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DETERMINANTS OF TENURE SECURITY AMONG CASSAVA-BASED FARMERS IN ABAK AGRICULTURAL ZONE, AKWA IBOM STATE, NIGERIA

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Abstract

The study estimated factors influencing tenure security among Cassava-based farmers in Abak Agricultural Zone, Akwa Ibom State, Nigeria. Primary data was collected from 150 cassava farmers through a multi-stage sampling technique and analyzed using both descriptive statistics and the logistic regression. Findings revealed that most (34.7%) of the cassava farmers were within the age bracket of 41-50 years with a mean of 43 years of age. Majority (56.7%) were female with a mean household size and farming experience of 6 persons and 12 years, respectively. Farmers were quite educated (74.7%) with a mean of 14 years of educational attainment. Findings further showed that tenure security was significantly affected by household size, educational attainment, and participation on off-farm work, land conflict and secured land title. The study concluded that current research effort and policy design geared towards reducing hunger and food insecurity through enhancement of productivity should be tailored towards addressing the twin problem of tenure security and access to land. Series of policy recommendations have been offered.

Keywords: Determinants; tenure security and cassava-based farmers, Nigeria.

Introduction

In addition to poverty, one of the greatest challenges facing Sub-Saharan Africa (SSA) is increasing population. (Chavin *et. al.*, 2012.). As population increases, the food requirement doubles calling for re-strategization among several countries on how to curb the rising food crisis. As a result, availability and access to food by the teeming population depends considerably on increased food and agricultural production. Since agricultural production activities are carried out on land, which is fixed in supply and in stiff competition for others economic uses, its acquisition and use is important for sustainable productivity.

Cassava has been identified as an essential staple whose cultivation if encouraged can provide the nationally required food security minimum of 2,400 calories per person per day (FAO, 2002). Despite this potential, the cassava sub sector is characterized by low productivity (Afolani *et. al.* 2015 and FAO, 2013). Prominent among factors liable for this low productivity of cassava is poor access to land and high tenure insecurity (Philip, Nkanga, Pender and Oni, 2009) as reported in

other African countries (Bizimana, Nieuwuidt, and Ferrer, 2004 and Musambayi, 2013).

In Nigeria, access to land is poor and is attributed to excessive land fragmentation, industrialization resulting in frequent conversion of cultivable lands to other economic uses, reduction in land- man ratio and average size of farm lands (Okon and Enete , 2009, Lockahood 1991). The prevailing land tenure system is characterized by communal ownership which restricts individual land rights (Otsuka and Place 2001) and results in poor investment on land, reduce fallow period and intensification of land use (FGN 2004). Such increased land use intensity results in depletion in soil fertility, decline in productivity, loss of soil structure, soil erosion and land degradation (Upton 1996 and Cassman 1999).

The promulgation of the land use Act of 1978 and the establishment of the National Accelerated Land Development Authority in 1991 were meant to enhance access to land and promote security of tenure by rural communities. Despite these initiatives, the problem of poor access to land and tenure insecurity still persist (Igbozurike, 1980 and Udoekem, Adego).

This justifies the current ranking of Nigeria as the lowest country in terms of secured tenure acquisition by World Bank (2014) considering ease of acquisition of property right. Secured property rights have been reported to have significant productivity implications (Deiminger and Castagnini 2006, Holden, Deiminger and Ghabru 2008, Austin, Uluma and Solaiman, 2012, Kakugh, Aderu, and Ikwuba, 2011 and Olayimola and Adeleye, 2006). This accounts for the increase avocations for land right formalization (through registration and certification of land rights) by many developing countries as a top priority in their economic development agenda (Holden, Deininger and Ghebru, 2011).

Despite the aforementioned implications of tenure security on productivity, little empirical evidence exists in the study area. Though several researches have been carried out on land tenure security in other parts of Nigeria (Philip, Nkanga, Perder, Aderu and Ikwuba, 2011, Austin, Wuma and Sulasman, 2012), none of these researches had focused on cassava farmers. Therefore, given the potential of cassava in addressing food security, the roles of land as a critical production resource and the implication of secured tenure system in agricultural productivity, there is need to empirically examine those factors militating against the attainment of tenure security in the study area. Against this backdrop, this study analyzed factors influencing tenure security among cassava-based farmers in Abak Agricultural Zone, Akwa Ibom State, Nigeria.

