

## **EFFECT OF GENDER EMPOWERMENT IN AGRICULTURE ON FOOD SECURITY OF FARMING HOUSEHOLDS IN OGUN STATE, NIGERIA**

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### **ABSTRACT**

*Women play an important role in agricultural growth in developing countries, but they face persistent obstacles and economic constraints limiting further inclusion in agriculture. The Women's Empowerment in Agriculture Index (WEAI) measures the empowerment and inclusion of women in the agriculture sector and can also be used more generally to assess the state of empowerment and gender parity in agriculture and to identify key areas in which empowerment needs to be strengthened. The study adopted the abbreviated version of the WEAI (A-WEAI) and documented the effect of Women empowerment on food security in Ogun state, Nigeria. Primary data were collected using multi-stage random sampling technique from a cross section of 206 farming households during the 2016 production season in Ogun State. Data were analysed using descriptive statistics and the A-WEAI model. The food security score was generated using the USDA approach While Ordered Probit was used to assess the effect of women empowerment on household food security. Households were classified as having high food security (5.7%), marginal food security (17.6%), low food security (35.8%) and very low food security (40.9%). The Ordered Probit model as specified revealed that gender ( $p < 0.05$ ), middle age group ( $p < 0.10$ ), work achievement ( $p < 0.10$ ) and empowerment ( $p < 0.10$ ) significantly improve the food security status of farming household in the study area. This study therefore recommends that efforts should be made through gender empowerment of men and women to improve farming households' food security status in order to achieve the sustainable development goals.*

**Keywords:** *Gender, A-WEAI, farming households, food security, Ordered Probit*

### **INTRODUCTION**

Agriculture is closely linked to food security, being a source of food and nutrients, and an important source of income (Quisumbing and Pandolfelli, 2010). Women are more active as economic agents in Africa than anywhere else in the world as they perform the

majority of agricultural activities, own a third of all farms and, in some countries, make up some 70% of employees (Mizrahi *et al.*, 2015). Through their income generating activities, they are central to the household economy as well as the welfare of their families, and they play an unacknowledged leadership role in their

communities and nations. Yet across Africa and the rest of the world, there is a wide gap between potential capability and reality. In sizable number of countries, women often face an array of barriers to achieving their full potential, ranging from restrictive cultural practices to discriminatory laws and highly segmented labour markets (Quisumbing and Pandolfelli, 2010; Seymour, 2017). Eliminating gender inequality and empowering women could raise the productive potential of one billion Africans, delivering a huge boost to the continent's development potential (Food and Agricultural Organization, 2011).

Overcoming gender-based constraints to improving food security requires paying greater attention to the ways in which men and women in the same households interact in agricultural production, which will go beyond simplistic designation of the primary decision-maker. Asset ownership and decision-making within households often involve elements of both individual and joint control (Johnson *et al.*, 2016).

Women in rural areas contribute significant roles to food production and also play key roles in maintaining food security: as food producers and agricultural entrepreneurs who dedicate their own time, income and decision-making to maintain food and nutritional security of their households and communities; and ensuring the stability of food supplies in times of economic hardship (Diouf, 2012; Thomas *et al.*, 2013). Despite their contributions in ensuring wellbeing in rural areas, rural women in Nigeria, are considerably more disadvantaged than their male counterpart because of an explicit gender bias in

access to productive resources such as land allocation, access to credit, agricultural inputs, technologies and extension services and access to rural organizations are some of the stumbling blocks to women's effective participation in the agricultural sector (Food and Agricultural Organization, 2011).

Unlike men, they face a number of constraints and obstacles which disempower them, including limited access to resources, socio-cultural inhibitions and alternative demands on their time from childcare and other domestic duties (World Bank, 2001). A woman who is empowered to make decisions regarding what to plant and what (and how many) inputs to apply on her plot will be more productive in agriculture (Food and Agricultural Organization, 2011). An empowered woman will also be better able to ensure her children's health and nutrition, in no small part because she is able to take care of her own physical and mental well-being (Smith *et al.*, 2005).

