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EFFECTS OF TENANCY STATUS ON THE PRODUCTIVITY OF RICE FARMERS IN BENDE LOCAL GOVERNMENT AREA OF ABIA STATE, NIGERIA

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Abstract

This study analyzed the effect of tenancy status on productivity of rice farmers in Bende Local Government Area of Abia state, Nigeria. Specifically, it identified the method of land ownership/pattern, analyzed the productivity levels of the rice farmers, examined the effects of tenancy status on the productivity of rice farmers and identified the perceived constraints faced by the rice farmers. Multi-stage sampling techniques were used in selecting 60 respondents used for the study. Data collection was by use structured questionnaire administered to the respondents and data analysis was use of such statistical tools as frequency tables, percentages, means, t-test and multiple regression analysis. The result showed that majority (71.67%) of the rice farmers in the in the study area rented land for their farming activities and that 53.33% of the respondents had a productivity range of 2.1 – 3.0, with a mean productivity of 2.2. The result showed that the productivity of owner occupier farmers were significantly higher than that of their counterparts. The significant variable influencing the productivity of the farmers were age of the farmer, farming experience, labour, capital, tenancy status, farm size, planting materials and fertilizer and agrochemicals. The major constraints faced by the rice farmers were inadequate capital, high cost of inputs, poor extension/advisory series, pest attack, and limited and high cost of land. Therefore, policies that we grant farmers increased access to land and secured tenure should be put in place.

Key words: *productivity, rice, status, tenancy.*

INTRODUCTION

Land assumable constitutes a principal factor in agricultural production all over the world and provides a basis for crop production. According to [4] land is a gift of nature which includes the soil, rivers, forest etc. Land is a fixed factor of production and remains the very basis of human existence and the foundation of our food chain. The importance of land lies in the fact that all man's activities either directly or indirectly depends on it. Hence, its availability, distribution, acquisition, utilization, affordability and sustainability determine man's degree of success in feeding his family, and maintaining his home. The extent to which this role is performed is determined in part by methods of land acquisition and arrangements for the ownership and use of land.

The land tenure system in Nigeria is based on the Land Use Decree (Act) of 1978, which is used to administer and control land use in the country [8]. The Land Use Decree of 1978 reflects the idea that it is in the public interest that the rights of all Nigerians to the land of Nigeria be asserted and preserved by law. The objectives of the Land Use Decree remain largely unfulfilled several years after its enactment, and titles to land appear to be more insecure now than ever.

Tenancy status of a farmer is another important factor affecting farmers' productivity. [6] noted that positive association exist between land ownership and productivity. Insecurity of tenure associated with leasehold or renting of land serves as disincentive to farmers from investing meaningfully on the land since the land goes back to the owner after the cropping season [14]. As noted by [17], insecure property rights over land not only reduce sharply the level of activity on the land but also lead to matching in the tenancy market along socio-

economic lines and hence limit severely access to land for the rural poor.

According to [23], land tenure and property rights affect the application of technologies for agricultural and natural resource management. They noted that secured property rights give sufficient incentives to the farmers to increase their efficiencies in terms of productivity and ensure environmental sustainability. It is natural that without secured property rights farmers do not feel emotional attachment to the land they cultivate, do not invest in land development and will not use inputs efficiently.

However, [10] noted that the regulation of tenancy in the form of security of tenure may the negative effect of reducing the incentive of land owners to lease out land. [5] reported that tenancy laws reduced reduced the extent of tenancy, and the pressure of the tenancy law would have a negative effect on the land-lease market, while at the same time, the positive incentive effect on tenants might only be partially realized, such that the overall impact remains theoretically ambiguous.

Rice is one of the major staple food crop grown in Nigeria. [15, 19, and 21] observed that rice, which was once reserved for ceremonial occasions has grown in importance in recent times as a major component of Nigerian diets such that some families cannot do without rice in a day. With the increased availability of rice, it has become part of the everyday diet of many in Nigeria. According to the [9], the average Nigerian now consumes 21Kg of rice per year, representing 9 percent of total calorie intake and 23 percent of total cereal consumption. [24] reported that an estimated 2.1 million tons of rice are consumed annually. [7] noted that the most important factor contributing to the shift being consumers' preferences away from the traditional staples towards rice is rapid urbanization and associated changes in family occupational structures. They noted that as women enter the work force, the opportunity cost of their time increases and convenience foods such as rice, which can be prepared quickly, rise in importance. Similarly, as men work at greater distances from their homes in the urban settlements, more meals are consumed from the market, where the ease of rice preparation has given a distinct advantage, the trend meaning that rice is no longer a luxury food but has become a major source of caloric intake for even the urban poor.

