SOCIOECONOMIC FACTORS INFLUENCING ACCESS TO LAND AMONG WOMEN ARABLE CROP FARMERS IN IKA NORTH EAST LOCAL GOVERNMENT AREA DELTA STATE, NIGERIA

Gbigbi, T.M

Department of Agricultural Economics and Extension
Delta State University, Asaba Campus Asaba
gbigbitheophilusmiebi@yahoo.com.
08039591604

ABSTRACT

The factors influencing women's access to land for arable crop production in Ika North East Local Government Area, Delta State, Nigeria was investigated. Purposive and random sampling procedures were used. Primary data were obtained through structured questionnaires administered to 120 respondents. Data were analyzed using descriptive statistics, probit model and regression model. Findings showed that the mean age and standard deviation of the respondents was 37±9.32 years *and majority (80.8%) were literate. The mean household size and standard deviation was 6*±2.16 persons*. The mean years of farming experience and standard deviation was 7*±3.22 years *and majority (65.8%) were married. The mean farm size and standard deviation was 1.83*±2.12ha*. The mean distance and standard deviation was 6.4*±2.43 km from resident to farm location*. Majority (60.8%) acquired farm land through rent. The land acquisition pattern revealed that 67.5% obtained farm land through inheritance. The result of the probit regression model showed that price of land, local customs, income of farmers, farming experience, private land tenure, communal land tenure and access to credit were the major determinants of women access to land at p<0.01 and p<0.05 alpha level. While the correlation analysis showed that significant relationship exist between output and land acquisition by rent, inheritance and borrowing at p<0.01. The Chi-square test showed significant relationship between land acquisition by rent, communal, inheritance, borrowing and output. The result had showed that access to land by women is a serious problem which needs urgent attention.*

Key words: Access, Arable crop, Land, Production, Women

INTRODUCTION

Land is an important asset in crop production. Access to it varies across gender as men are mostly favoured. Access to land defines the magnitude of women participation in arable crop farming (Aribisola, 2000). Land is a fundamental resource for the women as it provides an important basis for their economic and social development. Access to land is *sine qua non* for agricultural production by women arable farmers. The prevalence of subsistence farming by the women is indicative of the type of tenure system in the environment. In several parts of Africa, land is understood as a communal

property which is anticipated to be conserved and passed down to future generations (Bugri, 2008). It has also been argued by (Leonard and Toulmin, 2000; Duncan, 2004) that more attention be given to women access to land in Africa because women contributed 60% to 80% of food production, food security in developing countries despite enjoying very limited rights to land.

The land tenure types in sub-Sahara Africa are categorized into three: public or state, communal or customary and individual or private (Deininger, 2003).

Women's access to land is fundamental to women's financial liberation, as land can assist in food production and income generation, as collateral for credit and as a means of holding savings for the future. Regardless of women's essential contributions in agriculture, it is challenging for women to obtain land to access credit institution to intensify their production ability to improve efficiency (Tenaw *et al*. 2009).

According to Marcela (2010) the men easily access land, financial services, training, information and improved technology for agricultural production than the female counterparts.

Land tenure is the system of rights and institutions that governs access to and use of land and other resources (Belay and Manig, 2004). In areas where shifting cultivation is common, farmers need much of investments in land development. However, their investment decisions may be affected if they are not sure how long they would be allowed to use the ownership right. The rights to land are an international issue with dynamisms depending on individual country's tenure arrangement.

In Nigeria, the promulgation of the Land Use Act (LUA) in 1978 brought fundamental change in the land tenure systems through the abolition of private ownership of land (Fajemirokun, 2000). Customary land tenure, even from the colonial times did not guaranteed women and other vulnerable groups in society, thereby disheartening active involvement in agriculture (UNECA, 2011). The FAO (2002) agrees that in many countries, lack of adequate provisions for women to hold land rights independently of their husbands or male relatives is still prevalent.

The factors that influence women access to agricultural land include: legal conditions, transaction cost, credit, location, income, land prices (Jemma, 2001; Wannyeki, 2003 and Bidoli *et al*., 2006).

