing agricultural productivity.

However, access to subsidized seed for planting which show that high quality seeds are essential for achieving good

crop yields. The high mean value indicates that subsidized seeds are a critical resource for farmers. By providing access to improved seed varieties, subsidies ensure that farmers can plant crops that are more resilient to diseases, pests, and environmental stresses. This leads to higher viability rates and better crop performance, directly impacting overall productivity of the respondents in Benue state. More so, access to support from VCDP and market linkages indicates that support from VCDP and market linkages are vital for ensuring that farmers can sell their produce and receive better market share. The high mean value signifies that this type of support is crucial for the farmers in Benue state. Effective market linkages and value chain support help farmers to connect with buyers, reduce post-harvest losses, and achieve better market prices. This corroborates with the findings of Muhammad *et al.* (2022) who showed that there is high extent of access to inputs subsidies such as seed, fertilizer, agrochemicals and farm tools provided by the Ministry of Agriculture and Rural Development (MARD) among crop farmers in the study area.

shows the R² value of (0.6334 and 0.7921) for Niger and Benue states respectively. Implying that about (63% and 79%) of variations that occur in the determinant of youth rice farmers access to inputs subsidies were explained by the independent variables included in the models. while the remaining (37% and 21%) respectively might be due to the non-inclusion of some important variables or error terms. The Prob>chi² is significant at 1% level of probability. This implies the model is fit for the objectives. The coefficient of age for farmers in Niger and Benue states were negative and significant at 10% and 1% level of probability respectively. Indicating that an increase in the age of the farmers result to likelihood decrease in the access of the respondents to inputs subsidies. This implies that younger rice farmers have more access to inputs subsidies than old/adult rice farmers as they are still in their economic active productive stage. This disagrees with the findings of Nyangena and Juma, (2019) who reported that the higher the age of the farmers the higher the level of access to production inputs for crop farming in the study area.

TABLE 3: The extent of youth rice farmers access to input subsidy

Variables	Niger State (n=185) Mean (x̄)	Rank	Benue state (n=146) Mean (x̄)	Rank
Access to subsidized rice seed for planting operation	4.76	1 st	4.21	2 nd
Access to subsidized fertilizer for rice production	4.71	2 nd	4.15	5 th
Access to subsidized herbicides/insecticides	4.70	3 rd	4.03	7 th
Access to extension service	4.68	4 th	4.16	4 th
Access to training on rice farming	4.63	5 th	3.99	9 th
Reduced price risk among youth rice farmers	4.61	6 th	3.79	12 th
Access to information on good agronomic practices (GAP)	4.55	7 th	4.27	1 st
Access to support for small-holder productivity	4.55	7 th	3.90	10 th
Access to improved rice production technologies	4.47	9 th	4.02	8 th
Access to support from VCDP and market linkages	4.41	10 th	4.21	2 nd
Access to post-harvest handling and markets	4.41	10 th	4.04	6 th
Access to post-harvest handling and processing	4.41	10 th	3.83	11 th
Access to agricultural facility	4.32	13 th	3.68	13 th
Access to market infrastructure	4.29	14 th	3.68	13 th
Access to credit/increased volume of funds	4.12	15 th	2.72	17 th
Access to farmland at an affordable rate	3.72	16 th	3.02	15 th
Access to subsidized farm machinery hiring services	3.65	17 th	2.82	16 th

Source: Field survey, 2024 Note: Cut-off mark at mean value of ≥3.00

Determinant of Youth Rice Farmers Access to Inputs Subsidies

Ordered logit regression model was used to examine the determinant of youth rice farmers access to inputs subsidies under VCDP in the study area. Thus, the result from Table 4,

TABLE 4: Determinant of youth rice farmers access to inputs subsidies

Explanatory Variables	Niger state		Benue state	
	Coefficient	Z-value	Coefficient	Z-value
Age	-0.0577	1.70*	-0.4735	2.98***
Household size	0.0589	1.45	0.0648	0.99
Years of education	1.1529	2.22**	0.3495	3.49***
Farming experience	0.0527	2.37**	-0.1100	-1.49
Marital status	0.2299	0.70	0.1526	0.59
Farm size	0.9048	3.38***	0.3459	3.29***
Extension contacts	-0.6639	-0.92	0.5243	3.07***
Access to credit	-3.30e-10	-0.16	1.08e-4	1.98*
Major occupation	2.7747	7.29***	0.7110	1.09
Income of the farmers	1.83e-07	2.44**	2.99e-09	0.10
Cooperative membership	0.4848	0.68	0.4099	1.96*
Distance to redemption center	-0.1733	2.47***	-0.0544	4.20***
Constant	0.6698	1.49	0.7129	0.86
Number of observations	185		146	
LR chi² (12)	134.70		69.40	
Prob>chi²	0.0000***		0.0000***	
Pseudo R²	0.6334		0.7921	

Source: Field survey, 2024.