Nigeria has not been able to meet its rice needs and has relied on rice imports. [24] noted that Nigeria is the world's second largest importer of rice, spending over US $300 million annually on rice imports alone. It stated that the country imported 1.7 million tons of rice in 2001 and 1.5 million tons in 2002 [24]. According to [15], imports of these magnitudes represent a major drain to scarce foreign exchange and a hindrance to broader developmental efforts.

Yet, Nigeria has the potential to greatly increase its own rice production. The Nigerian rice sector has a lot of potentials for increased productivity as the country is blessed with rich and abundant rice growing environments. Access to productive resources especially land is critical for attaining increased agricultural productivity. Land title can stimulate investment by means of the collateral (or credit supply) effect [3, 1, and 2]. By turning land into a mortgage able, transferable commodity, farmers can use it as collateral to access the credit needed for productivity enhancing investments. This study therefore, analyzed the effect of tenancy status on productivity of rice farmers in Bende Local Government Area of Abia state, Nigeria. Specifically, it identified the method of land ownership/pattern, analyzed the productivity levels of the rice farmers, examined the effects of tenancy status on the productivity of rice farmers and identified the perceived constraints faced by the rice farmers.

MATERIALS AND METHODS

The study was conducted in Bende Local Government Area (L.G.A) of Abia state. Bende L.G.A lies on 7^0 30^I of the Greenwich Meridian and latitude $5^0 30^I$ North of the Equator. Bende Local Government is composed of thirteen (13) communities, namely: Alayi, Bende, Ezukwu, Igbere, Item,

Itumbuzo, Nkpa, Ntalakwu, Ozuitem, Ugwueke, Umu-imenyi, Umuhu-Ezechi, and Uzuakoli. The population of Of bende L.G.A. according to the 2006 population census was 192,621 persons [18]. Bende L.G.A has agric-climatic conditions typically of the tropics. Bende is bounded in the north by Cross River State, Afikpo and Ohaozara, and in the South by Arochukwu and Ohafia, while in the East and West by Ikwuano L.G.A. and Umuahia L.G.A respectively. Agriculture is widely the occupation of the people and it a major rice producing area in Abia state.

Multi-stage sampling techniques were used in selecting the respondents used for the study.in the first stage, 4 communities namely, Ozuitem, Bende, Igbere and Uzuoakoli were purposively selected based on performance in rice production in the area. The second stage also involved the purposive selection of rice farmers in each chosen community to form the respective sampling frames from which 15 rice farmers were randomly selected in the final stage, to give a sample size of 60 respondents.

Data collection was by use structured questionnaire administered to the respondents and interview schedules and relates to the 2014 cropping season. Data collected were on the **s**ocioeconomic characteristics of the rice farmers, their tenancy status, rice production input and output and their prices.

Data analysis was use of such statistical tools as frequency tables, percentages, means, t-test and multiple regression analysis following the ordinary least squares estimation technique. The productivity of the farmers is derived as:

$$TFP_i = Y_i / \sum P_i X_i \quad (1)$$

Where: TFPi = Total factor productivity of i^{th} farmer; Y_i = Value of rice produced by the i^{th} farmer (₦); P_i = Unit price of i^{th} variable input (₦); X_i = Quantity of the i^{th} variable input used; and $\sum$ = Summation

The test for statistical difference in productivity based on tenancy status is given as:

$$t\text{-cal} = \frac{\overline{X}1 - \overline{X}2}{S_{\overline{X}1} - S_{\overline{X}2}} \quad (2)$$

$$S_{\overline{x}_1} - S_{\overline{x}_2} = \sqrt{\frac{S^2_{X1}}{n_1} + \frac{S^2_{X2}}{n_2}} \quad (3)$$

Where:

$\overline{X}_1$ = mean productivity of owner occupied rice farmers

$\overline{X}_2$ = mean productivity of tenant rice farmers

S^2_{X1} and S^2_{X2} = variance of the mean productivity of owner occupied and tenant rice farmers respectively.

$Sx_1 - Sx_2$ =standard error of the difference between the mean productivity of owner occupied and tenant rice farmers respectively.

n_1 and n_2 =number of respondents of the owner occupied and tenant rice farmers respectively.