Researchers like Bidoli *et al*. (2006) conducted a study on land rights and land improvement technologies in Nigeria. Belay and Manig (2004) carried out a study on access to land in Eastern Ethiopia and Bugri (2008) studied gender issues in Ghana land tenure. These studies were done outside Nigeria. Nevertheless, no similar study has been carried out in Delta State especially the study area to consider access to land by women arable crop farmers and effect on agricultural production. They did not relate access to land with arable crop output of women farmers. The socioeconomic features that influence

women access to land was also missing in previous studies whereas socioeconomic variables could determine to a large extent the access of women farmers to arable land especially considering the socio-cultural background of women in Africa context. This study tends to fill these knowledge gaps. The evolution theory of land rights was used to justify this study.

The specific objectives are to: describe the socio-economic characteristics of women farmers in the study area, identify and describe the mode of land acquisition in the study area, determine the factors affecting women farmers access to land in the study area, determine relationship between output and land acquisition and examine the determinants of output by women arable crop farmers in the study area. The justification of this study is hinged upon the fact that, it will not only reveal the various land tenure practices in the study area but will also determine the effect of such tenure practices on the production of women farmers. This knowledge is vital to the government and agricultural land policy makers in working towards improving such tenure practices, more especially as they affect women who are the actors that put food on the table of their household members.

Research Hypotheses

The following null hypotheses were tested.

$H0_1$: Land acquisition by rent is not significantly related to output

$H0_2$: Land acquisition by purchase is not significantly related to output

$H0_3$: Land acquisition by communal is not significantly related to output

$H0_4$: Land acquisition by inheritance is not significantly related to output

$H0_5$: Land acquisition by borrowing is not significantly related to output

MATERIALS AND METHODS

Area of Study

Ika North-East Local Government Area lies between Latitude $5^0$45 North of the equator and between Longitude $5^0$31' and $6^0$14' East of the Greenwich meridian. It is surrounded in the North by Edo State and Ika South Local Government Area at the South and West, while Aniocha North and Aniocha South Local Government Areas mark its Eastern margin. Ika North East occupies a land area of about 430 km^2 with a population of 183,637(NPC, 2006).

The typography of the area is fairly an undulating land and has a tropical climate characterized by dry and wet season. Rainfall is flanked by 175cm and 200cm annually whereas mean annual temperature is almost 14^0C (70^0F). The local government is situated in the rain forest zone and the vegetation comprises of luxuriant, deciduous and evergreen forest. The inhabitants engage mostly in agriculture while a few of them are engaged in trading. The foremost crops cultivated in this area are cassava, yam, cocoyam, melon, maize, vegetable, plantain and tomatoes.

Sampling Procedure

Ika North East Local Government is divided into nine clans namely: Owa, Ute-Ogbeje, Ute-Obgute-Ete, Ute-Okpu. Umunede, Idumuesah, Igbodo, Otolokpo

and Mbiri. Purposive and random sampling procedures were used to select the sampled respondents. In the first stage, six clans were purposively selected namely; Owa, Ute-Ogbeje, Umunede, Igbodo, Otolokpo and Mbiri known for arable crop farming. Secondly, twenty women arable crop farmers were then selected from each clan using simple random sampling technique making a total of 120 farmers selected and interviewed to obtain useful information for the study.

Method of Data Collection

A set of validated, structured questionnaire was used for collection of data. The information gathered on socio-economic characteristics of arable women farmers such as age, level of education, family size, farm size, farming experience, membership of cooperative society and income level. Information on the factors affecting women's' access to land was also elicited. Such information are cost of transaction, prices of land, legal conditions attached to land transactions, location of land, private land tenure, public land tenure, communal land tenure and access to credit. Other information which the questionnaires gathered are on the amounts of output of women arable farmers, the security of each tenure arrangement, amount of labour input, amount of fertilizer used in production and input quantity of planting materials.

Method of Data Analysis

Descriptive statistics (frequency, mean, and standard deviation), probit regression model, correlation analysis and multiple regression analysis were used to achieve the objectives.

RESULTS AND DISCUSSION

Socioeconomic characteristics of women farmers

Age of respondent

The percentage distribution of the majority of respondents according to age was 41 – 50 years (35.0%). This was closely followed by 20 – 30 years (31.7%). About 28.3 percent of the respondents fall between age brackets of 31 – 40 years while only 5 percent of the respondents fall between age brackets of 51 – 60 years. The mean age and standard deviation was 37±9.32 years. This suggests that those involved in arable crop farming are in the prime age of strength and vigour that is required to perform many of the farm operations. The result is in consonance with the findings of Smith (2000) that the younger the farmer is, the higher the zeal into more lucrative income generating activities. The coefficient of variation (CV= 25.19%) which showed that women farmers belong to diverse age group. It means that the group is heterogeneous. They are not clustered to a particular age category. The implication is that they have different characteristics or social challenges such that a single development approach cannot be applied to the women farmers in the study area.