The Abbreviated Women Empowerment in Agriculture Index (A-WEAI) is an aggregate index that shows the degree to which women are empowered in their households and communities and the degree of inequality between women and men in the household. As detailed in Alkire *et al.* (2012), A-WEAI is an aggregate index comprising two sub-indexes: the five domains of empowerment (5DE) and the gender parity index (GPI). The 5DE assesses the degree to which women are empowered in five domains which are agricultural production decisions, access to, and decision-making power over, productive resources, control over use of income, leadership roles within the community and time allocation. The

5DE is constructed from individual-level empowerment scores, which reflect each person's achievements in the five domains as measured by 6 indicators, with their corresponding weights. Each indicator measures whether an individual has surpassed a given threshold or has adequate achievement with respect to each indicator. A woman is defined as empowered if she has adequate achievements in four of the five domains or has achieved adequacy in 80 percent or more of the weighted indicators.

In view of the aforementioned research gaps, this study will therefore seek to analyse the effect of gender empowerment on food security of farming households in Ogun State.

This study therefore attempted to provide answers to the following research objectives:

1. Compute the A-WEAI for rural farm households in Ogun State.
2. Evaluate the food security status in the farming households
3. Analyse the effect of gender empowerment in Agriculture on farming household food security status in Ogun State.

## **RESEARCH METHODOLOGY**

### ***Description of the Study Area***

This study was carried out in Ogun State, Nigeria. Ogun State was created on February 3<sup>rd</sup>, 1976 from the old western region. It lies within latitude 6<sup>o</sup>N and 8<sup>o</sup>N and longitude 2<sup>o</sup>E and 15<sup>o</sup>E. It is bounded on the west by the republic of Benin, on the East by Ondo State, on the north by Oyo State and on the South by Lagos State. The state is approximately 1.9 percent (i.e. 16,762 km) of Nigeria's 923,219km land area; and located in the moderately hot, humid tropical climatic

zone of south western Nigeria. There are two distinct seasons in the state – the rainy season and dry season and also two main types of vegetation – tropical rain forest and derived savannah.

### ***Sampling Technique***

The target population for this study was farming households. Multi-stage sampling technique was used in selecting respondents for the study. This was accomplished by using the Agricultural Development Programs (ADP's) division into zones, blocks and cells. The First stage involves random selection of two zones namely Abeokuta and Remo zones, at the second Stage, two blocks were randomly selected from each zone: Remo (Someke and Obafemi) and Abeokuta (Ilewo and Ilugun) this selection were made in proportion to size. In the third stage, 3 cells were randomly selected per block (Ilugun, Adu, Alabata, Egbatedo, Ibara-orile, Idera, Ilewo-orile, Isaga-orile, Kajola, Kila, Kobape, Olodo) and at the last Stage, 18 households were selected per cell and it gave a total of 216 out of which 206 households gave complete information that were used for the analysis.

### ***Sources and Types of Data***

Primary data were collected for this study. The data were obtained with the aid of structured questionnaire using interview schedule with the respondents. Data were obtained on socio economic characteristics, production activities; women empowerment level, livelihood activities, among others.

### ***Analytical Technique***

This study adopted AWEAI as well as descriptive statistics. Following Alkire *et al.* (2012), the domains, indicators, description and weights adapted for the A-

WEAI is in Table 1. The United States Department of Agriculture (USDA) approach was used to assess the household food security status. The procedure that determines a household scale fundamentally depends on the household responses to some structured survey questions. One of the advantages of this

model is its ability to classify households into four food security status categories and to generate a food security scale (Bickel *et al.*, 2000). Ordered Probit model was used to analyse the effect of gender empowerment on household food security in the study area.

**Table 1: The Domains, Indicators, Description, and Weights in the A-WEAI**

Domains	Indicator	Description	Weight
Production	Input in productive Decisions	Sole or joint decision-making over food and cash crop farming, livestock and fisheries.	1/5
Resources	Ownership of assets	Sole or joint ownership of land and assets (e.g. large and small livestock, fish pond, farm equipment, house, non-agricultural land and means of transportation)	2/15
	Access to and decisions on credit	Access to and participation in decision making over credit.	1/15
Income	Control over use of Income	Sole or joint control over income and expenditures.	1/5
Leadership	Group membership	Respondent is an active member in at least one economic or social group	1/5
Time	Workload	Worked more than 10.5 hours in previous 24 hours	1/5

**Source: Adapted from Alkire *et al.*, 2012**

**Computing the A-WEAI index**

Following the structure of the Adjusted Headcount measure of Alkire and Foster (2011)

(i) Identification of the disempowered

$$c_i = w_1 I_{1i} + w_2 I_{2i} \dots w_d I_{di} \dots \dots \dots (1)$$

Where

$I_{di} = 1$  if the person  $i$  has an inadequate achievement in indicator  $d$  and  $I_{di} = 0$  otherwise

$w_d =$  weight attached to indicator  $i$

(ii) Computing 5DE

The first component is called the disempowered headcount ratio ( $H_p$ ): which is the proportion or incidence of

individuals whose share of weighted inadequacies is more than  $k$

$$H_p = \frac{q}{n} \dots \dots \dots (2)$$

Where

$q =$  number of individuals who are disempowered

$n =$  total sample.