Decision rule: Reject null hypotheses if the t-computed is greater than the t-tabulated ($t\alpha/2$, n-k df), implying a significant difference between the mean an productivity of owner occupied and tenant rice farmers respectively. Otherwise accept.

For the effect of tenancy status on the productivity of rice farmers, the implicit form of the model analyzed is given as:

$$Y = f(X_1,X_2,X_3,X_4,X_5,X_6,X_7,X_8X_9) \quad (4)$$

Where: Y=TFP which is previously defined; X_1=Age; X_2= Farming experience (years); X_3 = Years of education; X_4= Labour (mandays); X_5= Capital (₦); X_6=Tenancy status (owner occupier=1, otherwise=0); X_7= Farm size cultivated (hectares); X_8= Planting materials; and X_9= Fertilizer and other agrochemicals (₦).

RESULTS AND DISCUSSIONS

Land Ownership status

The distribution of respondents based on land ownership status is presented in Table 1.

Table 1. Distribution of respondents according to land ownership status

Ownership status	Frequency	Percentage
Owned	17	28.33
Rented	43	71.67
Total	60	100

Source: Field Survey, 2015.

The result showed that majority (71.67%) of the rice farmers in the in the study area rented land for their farming activities. This discourages the farmer from making improvement on the land as he vacates it at

the end of the cropping season. [14] stated that insecurity of tenure associated with leasehold or rented land serves as disincentive to farmers from investing meaningfully on the land as the land goes back to the owner after the cropping season. Therefore, efforts at enhancing rice productivity should aim at making land available to famers on secured basis and not on the one year renting period as witnessed in the area.

Productivity of the rice famers

The distribution of the respondents based on their productivity level is presented in Table 2. The total factor productivity was estimated. The result showed that 53.33% of the respondents had a productivity range 2.1 – 3.0. The mean productivity 2.2. This result suggests that opportunities exist for increasing the productivity of the farmers. This is important in order to ensure the growth and competitiveness of the agricultural market, income distribution and savings, and labour migration. An increase in productivity implies more efficient distribution of scarce resources and leads to an increase in the farmer's comparative advantage in product increases and welfare.

Table 2. Distribution of the respondent based on the productivity level

Productivity	Frequency	Percentage
0.1-1.0	3	5
1.1-2.0	18	30
2.1-3.0	32	53.33
3.1-4.0	5	8.33
4.1-3.0	2	3.33
Total	60	100
Mean	2.2	

Source: Field Survey, 2015.

Test for Differences in Productivity

The test for significant difference in productivity between the owner occupier farmers and tenant farmers is presented in Table 3.

Table 3. Test for Difference in productivity

Variable	Obs	Mean	Std. Error	Std. Dev	t- ratio
Owned	17	3.059	2342896	8116028	5.695***
Rented	43	1.962	077549	5316489	
Combined	60	2.185	0963538	7401079	
Difference		1.098	1927685		

Source: Field Survey, 2015.

The result showed that there was significant difference in productivity. The t- ratio was significant at 1% and positive implying that productivity of owner occupier farmers were significantly higher than that of their counterparts.

Determinants of Productivity of the farmers

The estimated determinant of productivity is presented in Table 4. From the Table, the Semi-log functional form was chosen as the lead equation, based on the magnitude of the coefficient of multiple determination (R^2), the number of significant variables, the conformity of the signs borne by the coefficients of the variables to *a priori* expectation, as well as the significance of the f – ratio. The coefficient of multiple determination was 0.9068. This implies that 90.68% of the variables in productivity was explained by the variables included in the model. The f-ratio was significant at 1% level of probability, indicating the goodness-of-fit of the model. The significant variable influencing the productivity of the farmers were age of the farmer, farming experience, labour, capital, tenancy status, farm size, planting materials and fertilizer and agrochemicals.