Educational status of respondent

Majority (42.5%) of the respondents had secondary education, while 19.2 percent had no formal education. About 20.8

percent and 17.5 percent had primary and tertiary education. This implies that majority (80.8%) of the respondents are educated. This support Osondu and Ijioma (2014) that education positively influences farm productivity. This is also in consonance with the findings of Balogun *et al*.(2012) who contended that majority of the farmers in Oyo State were educated.

Household size of respondent

Majority (48.3%) of the respondents had household range of 4–6 persons. This was followed by family size of 7–9 members. About 17.5% of the respondents had household size of 1–3 persons while only 5 percent of the respondents had 10–12 persons. The mean household size and standard deviation was 6 ± 2.16 persons. The coefficient of variation (36%) showed that household size was not cluster to a particular category. This implies that the smaller the household size, the lower the proportion of household income that is likely to be devoted to the satisfaction of primary needs like food and clothing. The prevalence of small household size among this set of farmers negates the report of Ashimolowo and Ojebiyi (2009) that the mean household size of rural households in Ogun State was as large as 8 persons.

Farming experience of respondent

The result in Table 1 showed that 56.7 percent of the respondents had 6–10 years farming experience, 33.3percent had 1–5 years farming experience, 8.3 percent had 1–15 years experience while only 1.7 percent had 16–20 years farming experience. The average farming experience and standard deviation was 7± 3.22 years. The coefficient of variation (46%) indicates a good spread. This is in agreement with Mohammed and Ndanitsa (2012) that majority of the farmers in Niger State had between 1 and 9 years farming experience.

Marital status of respondent

The result showed that majority (65.8%) of the respondents is married, while 21.7 percent were single. About 7.5 percent and 5 percent of the respondents are widowed or divorced. This means that arable crop production in the area is majorly practiced by married people. This result is in agreement with Gordon and Craig (2001) who opined that rural household was dominated by married couples.

Farm size of respondent

Farm size distribution revealed that 65 percent of the respondents had below 2ha of farm land, 31.7 percent had between 2 – 4ha, 2.5 percent of the respondents had between 5 – 7ha while only 0.8 percent of the respondents had between 8 – 10ha. The mean farm size and standard deviation was 1.83 ± 2.12 ha. The result of coefficient of variation (115.7%) showed that farm size was spread across which means that all farmers were not confined to a definite farm size but choice and strength of the farmers. However, the result implies that they were mostly small scale farmers. This agrees with the findings of Adeyelu *et al*. (2013) that majority (76.5%) had farm size below 2ha in Oyo State.

Distance of residence to farm land (km)

The result revealed that 45 percent of the respondents had distance of 4 – 6km from residence to farm land. This was followed next by 27.5 percent who walk a distance of 7 – 9km to farm land. About 15.8 percent of the respondents cover a distance of 10 – 12km to farm site while only 11.7 percent of respondents had a close distance of 1 – 3km for farming operations. The mean distance covered and standard deviation by the respondents was 6.4± 2.43 km. The result of coefficient of variation (37.9%) showed that the farms and the farmers were not cluster in the same place. The mean distance implies that the farms and the farmers are distance apart. This is capable of hindering easy access to land by women arable crop farmers.

Table 1: Socioeconomic Characteristics of Women Farmers (N=120).