The second component is called the intensity (or breadth) of disempowerment ( $A_p$ ). It is the average inadequacy score of disempowered individuals and can be expressed as follows:

$$A_p = \frac{\sum_{i=1}^q c_i(k)}{q} \dots \dots \dots (3)$$

Where

$c_i(k)$  = censored inadequacy score of individual  $i$

$q$  = number of disempowered individuals.  $M_0$  is the product of both:  $M_0 = H_p \times A_p$ .

Finally, 5DE is easily obtained:

$$5DE = 1 - M_0 \dots\dots\dots(4)$$

**Gender Parity Index**

The first component is the proportion of gender parity inadequate households that is the percentage of women who lack gender parity relative to their male household counterparts (HGPI):

$$H_{GPI} = \frac{h}{m} \dots\dots\dots(5)$$

Where

$h$  = number of households classified as lacking gender parity

$m$  = total of dual-adult households in the sample.

The second component is called the average empowerment gap (IGPI):

$$I_{GPI} = \frac{1}{h} \sum_{j=1}^h \frac{c_j^i(k^M) - c_j^i(k^W)}{1 - c_j^i(k^M)} \dots\dots\dots(6)$$

Where

$c_j^i(k^M)$  = censored inadequacy scores of the primary man living in household  $j$

$c_j^i(k^W)$  = censored inadequacy scores of the primary woman living in household  $j$

$h$  = number of households that are lacking gender parity.

GPI is computed as follows:

$$GPI = 1 - (H_{GPI} \times I_{GPI}) \dots\dots\dots(7)$$

$$AWEAI = 0.9(5DE) + 0.1(GPI) \dots\dots\dots(8)$$

**Ordered Probit model**

The ordered Probit model is suitable for developing models with a categorical

dependent variable. The model was used to analyse the effect of women empowerment on food security status of farm households in the study area. The Ordered Probit model is usually motivated in a latent (i.e., unobserved) variables framework. Following Williams (2014) the model is specified as

$$Y_i^* = \beta_i^* X_i + \varepsilon_i^* \dots\dots\dots(9)$$

where  $Y_i^*$  is a latent variable measuring the food security status of  $i^{th}$  household  $X_i$  is a (kx1) vector of observed non-random explanatory variables;  $\beta$  is a (kx1) vector of unknown parameters;  $\varepsilon_i$  is the random error term, which is assumed to be normally distributed with zero mean and unit variance.

In the ordered probit model, there is an observed ordinal variable,  $Y$  which is a function of another variable,  $Y^*$ , that is not measured.  $Y^*$  is a continuous, unmeasured latent variable, whose values determine what the observed ordinal variable  $Y$  equals.

The continuous latent variable  $Y^*$  has various threshold

$$Y_i = 0 \text{ if } -\infty < Y_i^* \leq k_1$$

$$Y_i = 1 \text{ if } k_1 < Y_i^* \leq k_2$$

$$Y_i = 2 \text{ if } k_2 < Y_i^* \leq k_3$$

$$Y_i = 3 \text{ if } k_3 < Y_i^* \leq \infty$$

Where, the threshold values  $k_1$ ,  $k_2$  and  $k_3$  are unknown parameters to be estimated. The parameters of the model are estimated by the method of maximum likelihood. This method is used for estimation of various status of the food security at four levels.

