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Women's Ownership of Agricultural Land on Farming Household Food Security in Ogun State, Nigeria

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Abstract

Women's ownership of agricultural land plays an important role in food and nutritional security. The study examined the effects of women's agricultural land ownership on the food security status of farming households in Ogun State, Nigeria. Multistage sampling procedure was used to select 120 farming households from the study area. Data was obtained using a well-structured questionnaire consisting of the 18 items of United States Department of Agriculture (USDA) food security questions. Analytical techniques used for data analysis were descriptive statistics and logit regression model. Findings from the study revealed that the mean age of the women was 38 years, married, with an average household size of 4 persons. Results of the land ownership status of the women revealed that only (10.8%) of the women owned farmlands with majority (51.8%) of them acquiring farmland by inheritance. Furthermore, analysis on the food security status of the farming households revealed that a greater proportion (55.8%) of the households were food insecure. Factors found to significantly influence the food security status of the farming households were women's land ownership ($p<0.01$), age ($p<0.01$), income ($p<0.05$), farming experience ($p<0.01$), educational level ($p<0.01$) and membership of cooperative society ($p<0.01$). The study therefore concludes that women's ownership of agricultural land significantly improves household food security in Ogun State. Therefore, it is recommended that women should be given equal right to farmland ownership like their male counterparts in order to reduce the burden of food insecurity particularly among rural households in Nigeria.

Introduction

Land as a major form of asset, is one of the most useful natural resources that generates the means of survival for people particularly in agriculturally dependent economies (FAO, 2020). It is also viewed as a primary source of wealth, social status and power which can serve as a collateral for credit and a means of holding savings for the future (Rehman *et al.*, 2019). Across several countries, there is a significant gender gap in ownership of land as landownership (sole or joint) is in favour of men than women. For instance, in Uganda, 33.9% own land solely compared to 7.9% of women. In Ghana, 28.2% of men own land compared to 8.1% of women. Also, in Kenya, 30.2% of all landowners are men, with a corresponding figure of 7.1% for women. Furthermore, a higher proportion of men own land than women (25.0% versus 8.1%) respectively in Tanzania (World Bank, 2020). In Nigeria, evidence from the National Demographic and Health Survey (NDHS, 2018), reveals that the percentage of women who own land alone or jointly

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was 12.0% compared to 38.0% of men. According to Food and Agriculture Organization (FAO, 2011), women's access to land plays a noteworthy role in a range of developmental issues, including poverty alleviation and food and nutritional security. This is because women occupy a central place in subsistence agricultural production and are accountable for 80.0% of agricultural production (FAO, 2020). Also, women play major roles in producing subsistence crops and livestock rather than cash crops which helps to improve household food security as well as the nutritional status of children (FAO, 2012; Kassie *et al*., 2014; Heckert *et al*., 2019; Amusan *et al*., 2021). However, in spite of the significant contributions of women to agricultural production, they are often faced with significant barriers to access to productive resources such as land, due to cultural, legal, and social constraints (Ransom *et al*., 2016; Amusan *et al*., 2021; Udemezue and Odia, 2021).

In Nigeria, men traditionally hold more land than women in terms of ownership structure. The majority of landowners inherited it from their families, with only 7.0% and 2.2% male and female landowners, respectively, reporting property purchases (NBS and FMARD, 2016). While there are legal and regulatory systems in some places that provides for other options of land acquisition, such as renting/leasing, share cropping, and buying system, customary law and social norms undercut these formal guarantees, especially for women.

The traditions and beliefs of masculine gender entitlement to ancestral land ownerships have excluded the rights of women, as a greater proportion of them barely own land and when they do, their possessions tend to be smaller and less rich in fertility than those of men. This reduces their ability to use land as collateral which makes them to be severely disadvantaged in accessing credit thereby limiting their ability to purchase essential inputs, such as seeds, tools, and fertilizers, or invest in irrigation and land improvements (Ransom *et al*., 2016). It has been established by previous studies that gender inequality in land ownership is linked to high levels of nutrition insecurity (Quisumbing and McClafferty, 2006; Ragasa *et al*., 2012; Ruel *et al*., 2018). Additionally, research by Harris-Fry *et al*. (2020), highlights that gender-based inequities within agriculture can also limit the sector's potential to provide nutritious diets and improve nutrition outcomes.