Variables	Frequency	Percentage	Mean/std dev
Age (years)			
20 – 30	38	31.7	
31 – 40	34	28.3	
41 – 50	42	35.0	37 ±9.32years
51 – 60	6	5.0	
Educational level			
No formal education	23	19.2	
Primary education	34	20.8	
Secondary education	42	42.5	
Tertiary education	6	17.5	
Household Size			
1 – 3 persons	21	17.5	
4 – 6	58	48.3	
7 – 9	35	29.2	6 ±2.16 persons
10 – 12	6	5.0	
Farming Experience (years)			
1 – 5	40	33.3	
6 – 10	68	56.7	
11 – 15	10	8.3	7 ±3.22 years
16 – 20	7	1.7	
Marital Status			
Married	79	65.8	
Single	26	21.7	
Widowed	9	7.5	
Divorced	6	5.0	
Farm Size (ha)			
Below 2	78	65	
2 – 4	38	31.7	
5 – 7	3	2.5	1.83±2.12ha
8 – 10	1	0.8	
Distance (km)			
1 – 3	14	11.7	
4 – 6	54	45.0	
7 – 9	33	27.5	6.4±2.43 km
10 – 12	19	15.8	

Source: Field survey, 2017

Mode of Land Acquisition

The result in Table 2 showed that majority (60.8%) of the women access land through rent. This was followed by 20.8 percent that acquired their land through inheritance while 10.0 percent cultivated community owned land. About 5.0 percent acquired land through borrowing and only 3.3 percent of the respondents accessed land through purchase. This implies that the process of land acquisition was not favourable to women arable farmers. The result is in consonance with the findings of Oladehinde *et al*. (2017) in Ogun State that the common method of accessing land among farmers was through renting.

Table 2: Mode of Land Acquisition.

Mode of acquisition	Frequency	Percentage
Rented	73	60.8
Purchased	4	3.3
Community owned	12	10.0
Inherited	25	20.8
Borrowed	6	5.0

Source: Field survey, 2017

Table 3 showed the various forms of land tenure systems predominant in the study area. The result indicated that majority (67.5%) of the women confirmed that the private land tenure system is most prevalent, this was closely followed by 44.2 percent that established the occurrence of communal tenure system while only 16.7 percent showed presence of public land tenure system.

Table 3: Forms of Land Tenure Systems.

Types	Frequency	Percentage
Private land tenure	81	67.5
Communal land tenure	53	44.2
Public land tenure	20	16.7

Source: Field survey, 2017

Determinants of Women Arable Farmers Access of Land

The result of probit regression estimates of factors affecting women arable crop farmer access to land is presented in Table 4. The result showed that the coefficients of local customs, income, farming experience were significant and negative while the coefficients of price of land, private land tenure, communal land tenure and access to credit were positive and significant at given levels. The coefficient of price of land (0.0004686) was positive and statistically significant at $p<0.01$. The positive sign of this coefficient implies that as the price of land increased, women access to land also increased.

This is contrary to a priori expectations and Duncan and Brants (2004) report that high and rising cost of urban lands might deter more women from buying land in the metropolis.

The coefficient of local custom (-2.195324) was significant at $p<0.05$ level and negatively influenced access to land. This means that as local customs increases, access to land by women also decreases. The implication of this is that the respondents will be deprived in favour of their male counterparts. The result supports that Customs and traditions of patriarchal societies serve as great deterrent to women empowerment. Adegoroye and Adegoroye (2008) find out from their study that harmful cultural practices militate against women economic empowerment. Also, Ebele (2003) stated that in some societies, inherited tradition prevents women from inheriting land both from their fathers or husbands thereby limiting their access to collateral and productive opportunities. International Land Coalition (ILC) (2012) agreed with findings that tradition deprives women to own a land.

The coefficient of income (-0.0004529) was statistically significant at $p<0.01$ alpha level and negatively related to access to land. This means that as income level of respondents increased, the access to arable land by women also decreased. This was not in conformity with a priori expectation. Finance is the backbone of any economy and can limit the level of economic activities to an individual, society or country. Magaji and Aliyu (2007) also found that income influences physical autonomy and affects most of the women empowerment indicators significantly.

The coefficient of farming experience (-0.1238404) of the respondents was significant at $p<0.05$ level and was negatively related to women access to farm land. This means that as years of farming experience increases, women access to land decreases.

The coefficient of private land tenure (1.00477) was significant at $p<0.05$ risk level and positively influenced women access to farm land. This means that as private land tenure increases, access to land by women also increases. The coefficient of communal land tenure (1.026824) significantly increased access to land by women. This effect is significant at the $p<0.05$ level. This implies that a unit increase in access to land by women to communal land tenure will lead to a corresponding increase in access to land by women in the study area.