Note: *, **, *** implies significant at 10%, 5% and 1% level of probability.

The finding also reveals that the coefficient of educational level of youth rice farmers in Niger and Benue states were positive and significant at 5% and 1% level of probability respectively. This implies that as the respondent's educational attainment increases the level of access to inputs subsidies also increases. This might be as education is a function of exposure of the respondents, which enable the respondents to easily have access to various production inputs at subsidized rate for increase in rice production. This agrees with Teresa *et al.* (2020) which showed that level of education influences farmers access to agricultural production inputs.

The coefficient for farming experience was positive and statistically significant at 5% probability level for youth rice farmers in Niger State. This implies that an increase in experience of the farmers may increase the likelihood of their

access to inputs subsidies in the study area. This is because many years in farming experience could imply more productivity of the farmers in handling production inputs and can also be considered for reasonable quantity of production inputs at subsidized rate. This finding is in consonance with that of Bose *et al.* (2020) who indicated that most highly experienced farmers in Kaduna State, Nigeria have more access to production inputs such as land, seed, fertilizer and agrochemicals.

Furthermore, the coefficient of farm size was positive and significant at 1% level of probability among the youth rice farmers in Niger and Benue states respectively. This implies that the higher the farm size of the farmers the higher their level of access to inputs subsidies for rice production. As large farm size, enable the farmers to practice large-scale production system in the study area. This substantiates the findings of Francis and Chinyere (2019) who showed that increase in farm size of the respondents lead to an increase in the expansion of farming activities.

The coefficient of extension agent and access to credit was positive and significant at 1% and 10% level of probability among the youth rice farmers in Benue state. This implies that farmers in Benue state have high access to extension service, which tend to increase their access to inputs subsidies. More so, the higher the access to credit of the farmers the higher their likelihood of access to inputs subsidies in the study area. This finding disagrees with that of Ayoola *et al.* (2017) who reported that access to extension service increase the farmers level of awareness on various production inputs to be utilized in the farming practices.

However, the coefficient of cooperative organization is positive and significant at 10% level of probability among the farmers in Benue state. Implying that an increase in the number of rice farmers joining cooperative organization lead to likelihood increase in the accessibility of the farmers to inputs subsidies in the study area. This can be attributed to benefit accrued from been a member of cooperative society which tend to provide its members with information and innovations disseminated by the extension agent and easy access to production inputs through cooperative society. The coefficient of distance to redemption center is negatively significant at 1% level of probability among the farmers in Niger and Benue states respectively. This shows that the longer the distance of the rice farmers to redemption center the limited their access to production inputs in the study area as closer farmers may have quick access to these inputs than farmers leaving in far settlement due to transportation challenges. This agrees with Nnadozie *et al.* (2015), who showed that far distance of farmers limits access of the farmers to production inputs and marketing of their harvested products.

IV. CONCLUSION AND RECOMMENDATIONS

The results of the study on rice production input subsidies and their benefits for rice farmers in Benue and Niger states provide data on the areas where these subsidies have had the most significant impact. The findings highlight different focal points in each state, reflecting tailored strategies that address

specific local needs and conditions. The result concludes that increase in machine hiring service, access to rice production technologies and access to training on rice farming were the major input subsidies benefited among the youth rice farmers in Niger State. While access to post-harvest handling and markets, access to information on good agronomic practices and access to support for VCDP and market linkages were the major input subsidies benefited among the youth rice farmers in Benue State. The determinant of youth rice farmers access to inputs subsidies under VCDP in the study area shows that age, years of education, farming experience, farm size, major occupation, income of the farmers and distance to redemption centre were the significant factors influencing youth rice farmers access to inputs subsidies under VCDP in Niger state. While age, years of education, farm size, extension contact, access to credit, cooperative membership and distance to redemption centre were the significant factors influencing youth rice farmers access to inputs subsidies under VCDP in Benue state. Therefore, it was recommended that Value Chain Development Programme should continue and expand the provision of subsidized rice seeds and fertilizers, as they are crucial for both states and strengthen extension services to provide continuous support and innovation dissemination in rice farming techniques.

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