Several empirical studies by (Otunaiya and Ibidunni, 2014; Oyekale *et al*., 2017; Haddabi *et al*., 2019; Aboaba *et al*., 2020; Wudil *et al*., 2023) have examined the determinants of food security among farming households in Nigeria. However, studies examining the link between women agricultural land ownership and food security particularly among farming households in Ogun State is scanty. Studies by (Adepoju and Adewole, 2020; Tossou, 2022), only examined the association between women's land right and food security status of farming households in Oyo and Edo States, Nigeria. Hence, this study targeted to extend this scope of knowledge to farming households in Ogun State, Nigeria. Therefore, in the light of the foregoing, the study aimed in the study area to: describe the socio-economic characteristics of the rural women in the farming households; investigate the land ownership status of the rural women and their system of land acquisition; determine the food security status of the farming household and examine the relationship between women's agricultural land ownership and food security of the farming household in the study area.

Materials and Methods

Study area

The study was carried out in Ogun State, Southwest Nigeria. Ogun State, famously known as the "Gateway State," is bounded in the south by Lagos State and in the north by Oyo State. Ogun State has a landmass of approximately 16,409 square kilometres (NBS, 2021) and an estimated population of 7,221,827 people (NPC, 2021). The climate in the region is classified as tropical wet and dry or savanna, with an average annual temperature of 29.34℃ (84.81℉), slightly lower than Nigeria's overall averages. The predominant occupation of the inhabitants of the State is farming while they engaged in other activities like civil service, transport services, artisanship and trading.

Source of data

Data were collected from the respondents with the aid of a structured questionnaire. The questionnaire was designed to obtain information on respondents'

socio-economic characteristics such as age, marital status, household size, monthly income etc. Also, information about the respondents' land ownership status, method of land acquisition as well as household's food security status were obtained using a questionnaire.

Sampling technique

A multi-stage sampling procedure was employed to select 120 rural women from the study area. Stage I involved the random selection of two zones (Abeokuta and Ilaro) out of the four Agricultural Development Project (ADP) zones in Ogun State. Stage II involved the selection of five (5) blocks from the two zones using proportionate sampling technique. Specifically, three (3) blocks were selected from Abeokuta Zone (which had 6 blocks), and two (2) blocks were selected from Ilaro Zone (which had 4 blocks). Stage III involved the random selection of two villages from each block to make a total of 10 villages. This approach ensured equal representation of each block in the sample. Stage (IV) involved the use of systematic random sampling technique to select twelve (12) rural households per village by counting every third household at regular intervals to give a total of 120 rural households. However, since the focus of the study was on women's land ownership, one woman from each farming household was purposively selected as the target audience for the study.

Analytical techniques

The analytical tools that were used for this study were Descriptive statistics and Logit regression model.

Descriptive Statistics: Descriptive statistics such as mean, frequencies, percentages, pie and bar charts were used to describe the socio-economic characteristics of the women farmers, their land ownership status as well as the land ownership systems used in the study area.

Logit Regression model: Logit regression model was used to estimate the effect of women's agricultural land ownership on the food security status of the farming households in the study area. This model described the relationship between a dichotomous dependent variable and a set of explanatory variables (predictors) (Allison, 2012). Since the dependent variable, food security status of the households classified as food secure or food insecure households is a dichotomous variable, a binary logistic regression model was therefore adopted for the study. This model has been employed by several other studies on determinants of food security in Nigeria (Oyebanjo *et al*., 2013; Ayele, 2020; Kabir *et al*., 2020).