The coefficient of access to credit (3.954412) was statistically significant at $p<0.01$ probability level and positively related to access to land by women. This means that an increase in access to credit will lead to corresponding increase in women's access to farm lands. The implication of this is that the amount of credit accessed with enable them to acquire land for their farming operations. This result is in agreement with Famakinwa *et al*. (2017) that Accessibility to credit can influence land accessibility because farmers that have

access to credit will likely have opportunity to borrow money to acquire more land for economic activities.

Table 4: Probit Results of the Determinants of Women Arable Farmers Access to Land

Output	Coef.	Std.Err.	z	P>/z/	dy/dx
Pol(X_1)	0.0004686	0.0001319	3.55	0.000***	0.0001425
Lecon(X_2)	-2.195324	0.8815508	-2.49	0.013**	-0.3178563
Lol(X_3)	0.1057323	0.0821424	1.29	0.198	0.0321462
Iof(X_4)	-0.0004529	0.0001295	-3.50	0.000***	-0.0001377
Faxp(X_5)	-0.1238404	0.0626956	-1.98	0.048**	-0.0376517
Prlt(X_6)	1.00477	0.4719545	2.13	0.033**	0.34761
Pult(X_7)	-0.3960437	0.5173497	-0.77	0.444	-0.1068965
Colt(X_8)	1.026824	0.4403882	2.33	0.020**	0.3530072
Aoc(X_9)	3.954412	0.7773977	5.09	0.000***	0.9353972
Moc(X_{10})	-0.0773145	0.448064	-0.17	0.863	-0.0232458
age(X_{11})	0.0109453	0.0223137	0.49	0.624	0.0033278
Edul(X_{12})	0.2297084	0.204694	1.12	0.262	0.0698392
Cons	-15.75097	4.309793	-3.65	0.000***	

Source: Field survey, 2017 **** sig. at 1%; ** sig. at 5%; * sig. at 10%.*
Log likelihood= -33.325428, LR chi2 (12) = 84.69, Prob >chi2 = 0.000, Pseudo R2 =0.5596.

Results of correlation analysis

Correlation coefficients in Table 5 showed that significant relationship exist between output of arable crop farmers and land acquisition by rent, purchase, communal, inheritance and borrowing at 0.01 level of significance. The coefficient of communal (r=--0.0139) was negatively and not correlated to the output of arable crop production. This implies that, contrary to a priori expectation, because increase in land acquisition by communal process of the respondents leads to decrease in the level of arable crop output of women. It may be that the communal system leads to land fragmentation and low output. The coefficient for rent (r=0.6130**), inheritance (r=0.5305**) and borrowing (r=0.5590**) were positively related to output of women arable crop farmers. This implies that, the output of women arable crop farmers increases with increase in rent, inheritance and borrowing.

Table 5: Result of Correlation Analysis of Relationship between Output and Land Acquisition

Variables	r-value
Rent	0.6130**
Purchase	0.0146
Communal	-0.0139
Inheritance	0.5305**
Borrowing	0.5590**

Source: Field survey, 2017 *r= correlation coefficient values of corresponding variables; **= correlation significant at p<0.01*

Determinants of Factors influencing the Output of women farmers

The result of the multiple regression model in Table 6 showed the equation of output was best estimated and explained using double logarithmic functional form which explained 61.38% of the total variation in the explained variable. Other statistical and econometric considerations such as the number of significant coefficients and their conformity to a priori expectations were in favour of double logarithmic functional form. The F–statistic value of 19.43 is statistically significant at p<0.01 level, suggesting a good fit of the model.

The coefficient of land acquisition by rent (0.161) had a significant and positive relationship with output. This coefficient was significant at p<0.01 probability level and inferred that an increase in rent will lead to a corresponding increase in output of the respondents. The coefficient of communal ownership (0.040) was positive and significant at p<0.10 level. The positive sign of this coefficient implies that as the use of communal ownership increased, the output also increased. The result from this study therefore revealed existence of positive influence of communal ownership on output.

The coefficient of land inheritance (0.078) had a significant positive impact on output of women. This coefficient was significant at p<0.05 probability level and inferred that an increase in land by inheritance lead to increase in output of the respondents. This agrees with the finding of Bamire (2010) that majority of farmers in Nigeria gain access to land through inheritance for farming activities. The coefficient of educational level (0.494) had a significant and positive relationship with output. This coefficient was significant at p<0.01 probability and inferred that an increase in educational level would lead to an increase in the output of the women. This agrees with a priori expectation. The result support the findings of Ajah *et al.* (2014) that literacy contributes to better skill and knowledge in farming.