**Table 2: Independent Variables used for the Ordered Probit Model and their Measurement**

<b>Variable</b>	<b>Measurement</b>
Youth	1 for household head less than 35years, 0 otherwise
Middle age	1 for household head ages 35-60years, 0 otherwise
Aged	1 for household head above 60years, 0 otherwise. Aged was dropped as the reference category for age
Gender	1 if female, 0 otherwise
Single	1 if single, 0 otherwise
Single parent	1 if a single parent, 0 otherwise
Married	1 if married, 0 otherwise: married category was dropped as the reference category
Household size	Number of Household members
Highest education	Years of formal education
Years of experience	Years of farming experience
Farm size(ha)	Size of farmland in ha
Participation in off-farm activity	1 for participation in off farm activity, 0 otherwise
<b>Empowerment Indicators</b>	
Group membership	1 if individual has adequate achievement (member of a group), 0 otherwise
Achievement in workload	1 if individual has adequate achievement (worked for less than 10.5hrs in the previous 24hrs) 0 otherwise
Participation in production decision	1 if individual has adequate achievement (participate solely or jointly in production decision), 0 otherwise
Use of income	1 if individual has adequate achievement( participate solely or jointly in use of income), 0 otherwise
Asset ownership	1 if individual has adequate achievement (owns a major asset) 0 otherwise
Access to and use of credit	1 if individual has adequate achievement (had access and use credit), 0 otherwise.
Empowerment score	Weighted sum of achievement of empowerment across 6 indicators comprising the A-WEAI

## RESULTS AND DISCUSSION

### *Socio-economic characteristics*

In order to fully understand the household food security status in the study area, the socioeconomic and demographic characteristics of members of the household were analysed. The descriptive analysis of the socioeconomic characteristics of households' members was shown in Table 3 and the result was disaggregated by gender in order to suggest the striking differences between male and female members of the household as well as their similarities. The proportion of the married members in the study area was found to be higher among

female members than male members. The difference might be as a result of cultural factors which suggest early marriage for females. The average age of members of the sampled households in the study area indicates that a higher proportion of the members sampled were in their active and productive years. The higher proportion of male members sampled have formal education this may be as a result of easy access to schools coupled with the free education scheme embarked on by the state government at the primary and secondary education level in the study area. Also, the average years of farming experience is high among the male

members compared to their female counterparts. This is evidenced by 23 years among male and 18 years among female members this may be as a result of their masculine nature and also their ability to participate in various sections of the agricultural activities. The low level of

credit use among rural households as revealed in Table 3 may be as a result of a high level of non-membership in cooperative societies. A high percentage of females (83.7%) do not use credit and are not members of cooperative society compared to their male counterparts.

**Table 3: Distribution of Members by Socioeconomic Characteristics**

	Women		Men		Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
<b>Age(years)</b>						
≤ 20	6	3.1	4	1.7	10	2.4
21-30	47	24.4	33	14.4	80	19.0
31-40	64	33.2	63	27.5	127	30.1
41-50	28	14.5	60	26.2	88	20.9
51-60	31	16.1	33	14.4	64	15.2
>60	17	8.8	36	15.7	53	12.6
Mean	40.5		45.7		43.4	
<b>Years of experience</b>						
<20	138	71.5	122	53.3	260	61.6
21-40	44	22.8	88	38.4	132	31.3
41-60	11	5.7	17	7.4	28	6.6
>60	0	0.0	2	0.9	2	0.5
Mean	18.1		22.8		20.6	
<b>Education</b>						
No formal education	64	33.2	48	21	112	26.5
Primary	86	44.6	93	40.6	179	42.4
Secondary	38	19.7	68	29.7	106	25.1
OND/NCE	5	2.6	11	4.8	16	3.8
BSc./HND	0	0.0	9	3.9	9	2.1
<b>Marital Status</b>						
Married	173	89.6	193	84.3	366	86.7
Single	10	5.2	28	12.2	38	9
Widowed	10	5.2	8	3.5	18	4.3
<b>Use of Credit</b>						
Yes	27	16.3	53	25.9	80	21.6
No	139	83.7	152	74.1	291	78.4
<b>Member of Cooperative</b>						
Member	24	12.4	36	15.7	60	14.2
Non-member	169	87.6	193	84.3	362	85.8

Source: Computed from Field Survey, 2016

**A-WEAI Result**

The A-WEAI for Ogun State is 0.667. It is a weighted average of the 5DE sub index value of 0.502 and the GPI sub index value of 0.544 (Table 4). The 5DE for Ogun State shows that 22.9 percent of women and 58.1 percent of men are empowered. The 77.1 percent of women who are not yet empowered have an average inadequacy score of 41.2 percent. Thus, women’s 5DE is 68.1 percent. The average inadequacy share among the 41.9 percent of men who are still disempowered is 57 percent. So men’s 5DE is  $1 - (0.238) = 0.762$ . The GPI for Ogun State shows that 20.5 percent of women have gender parity

with the primary males in their households. Of the 79.5 percent of women who are less empowered, the empowerment gap between them and the males in their households is quite large which 57.3 percent is. Thus, the overall GPI is 0.544. The A-WEAI value is lower than what was reported in the pilot study in South-Western Bangladesh which was 0.762 with a weighted average of the 5DE sub index value of 0.746 and the GPI sub index value of 0.899 and in the Western Highlands of Guatemala is 0.702. It has a weighted average of the 5DE sub index value of 0.690 and the GPI sub index value of 0.813 (Alkire *et al.*, 2013).