Study Area

The study was conducted in Abak Agricultural Zone, Akwa Ibom State, Nigeria. The zone which lies between latitude $4^{\circ}33'$ and $5^{\circ}75'$ N and Longitude $7^{\circ}35'$ and $8^{\circ}25'$ E comprises five Local Government Areas namely, Abak, Etim Ekpo, Ika, Oruk Anam and Ukanafun respectively. It is classified under the humid tropical rain forest zone though most parts have been modified into oil palm bushes, available crop farms, fallow etc because of agricultural activities and population pressure. There are two distinct seasons characterized by seven months (April – October) of wet season and five months (November – March) of dry season. Mean

annual rainfall in the zone is 3500mm while temperature ranges from 29°C to 33°C .

The people are mainly farmers and traders. Major crop grown include cassava, yam, vegetables, oil palm, citrus, rubbers and kolanut. In addition rural households keep few goats, sheep, local chicken and pigs. The major language of the zone is Annang and their right cultural heritages are Ekpe and Ekpo Masquerades as well as Idiong. The population of the zone comprises 1,960,002 male and 1,960,206 female making a total population of 3,920.208 million people (NPC, 2006).

Sampling procedures and sample size

Multi-stage random sampling procedure was used to select respondents. In the first stage, Abak agricultural zone was selected from the existing six agricultural zones. Secondly five blocks were selected from the existing nine for the study. These were; Ikot Ekang, Utu Etim Ekpo, Ikot Okoro, Urua Inyang, Ikot Akpan Essien. In the third stage, two cells each were selected from each of the chosen block making a total of ten cells that was used for the study. The last stage entailed the selection of fifteen (15) respondents from each of the selected cells making a total of 150 respondents.

Method of data analysis

Data was analyzed using both descriptive and inferential statistics. Apart from mean and simple percentages, the logistic regression model was also adopted. The logic model used was implicitly stated as follows:

$$Z_i = \beta x_i + \mu \dots\dots\dots (1)$$

Where z = Tenure security status (measured as Tenure secured 1, otherwise 0)

x_i = vector of explanatory variable

μ = Stochastic error term

β = Vector of the parameter estimates

The explicit form of the model is stated as follows

$$\text{TES} = \beta_0 + \beta_1\text{HHS} + \beta_2\text{RES} + \beta_3\text{EDU} + \beta_4\text{CRA} + \beta_5\text{OFW} + \beta_6\text{EXTV} + \beta_7\text{MEC} + \beta_8\text{FAX} + \beta_9\text{LCON} + \beta_{10}\text{SLT} + \beta_{11}\text{THI} + \mu$$

Where;

TES = Tenure security status (Tenure security =1, otherwise 0)

HHS = Household size (Number of persons)

RES = Residential status (indigene 1, visitor 0)

EDU = Educational attainment (years)

CRA = Credit access by farmer (yes =1, otherwise 0)

OFW = Availability of off-farm work measured in terms of closeness to government owned institution

EXTV = Extension visit (Yes =1, No = 0)

MEC = Membership of cooperative (Yes =1, No 0)

FAX = Farming experience (years)

LCON = Land conflict (experienced conflict before = 0, otherwise 0)

SLT = Secured land title (if legal land titles is obtained, otherwise (0)

THI = Total household income (Naira)

μ = Stochastic Error Term

The marginal effects of the estimated logic model which measured the impact that the unit change in any of the explanatory variable had on the predicted probability when the other variable are held constant was calculated by finding the derivatives of the conditional mean function with respect to the explanatory variable.

i.e $\frac{dy}{dx}$

Findings and discussion

Socio-economic characteristics of cassava farmers

Table 1 presents the socio-economic characteristics of cassava -based farmers in the study area. Result shows that majority of cassava farmers (34.7%) were within the age bracket of 41-50 years, 28.7% were within 51-60 years, 20, 13.3 and 3.3 percent were within the age brackets of 31-40, above 60 and less than 30 years respectively with a mean of 43 years. The prevalence of the age bracket of 41-50 indicated that farmers were still young and energetic and had the necessary vigor required for cassava production. This is capable of impacting positively on cassava production in the study area. Also, farmers were quite experienced with a mean of 12 years. A breakdown of this shows that about 40 percent had more than 15 years' experience, 24 percent had 5-10 years' experience, while 22 and 14 percent had 11 – 15 and less than 5 years of experience respectively. In the study area, Bassey, Akpaeti and Umoh, (2014) reported that cassava farmers had a mean of 9.5 years of experience.

In terms of sex, majority of the respondents (56.71) were female while 43 percent were male.

Bassey, Akpaeti and Udo, (2014) reported that majority (68.9%) of cassava farmers were female.