The coefficient of farming experience (-0.375) was negative and statistically significant at p<0.05 probability level. This result disagreed with a priori expectation. This means that increase in

farming experience will lead to a corresponding decrease in output. The coefficient of income (-0.301) was statistically significant at p<0.10 probability level and had negative relationship with output of the respondents. This implies that increase in the income level of the farmers will lead to the same decrease in output.

Table 6: Regression Results of factors influencing on Output of women Farmers

Inoutput	Coef.	Std.Err.	t	P>/t/
rent(X_1)	0.161	0.025	6.545	0.000***
purha (X_2)	0.004	0.020	0.203	0.840
comm (X_3)	0.040	0.023	1.777	0.078*
inherin (X_4)	0.078	0.029	2.647	0.009**
borr (X_5)	-0.006	0.026	-0.235	0.815
edu (X_6)	0.494	0.125	3.955	0.000***
exp (X_7)	-0.375	0.118	-3.181	0.002***
age (X_8)	0.170	0.233	0.729	0.468
income (X_9)	-0.301	0.171	-1.765	0.080*
Constant	16.781	2.264	7.413	0.000***
R-squared	0.614			
Adj R-squared	0.582			
F- ratio	19.43			

Source: Field survey, 2017 **** sig. at 1%; ** sig. at 5%; * sig. at 10%*

Research Hypotheses

To affirm the relationship the chi-square test is use to test the hypotheses:

$H0_1$: Land acquisition by rent is not significantly related to output

Decision Rule = Reject H_0 if X^2 Calculated > X^2 Tabulated.

The result in Table 7 showed that the computed chi-square statistic has a value of 72.489. In order to determine whether this is enough evidence to reject the hypothesis of independence, the significance value of the statistic is computed. The significance value is the probability that a random variate drawn from a chi-square distribution with 24 degrees of freedom is greater than 72.489. Since this value is less than the alpha level specified on the Test Statistics tab, we reject the hypothesis of independence at the 0.05 level. From the results, there is a relationship between the land acquisition by rent and output with value = 72.489, *df* = 24, *p* = 0.000. The null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) accepted.

Table 7: Chi-Square test on Relationship between Land Acquisition by Rent and Output

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	72.489	24	0.000
Likelihood Ratio	91.405	24	0.000
N of Valid Cases	120		

Source: Field survey, 2017

$H0_2$: Land acquisition by purchase is not significantly related to output

The computed chi-square statistic has a value of 23.073. In order to determine whether this is enough evidence to reject the hypothesis of independence, the significance value of the statistic is computed. The significance value is the probability that a random variate drawn from a chi-square distribution with 24 degrees of freedom is lesser than 23.073. Since this value is more than the alpha level specified on the Test Statistics tab, we accept the hypothesis of independence at the 0.05 level. From the results, there is no relationship between the land acquisition by purchase and output with value = 23.073, df = 24, p = 0.516. The null hypothesis (H_0 :) is accepted and the null hypothesis accepted.

Table 8: Chi-Square test on Relationship between Land Acquisition by Purchase and Output

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.073	24	0.516
Likelihood Ratio	24.985	24	0.407
N of Valid Cases	120		

Source: Field survey, 2017

$H0_3$: Land acquisition by communal is not significantly related to output

The computed chi-square statistic has a value of 37.696. In order to determine whether this is enough evidence to reject the hypothesis of independence, the significance value of the statistic is computed. The significance value is the probability that a random variate drawn from a chi-square distribution with 24 degrees of freedom is greater than 37.696. Since this value is less than the alpha level specified on the Test Statistics tab, we reject the hypothesis of independence at the 0.05 level. From the results, there is a relationship between the land acquisition by communal and output with value = 37.696, df = 24, p = 0.037. The null hypothesis (H_0) is rejected and the alternative hypothesis (H_1 :) accepted.