**Table 4: Ogun State A-WEAI**

<b>Indexes</b>	<b>Women</b>	<b>Men</b>
Disempowered head count(H)	77.1%	41.9%
Average inadequacy score(A)	41.2%	57%
Disempowerment index(M0)	0.31	0.238
5DE index(1-M0)	0.681	0.762
Number of observations	166	205
Percentage of data used	80.5%	99.5%
Percentage of women with no gender parity(HGPI)	79.5%	
Average empowerment gap(IGPI)	57.3%	
Gender parity index	0.544	
Number of women in dual household	142	
Percentage of data used	68.9%	
AWEAI	0.667	

**Source: Computed from Field Survey, 2016**

**Household Food Security Status**

The food security results generated using the USDA (2000) profiled households into food security status based on 18 food security items, 10 adult referenced items and 8 child-referenced items. The results on Table 5 showed that few of the farming households (5.7%) have high food security, 17.6% of farm households have

marginal food security, 35.8% have low food security and 40.9% have very low food security. This percentage of being food secure is lesser compared with Fakayode *et al.* (2009) which indicated that 12.2% of the country’s households were food secured and 87.8% were food insecure.

**Table 5: Estimates of Food Security Status**

<b>Food security status</b>	<b>Frequency</b>	<b>Percentage</b>
High food security	11	5.7
Marginal food security	34	17.6
Low food security	69	35.8
Very low Food security	79	40.9
Total	193	100

**Source: Computed from Field survey; 2016**

### *Effect of Gender Empowerment on Household Food Security*

The parameters of the Ordered Probit model were estimated by maximum likelihood estimation. Estimation results are shown in Table 6 for the food security model. The standardized coefficient estimates are shown, a goodness-of-fit statistic, the adjusted log likelihood index ratio, is also presented in Table 6 for the model.



**Table 5: Effects of Gender Empowerment on Food Security Status of Farming Households in Ogun State**

Variables	Coefficient	Z-value	High Food security		Marginal food security		Low Food security		Very low Food Security	
			Marginal effect							
			Pr= 0.0165		Pr=0.1047		Pr=0.4728		Pr=0.4060	
			Coefficient	Z-value	Coefficient	Z-value	Coefficient	Z-value	Coefficient	Z-value
Youth	-0.2197	-0.59	-0.0075	-0.66	-0.0324	-0.64	-0.0464	-0.54	0.0864	0.58
Middle age	-0.5841***	-2.5	-0.0321	-1.48	-0.1025**	-2.21	-0.0811***	-2.8	0.2158***	2.7
Gender	-0.6955*	-1.65	-0.0160*	-1.81	-0.0811***	-2.44	-0.1744	-1.41	0.2715*	1.74
Single	-0.2055	-0.43	-0.0068	-0.52	-0.0298	-0.48	-0.0444	-0.39	0.0810	0.43
Single parent	0.1729	0.43	0.0083	0.37	0.0295	0.41	0.0277	0.52	-0.0656	-0.45
Household size	-0.0541	-1.39	-0.0022	-1.33	-0.0086	-1.35	-0.010	-1.32	0.0210	1.39
Years of formal education	-0.0064	-0.29	-0.0003	-0.29	-0.0010	-0.29	-0.0012	-0.29	0.0025	0.29
Years of experience	-0.0125	-1.44	-0.0005	-1.14	-0.0020	-1.41	-0.0023	-1.43	0.0049	1.45
Farm size(ha)	0.0136	0.89	0.0006	0.77	0.0022	0.88	0.0025	0.9	-0.0052	-0.89
Group achievement	0.3398	1.59	0.0152	1.3	0.0559	1.49	0.0590*	1.66	-0.1301	-1.63
Workload achievement	0.3317*	1.71	0.0142	1.26	0.0537*	1.67	0.0597*	1.79	-0.1277*	-1.75
Production decision	0.4594	0.78	0.0165	0.89	0.0682	0.86	0.0947	0.7	-0.1794	-0.78
Use of Income decision	0.8240	1.56	0.0279	1.36	0.1145*	1.72	0.1757	1.48	-0.3182	-1.63
Asset ownership achievement	0.5631	1.39	0.0203	1.26	0.0830	1.48	0.1157	1.29	-0.2191	-1.41
Credit use achievement	0.1062	0.52	0.0047	0.48	0.0175	0.51	0.0186	0.55	-0.0408	-0.53
Empowerment score	-0.9526*	-1.81	-0.0391*	-1.69	-0.1528*	-1.75	-0.1775	-1.62	0.3694*	1.79
Off –farm activity	0.2862	1.17	0.0146	0.9	0.0499	1.07	0.0428	1.44	-0.1074	-1.21
Threshold 1	-0.4999	0.5134								
Threshold 2	0.9068	0.5301								
Threshold 3	1.8702	0.5633								
Wald chi2(19)	115.33									
Prob. > chi2	0									
Log pseudo likelihood	-168.2447									
Pseudo R2	0.2423									