Table 4. Determinants of productivity

Variable	Linear	Exponential	Double log	Semi – log +
Intercept	6886.887	9.324289	7.603521	49.43148
	(4.95)***	(28.60)***	(5.96)***	(3.90)***
Age (X_1)	-121.732	-0081532	-286707	-312.5719
	(-2.48)**	(-1.51)	(-1.70)*	(-8.77)***
Farming experience (X_2)	107.339	0029785	0953166	25.85414
	(2.67)***	(0.55)	(0.99)	(4.28)***
Education (X_3)	674.901	0032331	0006663	99.4821
	(6.42)***	(0.49)	(-0.02)	(-1.29)
Labour (X_4)	-1814.718	-1612158	0646944	-106.2384
	(-1.76)*	(-2.58)***	(-2.13)**	(-2.00)**
Capital (X_5)	8457705	-0001744	0232913	2212.185
	(-0.22)	(-0.74)	(0.17)	(6.77)***
Tenancy status (X_6)	732.6881	0144632	0050397	13.31245
	(5.88)***	(0.19)	(3.03)***	(6.31)***
Farm size (X_7)	5765.865	2960869	8236094	150.2533
	(4.51)***	(3.83)***	(6.08)***	(5.25)***
Planting materials (X_8)	3.900257	0000886	1477554	76.73344
	(2.55)***	(0.96)	(1.10)	(2.71)***
Fertilizer and agrochemical(X_9)	4364006	0410131	1307606	143.4859
	(0.60)	(3.65)***	(10.76)***	(4.78)***
R^2	0.8803	0.7848	0.8973	0.9068
Adjusted R^2	0.8588	0.7461	0.8789	0.8900
F –ratio	40.88***	20.26***	48.56***	54.04***

Source: Computed from field Survey Data, 2015
*** = significant at 1%, ** = significant at 5%, * = significant at 10%, + = lead equation, (…) = t – ratio

The coefficient of age was significant at 1%

level of probability and negatively related to productivity. This implies that the productivity of the farmer decreases as the farmer gets older. Farm production is tedious requiring mental and physical exertion, hence the capacity of the farmer to cope with the daily demands and challenges of production activities declines as the farmer gets older. This explains the negative relationship between age and productivity.

The coefficient of farming experience was significant at 1% level of probability and positively related to output. This implies that the higher the years of farming experience, the higher the productivity, this conforms to a priori expectation. The years of experience may give a practical indication of the knowledge the farmer has acquired on how best to overcome certain inherent problems associated with agricultural production [12 and 16].

The coefficient of labour was significant at 5% level of significant and negatively related to productivity. This implies increased use of labour would lead to decline in output. This does not conform to *a priori* expectation. [13] and [16] however, reported similar findings. The explained that the negative relationship between labour and productivity must have resulted from increased use of labour beyond the point of its economic optimum or to the point of diminishing marginal productivity. This often happens when farm households source labour from within the household which is not paid for.

The coefficient of capital was significant at 1% level of probability and positively related to output. This implies that as capital increases productivity increases. This results from the use superior technology in farm operations such as tractors and other forms of farm mechanization in rice farming.

The coefficient of tenancy status was significant at 1% level of probability and positively related to productivity. This implies that productivity of owned farms were higher that rented farms. This confirms the result of the test of difference in productivity and collaborates the findings of [6] who noted that positive association exist between land ownership and productivity. [12] and [17] noted that insecure property rights over land reduce sharply the level of activity on the land as it serves as disincentive to farmers from investing meaningfully on the land since the land goes back to the owner after the cropping season.

The coefficients of farm size, planting materials, and fertilizer and agrochemicals were all significant at 1% level of significant and positively related to the productivity of the rice farmers. This implies that increase in these variables, *ceteris paribus,* would lead to increase in output. Large consolidated land holdings facilitates farm mechanization leading to increased output per unit of input and application of fertilizer increases the fertility of the soil, leading to higher productivity.

Constraints faced by the rice farmer

The distribution of respondents based on the problem encountered in rice production is presented in Table 5.

Table 5. Distribution of respondents based on the problem encountered

Problem encountered	Frequency*	Percentage
Inadequate capital	52	86.67
High cost of inputs	44	73.33
Lack of credit facilities	35	58.33
Pest attack	40	66.67
Poor extension/advisory services	43	71.67
Limited access/high cost of land	34	56.67

Source: Field Survey, 2015.
*Multiple responses

The Table showed that the major constraints faced by the rice farmers were inadequate capital, high cost of inputs, poor extension/advisory series, pest attack, and limited and high cost of land. These problems have been noted to be the major reasons for the slow rate of increases in rice and other food crop production in Nigeria (Palada, 1994; Onyenweaku, 2000; and Iheke, 2006). Efforts at achieving increased rice productivity therefore be aimed at resolving these myriad of constraints.

CONCLUSIONS

It could be concluded from this study that tenure security/secure property rights over land is critical to achieving increased

agricultural productivity. This is given that own farms' productivity were significantly higher that of rented farm probably owing to reduction in the level of activities on rented farms. Therefore, policies that we grant farmers increased access to land and secured tenure should be put in place. This calls for a review of the land use decree with a view of making it operational especially as regards granting farmer access to land for their farm operations.

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