Table 9: Chi-Square test on Relationship between Land Acquisition by Communal and Output

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	37.696	24	0.037
Likelihood Ratio	42.871	24	0.010
N of Valid Ratio	120		

Source: Field survey, 2017

$H0_4$: Land acquisition by inheritance is not significantly related to output

The computed chi-square statistic has a value of 57.506. In order to determine whether this is enough evidence to reject the hypothesis of independence, the significance value of the statistic is computed. The significance value is the probability that a random variate drawn from a chi-square distribution with 24 degrees of freedom is greater than 57.506. Since this value is less than the alpha level specified on the Test Statistics tab, we reject the hypothesis of independence at the 0.05 level. From the results, there is a relationship between the land acquisition by inheritance and output with value = 57.506, *df* = 24, *p* = 0.000. The null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) accepted.

Table 10: Chi-Square test on Relationship between Land Acquisition by inheritance and Output

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	57.506	24	0.000
Likelihood Ratio	61.682	24	0.000
N of Valid Cases	120		

Source: Field survey, 2017

$H0_5$: Land acquisition by borrowing is not significantly related to output

The computed chi-square statistic has a value of 53.379. In order to determine whether this is enough evidence to reject the hypothesis of independence, the significance value of the statistic is computed. The significance value is the probability that a random variate drawn from a chi-square distribution with 24 degrees of freedom is greater than 53.379. Since this value is less than the alpha level specified on the Test Statistics tab, we reject the hypothesis of independence at the 0.05 level. From the results, there is a relationship between the land acquisition by borrowing and output with value = 53.379, *df* = 24, *p* = 0.001. The null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) accepted.

Table 11: Chi-Square test on Relationship between Land Acquisition by borrowing and Output

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	53.379	24	0.001
Likelihood Ratio	65.272	24	0.000
N of Valid Cases	120		

Source: Field survey, 2017

CONCLUSION

The result had showed that access to land by women is a serious problem which needs urgent attention. The result revealed that access to credit, price of land, local customs, private land tenure, communal land tenure, income, farming experience were the major determinants of women to have access to arable land which implies that those women who lack the financial wherewithal will be deprived access to land. This also reflects that local customs hinders women in accessing arable land in the study area. However, the mode of land acquisition revealed that most of the women access land through rent which is capital intensive. It was however recommended that the women arable farmers should be encouraged to access credit facilities from government agencies. This will enhance increased production, through acquiring sizeable acreage of land. Also, Local customs that are not favourable to the women in accessing land for farming operations should be abolished so as to have equal right with their male counterparts. There is also need for indepth research into land acquisition systems operational in Delta State for purposes of incorporation into the mechanisms for the public administration of land.

REFERENCES

Adegoroye A. A. and Adegoroye A. A. (2008). The Roles of Selected NGOs in Economic Empowerment of Rural Women in Ibadan Land. *Journal of Gender and Behavior* , 6 (2). Ife Center for Psychological Studies, Ile -Ife, Nigeria

Adeyelu A. A., Tijani S. A. and Oladipo F. O. (2013). Assessment of watermelon production in Iseyin Local Government Area, Oyo State, Nigeria. *Proceedings of the 27th annual conference of farm management association of Nigeria, held at Ilorin*, 26th – 30th August, 2013 pp 51 – 56.

Ajah E. A., Eyo E. O. and Ofem U. I. (2014). Analysis of credit worthiness and loan repayment among bank of agriculture loan beneficiaries (poultry farmers) in Cross River State, Nigeria. *International Journal of Livestock Production,* 5(9): 155 – 164.

Aribisola O. A. (2000). The African women special entrepreneur of the year 2000 and beyond. Workshop help in Lagos.

Ashimolowo O. R. and Ojebiyi W. G. (2009). Effect of peak – season agricultural activities on the educational performance of rural

children in Odeda Local Government Area of Ogun State. *Journal Hospitality, Jourism and Home Management* 2(1): 179 – 191.

Balogun O. L., Adeoye A., Yusuf S. A., Akinlade R. J. and Carim-Sanni A. (2012). Production efficiency of farmers under national fadama II project in Oyo State, Nigeria. *International Journal of Agricultural Management and Development* 2(1):11 – 24.

Bamire A. S. (2010). Effects of tenure and land use factors on food security among rural households in. the dry Savannas of Nigeria. African Journal of Food, Agriculture andDevelopment,10:1 http://www.thefreelibrary.com/African+Journal+of+Food+Agriculture+Nutrition+and+Development/2010/January/1-p51988 (accessed on 16, October 2015).