Therefore, following Kabir *et al*. (2020), the binary logit regression model is specified as:

$$Y = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \alpha_6 X_6 + \alpha_7 X_7 + \alpha_8 X_8 + \alpha_9 X_9 + e \quad (1)$$

Where,

Y = Household food security status (1 = food secure, otherwise = 0)

X_1 = Women's land ownership status (own land = 1, otherwise = 0)

X_2 = Monthly income (Naira)

X_3 = Educational status of the woman (Educated = 1; otherwise = 0)

X_4 = Household size (number of people living in the household)

X_5 = Age of the woman (years)

X_6 = Farming experience of the woman (years)

X_7 = Marital status of the woman (Married = 1, otherwise = 0)

X_8 = Access to extension agents (yes = 1, otherwise = 0)

X_9 = Cooperative membership (Yes = 1, otherwise = 0)

e = Error term

Measurement of household food security

The food security status of the farming households was determined using the USDA 18 items Food Security Module. The USDA method grouped households using a designed food security scale that ranges between 0 and 10 for households without children (>17 years old) and between 0 and 18 for households with children (<17 years old). The r espondent indicated whether a given statement was ne ver true, often true, or sometimes true for a given hous ehold in the questionnaire. A score of 1 was assigned to any household that responded with "often true" or "sometimes true" to any of the food insecurity questions, while a response of "never true" was assigned a score of 0. Households with a score ranging from 0 to 1 were classified as food secure, between 2 and 4 were categorized as food insecure without hunger, 5 to 8 were classified as food insecure with moderate hunger, while households with a score above

9 were classified as food insecure with severe hunger. For further analysis, the four categories were collapsed into two main categories to form a binary variable. Households that were food secure or food insecure with mild hunger were classified as "food-secure households" and coded as "1," while households that were food insecure with moderate or severe hunger were classified as "food-insecure households" and coded as "0."

Results and Discussion

Socio-economic characteristics of the respondents

The result in Table 1 reveals that the mean age of the respondents was 38 years. This implies that majority of the women were young and within their productive age. Similar results were obtained by Akinbode and Hamzat (2017), and Tossou (2022), who noted that women in rural farming households were within the economically active age. As regards their marital status, findings revealed that 45.0% and 30.0% of the women were married and single, respectively, while 15.8% were widowed and 9.2% were divorced with a mean household size of 4 persons. Also, majority (89.2%) of the rural women had at least one form of formal education or the other with about 25.0% of the women having primary education, while about 40.0% and 24.2% of them had both secondary and tertiary education respectively. This implies that education is a social capital, which could impact positively on a household's ability to take good and well–informed production and nutritional decision. The findings of this study agree with the findings of Akinbode and Hamzat (2017), who reported that a higher percentage of rural women in Ogun state had formal education. Furthermore, mean farming experience among the women farmers was 11 years with an average monthly farm income of ₦50,400. Furthermore, results in Table 1 also reveals that (49.2% and 70.8%) of the respondents had access to extension services and were members of a cooperative society respectively.

Land Ownership Status of the Respondents

The result in Fig. 1 showed that a higher proportion (89.2%) of the women farmers had no of the ownership of agricultural land while very few (10.8%) respondents reported ownership of farmland.

Table 1: Distribution of the respondents by their socio-economic characteristics

Variables	Frequency (n)	Percentage (%)	Mean
Age (Years)			
< 30	37	30.8	37.57
30 – 39	34	28.3	
40 – 49	40	33.3	
50 – 59	4	3.3	
> 60	5	4.2	
Marital Status			
Single	36	30.0	
Married	54	45.0	
Divorced	11	9.2	
Widowed	19	15.8	
Household Size			
1 – 5	111	92.5	4.29
6 – 10	9	7.5	
Educational level			
No formal	13	10.8	
Primary	30	25.0	
Secondary	48	40.0	
Tertiary	29	24.2	
Farming Experience			
1 – 10	62	51.7	11.47
11 – 20	43	35.8	
21 – 30	10	8.3	
> 30	5	4.2	
Monthly Farm Income			
< 50,000	88	73.3	N50,400
50,001 – 100,000	22	18.3	
100,001 – 150,000	9	7.5	
> 150,000	1	.8	
Access to extension agent			
No	61	50.8	
Yes	59	49.2	
Members of a cooperative society			
No	35	29.2	
Yes	85	70.8	

Field survey, 2024

This implies that a higher percentage of women in the farming households do not own land for farming. This could be due to culture and tradition which prevents women from owning lands. In addition, Nigeria is a patriarchy society where men are given more preference in ownership of productive resources such as land. The outcome of this findings is in tandem with similar studies and other existing reports (NDHS, 2018; Rehman *et al.*, 2019; World bank, 2020; Tossou, 2022), which indicated that a higher proportion of women do not own lands.