Considering access to extension services, majority (68.7) had no extension contact while only 30.7 percent had extension contact. This is capable of affecting cassava production positively given that access to new cassava production technologies and basic farm inputs is associated with constant access to extension services.

Regarding membership of farmers association, majority (62%) were not members of social organization while only 38 percent said they belong to one organization or the other. Membership of social organization provides a platform for farmers to access production information and offer a pool of farm management knowledge that can be leveraged on to improve cassava production.

Household size wise, majority (54%) of cassava farmers had household size of 6-10, followed by household size of 1-5 (26.7%) while 14.6 and 4.7 percent had household sizes of 11-15 and above 15, respectively with a mean of 6 members. The huge household size is an indication of available labour that can be leverage on for cassava production in the study area. Bassey, Akpaeti and Umoh, (2014) reported a mean household size of 5-10 persons (48.9%) among cassava farmers in the study area.

Regarding credit access, majority (78.7%) did not access credit while only 21.3 percent did. This implies that a greater part of cassava production activities in the study area was funded by farmers equity and is capable of affecting cassava production because farmers will be deprive of access to certain services and farm inputs.

Educationally, farmers were quite educated with a mean of 14 years of education. A breakdown of this reveal that 25.3 percent had no formal education 14.7 percent attended primary school, 36.7 percent attended secondary school, 12.7 percent had OND/NCE while 6.4 and 4 percent had HND/B.Sc and M.Sc/Ph.D respectively. Bassey, Akpaeti and Umoh, (2014), found that majority of cassava farmers (75.6%) in the study area were educated.

Farm size wise, the average farm size in the area was 1.1 hectare. A greater (44.7%) percentage of respondents had 1-2 ha, 28.7 percent had less than 1 hectare while 18.0 percent and 8.6

percent had 2.1-3 and above 3 hectare, respectively.

In terms of residential status, majority 58.7 percent of cassava farmers were indigenes while 41.3 percent were visitors.

Table 1: Socioeconomic characteristics of respondent

Variable	No.	Frequency	Mean
Age: Less than 30 yrs	5	3.3	
31 – 40	30	20	
41 – 50	52	34.7	43 years
51 – 60	43	28.7	
Above 60	20	13.3	
Experience: Less than 5	21	14	
5 – 10	36	24	
11 – 15	33	22	12 years
Above 15	60	40	
Sex: Male	65	43.3	
Female	85	56.7	
Access to Extension Service			
Yes	47	31.3	
No	103	68.7	
Membership of Social cooperative.			
No	93	62	
Yes	57	38	
Household size:			
1 – 5	40	26.7	
6 – 10	81	54	6 Years
11 – 15	22	14.6	
Above 15	7	4.7	
Credit Access:			
Yes	32	21.3	
No	118	78.7	
Education attainment			
No formal education	38	25.3	
Primary School	22	14.7	14 Years
Secondary School	55	36.7	
OND/NCE	19	12.7	
HND/BSc.	10	6.6	
M.Sc./Ph.D	6	4	

Farm size:

Less than 1 ha	43	28.7	
1 – 2 ha	67	44.7	1.1 ha
1.1 – 3.0 ha	27	18	
1.2 Above 3 ha	13	8.6	

Residential Status:

Indigene	88	58.7
Visitors	62	41.3

Marital Status:

Single	30	20
Married	80	53.3
Divorce	25	16.7
Widow(er)	15	10

Source: Computed from field Survey, 2018.

Factors Influencing Tenure Security

Table 4 presents the result of the Logit Model that was estimated to show the determinants of tenure security in the study area. The diagnostic statistics revealed a Log Likelihood ratio of -68.143, significant at the 1% level of probability, denoting the goodness of fit and the strong explanatory power of the model. The Pseudo R² was 0.7231 implying that about 72.31% of the variation in tenure security is explained by the specified explanatory variables in the model.

From the result, the coefficient of household size was significant and negatively related to tenure security at the 5% probability level, indicating that increasing household size will reduce tenure security among the respondents. The marginal effect (-0.1024) shows that a 10% increase in household size will reduce tenure security by 1.024 percent. This is expected because huge household size will lead to excessive land fragmentation because the chances that family land will be shared among family members are high. Also, income that would have been used to pursue and obtain formal land titles (registration) may be used in meeting family obligations. Lockword (1991) attributed the poor access to land to excessive land fragmentation. Findings contradicted that of tsegaye, (2012) in Ethiopia who reported that household size had a significant negative effect on tenure security. It also corroborates USAID (2007) who reported that farmer's perception of land tenure security decreases with increasing household size.