Belay K. and Manig W. (2004). Access to rural land in Eastern Ethiopia: Mismatch between policy and reality. *Journal of Agriculture and Rural Development in the Tropics and Subtropics* 105 (2):123-38.

Bidoli T. D., Njiforti P. P. and Akala. T. K. (2006). Effects of land rights on small farmers'land improvement technologies in Zango-Kataf local government area of Kaduna State, Nigeria. Department of agricultural economics and extension, faculty of agriculture, Ahmadu Bello University, Zaria, Nigeria.

Bugri J. T. (2008). Gender issues in Africa land tenure: Findings from a study of North-East Ghana. *Journal of the Ghana Institution of Surveyors*, 1(1): 21-35.

Deininger K. (2003). Land polices for growth and poverty reduction, World bank policy research report. Oxford, New York: Oxford University Press.

Duncan A. B. (2004). *Women in Agriculture in Ghana*. 2nd edition, Friedrich Ebert Foundation, Accra.

Duncan B. A. and Brants C. (2004). Access to and control over land from a gender perspective. A study conducted in the Volta Region of Ghana. Accra: The Printers Press.

Ebele A. (2003). Gender and economic development. A paper delivered to participants of senior executive course, No 25 of the National Institute for Policy and Strategic Studies, Jos.

Fajemirokun B. (2000). Land and resource rights: Issues of public participation and access to land in Nigeria. Potential decentralization models are discussed in C. Toulmin, "Decentralization and land tenure" in C. Toulmin & J. Quan (eds.), evolving land rights, policy and tenure in Africa, (London,). Pp. 229-245.

Famakinwa M., Agboola A. F., Alabi D. L. and Ogunjimi S. I. (2017). Factors Associated with Land Accessibility among Rural Dwellers in Osun State, Nigeria. *Middle-East Journal of Scientific Research* 25 (3): 528-535.

FAO (2002). Gender and access to land. *Land Tenure Studies 4*, FAO, Rome.

Gordon A. and Craig C. (2001). Rural non – farm activities and poverty alleviation in sub-saharan Africa social and economic development Department National Resources Institute, Policy Series p. 14.

International Land Coalition (ILC) (2012). How can women's land rights be secured? CSW Synthesis of the online discussion. Rome: ILC. Available online at: http://www.landcoalition.org/publications/csw -synthesis-online-discussion

Jemma H. (2001). The debate over rural land tenure policy options in Ethiopia: review of the post 1991 Contending Views. *Ethiopian Journal of Development Research* 23 (2): 35-84.

Leonard R. and Toulmin C. (2000). Women and land tenure: A review of the issues and challenges in Africa dry lands programme, IIED, London.

Magaji S. and Aliyu C. U. (2007). Micro credit and women empowerment in Bauchi State: The role of community banking .Issues in Economics, Vol. 2, Department of Economics, UDUS.

Marcela, V. (2010). Rural women as agents of change and champions of global food security, ecosoc United Nations Economic and Social Council. Retrieved on 22/7/2016 from www.fao.org/en.

Mohammed D. and Ndanitsa M. A. (2012). Optimal farm plan for the tree crops production under small scale irrigation in fadama areas of Niger State, Nigeria. *Savannah Journal of Agriculture* 7(1): 49 – 55.

Oladehinde G. J., Fatusin, A. F. and Daramola O. J. (2017). Land lccessibility among rural farmers in border settlements of Ogun State, Nigeria. *Pyrex Journal of Geography and Regional Planning 3 (1):1-10.*

Osondu C. K. and Ijioma, J. C. (2014). Analysis of profitability and production Determinants of fish farming in Abia State, Nigeria. *World Journal of Agricultural Science* 13(4).

Smith D. (2000). The spatial dimension of access to the rural non – farm economy Chatham UK National Resources Institute.

Tenaw S. K. M., Zahidul I., and Parviainen T. (2009). Effects of land tenure and property rights on agricultural productivity in Ethiopia, Namibia and Bangladesh. University of Helsinki Department of Economics and Management Discussion Papers no 33.

UNECA (2011). Background document on land policy in Africa: A framework to strengthen land rights, enhancing productivity and secure livelihoods. Addis Ababa Ethiopia.

Wannyeki L. M. (2003). Women and land in Africa: Culture. religion, and realizing women's rights. Zed Books Ltd., London.