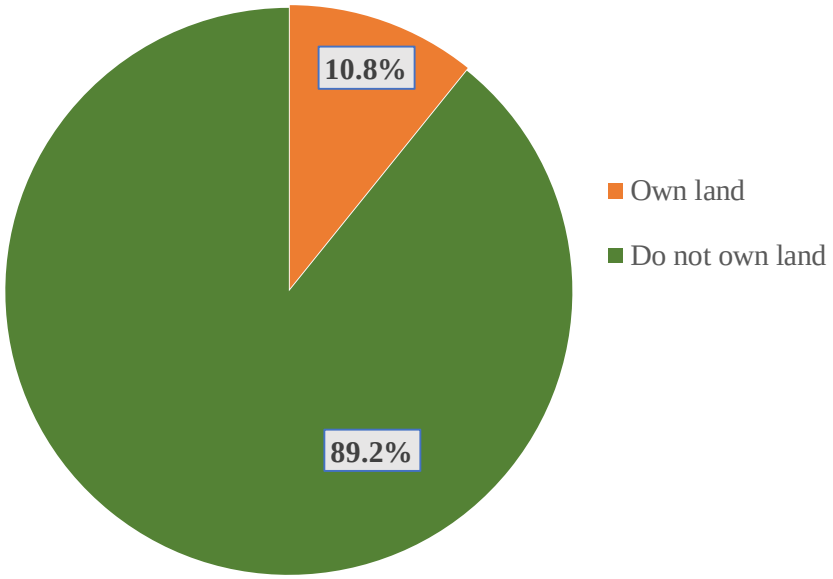


Fig. 1: Women's land ownership status

Method of Land Acquisition by Respondents

Result in Table 2 shows that among women that own land, about 38.5% of the respondents claimed they own by inheritance, purchase (30.8%), gift (15.4%) and rent (15.4%). This finding agrees with Tossou (2022), who reported that 51.8% of women owned land through inheritance.

Table 2: Distribution of women land owners by their mode of acquisition

Land Acquisition	Frequency	Percentage (%)
Inheritance	5	38.5
Purchase	4	30.8
Gift	2	15.4
Rent	2	15.4
Total	13	100.0

Source: Field survey, 2024

Households' food security status

The result of the analysis in Table 3 revealed that most (55.8%) of the rural households were still food insecure. This implies that food insecurity is still a major problem existing particularly among rural households in Ogun State. The outcome of this findings is similar with the findings of Oyekale *et al*. (2017) and Aboaba *et al. (*2020), who reported that food insecurity is still a major problem among farming households in Ogun State.

Table 3: Food Security Status of the Farming Households

Food Security Status	Frequency	Percentage (%)
Food secure	53	44.2
Food insecure	67	55.8

Field survey, 2024

Relationship between women land ownership and household food security status

Table 4 reveals the result of the logit regression of the relationship between women farmland ownership and household food security status. The result of the binary logit regression in Table 4 shows that the log ratio chi-square was significant at 1% ($p<0.01$) level which shows that the overall model is significant at 1%. The significant explanatory variables in the regression model were women's land ownership

Table 4: Determinants of Household's Food Security

Variables	Coefficient	Std. Error	*Z* – value
Women's land ownership	15.226***	4.073	.000
Age	-0.708***	.230	.002
Monthly income	5.020e-5**	1.971e-5	.011
Farming experience	0.642***	.208	.002
Household size	0.632	.393	.107
Marital status	13.767	3.770	.119
Educational level	9.404***	2.980	.002
Access to extension agent	0.898	.998	.368
Membership of a cooperative society	6.908***	2.010	.001
Constant	0.4337187	2.579614	0.28
Log likelihood	-56.66132		
Prob. > chi^2	0.0024		
LR chi^2(13)	23.59		
Number of observation.	120		

Field survey, 2024

**** significant at 1% level, ** significant at 5% level, * significant at 10% level*

($p<0.01$), age ($p<0.01$), income ($p<0.05$), farming experience ($p<0.01$), educational level ($p<0.01$) and membership of cooperative society ($p<0.01$).