The education coefficient was positive and significantly related to tenure security at the 5 % level of probability. The marginal effect (0.6565) shows that a 10% increase in educational attainment will increase tenure security by 6.5 percent. Educated farmers are well enlightened and vested with formal land registration procedures and can leverage on their wealth of educational experiences and contacts to get their land legally and duly registered with appropriate state authorities than their illiterate counterparts. This findings contradicted that of Tsegaye (2017) in Ethiopia who reported a negative significant relationship between tenure security and educational attainment.

Availability of off-farm work was negative and significantly related to tenure security at 10 percent probability level indicating that tenure security will reduce with increasing availability of off farm work. Judging from the coefficient of its marginal effect, a 10 percent increase in off-farm work availability will reduce tenure security by 0.143 percent. The plausible justification for this finding is that increase participation in off farm work leads to abandonment of farm lands resulting in encroachment on such lands and its attendant land conflicts. This, invariably, results in conflicts and loss of farmland ownership in most cases.

Land conflict was negative and significantly reduces tenure security at the 5 percent level of probability. From its marginal effect coefficient, a 10 percent increase in land conflict will reduce

tenure security by 0.116 percent. This is justified and is in line with a priori expectation because frequent land conflicts will lead to litigation which in most cases leads to abandonment of farmland due to traditional or court injunctions. In most cases, such farmlands are cultivated after the final determination of case in court. Land conflict can also result in violence and most times death if not properly handled. In Ethiopia, Bogale, Taeb and Endo, (2006) attributed the high land insecurity to land conflicts.

The coefficient of secured land title was positive and significantly increased tenure security at the 5 percent probability level. Marginal effects showed that a 10% increase in secured land title will increase tenure security by 0.052%. This is justified in that secured legal land title will prevent land encroachment, thereby forestalling conflicts, and litigation that might have arisen from such encroachment. This finding corroborates that of FAO, (2000) who reported that well defined and enforced property rights on land enhanced tenure security.

Table 2: Determinants of land tenure security

Variable	Coefficient	Z	P > z	Marginal effect
Constant	-7.6421	3.13	0.002	-
Household size	0.0638	-2.69**	0.008	-0.1024
Residential Status	0.8423	0.90	0.38	0.1977
Education	0.4116	3.99***	0.00	0.6565
Credit access	1.0132	0.38	0.710	0.0011
Off farm work	0.0495	-1.94*	0.07	0.0143
Extension visit	-2.2451	-1.20	0.23	-0.5919
Membership of cooperative	0.5622	1.62	0.11	0.4830
Farming experience	0.933	0.99	0.33	0.1674
Land Conflict	-0.3120	-2.56**	0.03	0.0116
Secured land title	0.1006	2.77**	0.006	0.1032
Household income	2.1734	0.42	0.680	0.0052
LR chi ²	=	87.64		
Prob> Chi ²	=	0.000		
Psavo R ²	=	0.7231		
LR ratio	=	-68.143		

***denote $p \leq 0.001$, ** $p \leq 0.05$ and * $p \leq 0.1$

Conclusion

This study analyzed tenure security and its determinants among cassava-based farmers in Abak Agricultural Zone, Akwa Ibom State, Nigeria. Findings has shown that majority of farmers were tenure secured and that the prevailing land ownership pattern in the study area were inheritance and outright purchase Hence, the study conclude that current research effort and policy design directed towards reducing hunger and food insecurity should be tailored towards addressing the problems of tenure security and access to land

Recommendations

The following recommendations evolved from the findings.

- (i) Tenure security was found to be significantly reduced by household size. Accordingly, emphasis should be laid on reducing household sizes. Awareness and sensitizing campaign should be carried out on the need for farmers to reduce their number of dependents. Such awareness initiative should be tailored towards discouraging polygamy, encouraging child spacing and introducing family planning.
- (ii) Participation in off-farm work was found to reduce tenure security, hence polices that will reduce off-farm work participation should be pursued. To reduce off-farm participation, farming should be made more lucrative so as to

reduce movement of farmers out of farming sector. Incentives should be given to farmers. If possible the defunct farm settlement scheme should be re-introduced to encourage young school leavers take up farming as a profession. By so doing, incidence of farmland abandonment will be minimized which will, invariably, reduce the evolution of land conflicts.

- (iii) Land conflict was also found to reduce tenure security; therefore, effort should be directed towards minimizing the evolution of conflict in the study area. To minimize incidence of land conflicts, local capacity should be built by land use stakeholders to handle and properly manage land encroachment and conflicts so as to reduce incidence of court cases and its attendant farm land injunction, and abandonment which results in tenure insecurity.

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