\*\*\*, \*\*, \* : significant at 1%, 5% and 10% respectively

Source: Computed from Field Survey, 2016

The main focus of our discussion is on the Z-value which reflects the statistical significance of the independent variables. We also estimated the changes in the probability levels of the dependent variables which provide some interpretation of the substantive effect of the independent variables. The model result indicated that work achievement which is a part of the women empowerment indicator has a positive and significant coefficient ( $p < 0.10$ ). This implies that household heads that have adequate achievement in this indicator that is they worked less than 10.50 hours in the previous 24 hours tend to be more food secured. Gender has a negative and significant coefficient ( $p < 0.10$ ). This implies that male headed household are more food secure compared to female headed households in the study area. In the same vein, household heads that falls in the other age group categories aside from the middle age group tends to be more food secure than others. This may be because they are in their productive age and they tend to be more efficient than older farmers therefore are more food secure. The empowerment score which is the weighted sum of achievement of empowerment across the six indicators of the A-WEAI also has a negative significant coefficient ( $p < 0.10$ ). This implied that household head with a lower empowerment score have reduced probability of being food secured. The marginal effect results revealed that in the high food security category, male headed households tend to have a reduction in probability of being food secure by 0.016 while a unit increase in the empowerment score will reduce the probability of been food secure by 0.039. In the marginal food

security category, household heads that are not in the middle age group will tend to have a reduced probability of been food secure by 0.102. In the same vein, male headed household also have a reduced probability of been food secure by 0.08, also a unit increase in the empowerment gap will reduce the probability of been food secure by 0.152. Household head that have achieved adequacy in the work achievement and use of income decision will tend to increase their probability of been food secure by 0.053 and 0.1145 respectively. The marginal effect in the low food security category revealed that household heads that falls within the age group aside the middle age tend to have a reduced probability of been food secure by 0.0817, also a unit increase in the travel cost will reduce the probability of been food secure by 0.00016. Household heads that belong to a group and also achieved adequacy in the work achievement will tend to increase the probability of been food secure by 0.0590 and 0.0597 respectively. In the very low food security category, household heads between the ages of 35 to 60 years have increased probability of been food secure by 0.2156.

## **CONCLUSION AND RECOMMENDATION**

The findings from the study revealed that there are more male headed household compared to female with a mean age of 44years and average household size of 5persons. Also, the A-WEAI results showed that there is un-equitable distribution of productive resources among men and women in Ogun State. Based on the USDA (2000) approach for food insecurity scoring, it revealed that 5.7% are highly food secure, 17.6% of farm households were marginally food secure,

35.8% have low food security and 40.9% have very low food security. The food security status determined in this study shows that more effort must be made to improve the food security status of households in the study area in order to achieve the sustainable development goals which is to end hunger, achieve food security and improved nutrition. The Ordered Probit model specified revealed that gender, middle age group, workload achievement and empowerment score significantly improve the food security status of farming household in the study area. From the findings the following were recommended:

- Youths farmers should be encouraged by policy makers and government through the provision of incentives to engage in agricultural production because they are still economically active in this age as it improves their household food security status.
- Farmers should be encouraged not to spend more time on unproductive activities as farmers that are not overworked have increased probability of being food secure.
- Equitable distribution of productive resources among men and women in the household should be encouraged by stakeholders working on empowerment and policy makers as empowerment score tends to improve their food security status
- Policies should be put in place by stakeholders in charge of the affairs of gender empowerment to encourage female farmers to participate in production decision in order to improve food security status.

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