Women land ownership was positive and significant at ($p<0.01$) which implies that households where women own land are more likely to be food secure compared to households where women do not have own land. This is because when women who own land have a tendency of producing wide variety of foods and spending a large proportion of their revenue on food expenditures thus, improving their household food security status as well as nutritional status of children. The findings agree with FAO (2012), Kassie *et al*. (2014), Heckert *et al.* (2019), Asitik and Abu (2020) and Amusan *et al*. (2021), who reported that women who have access to arable land are less likely to have households suffering from severe or moderate hunger.

The coefficient of age was negative and significant at ($p<0.01$) which implies that increase in the age of the women will lead to a decrease in the food security status of the household. This could be attributed to the fact that older women may face physical limitations such as health challenges that reduce their ability to engage in labour-intensive agricultural activities. This decline can result in lower crop yields and reduced overall productivity. Additionally, older women may be less inclined to adopt modern farming techniques or innovative approaches to agriculture due to a preference for traditional methods, which might be less efficient or productive consequently reducing the household food security status. This result is in line with the findings of Aboaba *et al*. (2020) who reported a negative relationship between age and household food security status.

Monthly income is positive and significant ($p<0.05$) on household food security implying that an increase in the monthly income of the women will lead to an increase in the food security status of the rural household. This is because as income increases, women tend to increase their expenditure on diverse food, leading to better nutrition and improved health. Furthermore, rural women can also invest the income realized from the sale of surplus farm produce on high-quality seeds, fertilizers, pesticides, and other inputs that improve crop yields which in turn improves household access to food. This agrees with Okwoche *et. al.* (2012) who reported that an increase in income increases the likelihood of households being food secured.

Farming experience was also positive and significant ($p<0.01$) on household food security. This indicates that an increase in the farming experience of the women will lead to an increase in the

food security status of the farming households. This is because increase in farming experience among rural women enhances their ability to make informed and effective decisions regarding agricultural practices, which improves household food security. This result is in line with the findings of Oluyole *et al*. (2009); Haddabi *et al.* (2019), who reported that greater farming experience can lead to improved agricultural practices, higher yields, and better management of agricultural resources, ultimately contributing to enhanced food security.

The coefficient of education was positive and significant at ($p<0.01$) level of probability, implying that households where the women have formal education are more likely to be food secured compared to households where the woman is uneducated. This is because educated women are more likely to optimize the use of resources like land, water, and labour, leading to increased productivity and food availability within the household. Additionally, educated women are often more entrepreneurial and may diversify their income sources beyond traditional farming. They may engage in off-farm employment, small-scale businesses, or rural enterprises, all of which contribute to greater household income and improved food security. This result is in line with the findings of Haddabi *et al.* (2019), who stated that increase in years of formal education level increases the likelihood of household to be food secured.

Membership of cooperative society was positive and significant ($p<0.01$) on household food security. This suggests that household where women belong to a cooperative society are more likely to be food secure. This may be attributed to the fact that cooperatives may offer financial services such as savings, credit, and insurance, which can provide women farmers with the capital needed to invest in farm improvements, acquire equipment, or manage risks. This financial support can lead to better farming practices and increased food production, thereby improving household food security. This result is in line with the findings of Otunaiya and Ibidun (2014), who noted that being a member of a cooperative society would enhance the likelihood of farming households being food secured

Conclusion and Recommendation

It can be concluded from the study that women are discriminated in ownership of productive resources as findings from the study reveals that a greater proportion of women in farming household in Ogun State do not own agricultural land for farming purposes. Findings from the study further reveals that food insecurity was prevalent among the rural households. Factors found to significantly affect the food security status of the farming households were women's land ownership ($p<0.01$), age ($p<0.01$), income ($p<0.05$), farming experience ($p<0.01$), educational level ($p<0.01$) and membership of cooperative society ($p<0.01$). Therefore, on the basis of this findings, the study recommends that laws which protects women's right to land ownership should be enforced in order to reduce gender inequality in agriculture which has an overall effect on food security status of the households.

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