

The Corona Virus Pandemic Threat and Assessment of Women Participation in Agricultural Activities in Oyi Local Government Area of Anambra State, Nigeria

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Abstract: Women are primarily responsible for food crops in Africa and depending on the region they produce 40 – 90% of food crops. Yet, in spite of these contributions, men make the key farm management decisions. Therefore, this paper investigated women's participation in agricultural activities and the covid-19 pandemic in Oyi local government area of Anambra State. The specific objectives were to determine the perceived effect of corona virus on farming activities; determine the level of women participation in the different agricultural activities and identify the constraints faced by women in participating in agricultural activities due to corona virus pandemic threat in the study area. A total of 50 women were selected for the study using a multi-stage sampling technique. Objectives were achieved using percentages; mean, standard deviation and frequency distribution. From the findings of this study the result indicates that majority of women showed higher level of participation in farm clearing, planting and weeding. Credit facilities, labour access to input and government policies were factors militating against women participation in agricultural activities. Lack of capital, fear of contacting the coronavirus was a major constraint of women participating in agricultural activities in Oyi local Government. Individuals, cooperates, agencies and governments should provide on-line platform and delivery in the state and across the country for input and credit facilities to women in agriculture.

Keywords: Farming activities, women participation, Corona virus

I. INTRODUCTION

1.1 Background of study

Covid-19: Implications to food safety and food security

Since the outbreak of corona virus which causes severe illness nearly 167,500 Covid-19 cases have been documented in Nigeria (Nigeria Center for Disease Control (NCDC, 2020). Although many more mild case have likely gone undiagnosed. The virus has killed over 1, 497 people (NCDC, 2020).

In 2020, the number of hungry and malnourished people around the world is already on the rise due to an increase in violent, conflict and climate change and over 100 million people are in need of life saving food assistance. The novel

coronavirus undermine the efforts of humanitarian and food security organizations seeking to reverse the trend of food insecurity. COVID-19 is a health crisis but it could also lead to food security crises if proper measures are not taken. Every major outbreak in recent memory, Ebola, SARS, MERS, has both direct and indirect negative impacts on food security (UN World Food Programme, 2020). This study is in that likelihood.

COVID-19 may cause breaks in food supply chains, food strategies and food price hikes. So far, the novel corona virus has shown a major direct impact on the supply or prices of staple food in places affected by the virus or globally. The virus outbreak led to minimal disruption in markets and food prices locally owing to insufficient buffer stocks and measures taken to ensure the continued flow of goods. This has always been the case, especially in developing countries. The Ebola outbreak in 2014, for example, led to increase in the prices of staple food in countries impacted in West Africa.

Countries that rely heavily on imported food to meet demands including the Sub-Saharan Africa face disproportionate risk from supply chain failures especially in the face of border-crossing closures.

The organization for economic cooperation and development has called COVID-19 the gravest threat since the global financial crises in 2008 that cause global economy recession, exacerbating extreme poverty and hunger. Economic decline has major impacts on poverty and food insecurity. Hunger has increased in many countries where the economy has slowed down or contracted, mostly in low and middle income countries.

COVID-19 remains a threat to food security due to the negative effects on production and research. The pandemic raging at a time the country was entering the new cropping season, the effects on production would be immediate as manifested in reduction in supply with an increase in cost and reduced accessibility to food produce and food inputs.

Based on these, food crisis looms unless immediate measures

are taken to keep food supply chain active to reduce the effects of the pandemic across the food production system.

Women constitute more or less half of any country's population. In most countries however, women contribute much less than men towards the value of recorded production both quantitatively in labour force participation and qualitatively in educational achievement and skilled manpower (Lawanson, 2008). She pointed out that, the under-utilization of female in Agriculture has obvious implications for economic welfare and growth. Several factors, both economic and non-economic are responsible for this. Traditionally, women are regarded as homemakers, who oversee and coordinate the affairs and activities at home. Previously in Africa, women remained at home while their husbands and sons went out to the farm to work. But at home, however, they were not idle as they engaged in manual processing of food crops and other farm produce in addition to their housekeeping duties. With the advent of western education, industrialization and paid employment, men as well as women are drifted into the modern sector of the economy. And today, there are visible changes in the perception of women, principally because they have greater opportunities for education than before. They now constitute themselves into various societies or organizations and they are aggressively fighting for the liberalization of the role of women as opposed to restricting them to the home and home-based activities. In Nigeria today, however, women are excluded from certain occupational categories due to formal barriers as well as informal barriers to entry; the formal barriers which continue to hinder the entry of women into such occupational categories include: (i) lack of educational or technical training, (ii) labour laws and trading customs. The informal barriers include: (i) customs and religious practices, (ii) difficulties in combining domestic and labour market activities, (iii) management and worker attitudes, (Lawanson, 2008). In traditional communities, women like their male counterparts, hold farmlands and assist their husbands in all farming activities. Besides working on the farms, women of Nigeria as elsewhere in West Africa, actively participate in non-agricultural activities such as craft and dyeing, weaving and spinning, food processing, retail trade and other home-based informal activities. Lawanson, (2008) shed more light on the role of Nigerian women in agriculture. As in other parts of Africa, Nigerian women have worked side by side with men in agriculture with some marked division of labour between them. The men performed the tedious tasks of felling trees, gathering and burning of bush and making ridges while women were involved in planting of seeds particularly food crops, harvesting, transportation, processing and selling of farm products. In Nigeria, there are significant regional differences in women participation in agriculture. For instance, a study of women in the country revealed that on an overall basis, 40 per cent of the rural women surveyed regarded farming as their major occupation. On regional basis, 89, 10 and 6 per cent of those in the East, West and South respectively regarded agriculture as their main occupation

(Lawanson, 2008).

Damisa *et al.*, (2007) pointed out that various researches conducted on the contribution of women to agricultural development in the country suggested that women contribution to farm work is as high as between 60 and 90% of the total farm task performed. The contribution of the women ranges from such tasks as land clearing, land-tilling, planting, weeding, Fertilizer/manure application to harvesting, food processing, threshing, winnowing, milling, Transportation and marketing as well as the management of livestock. (Charles and Willem, 2008) opined that the importance of the role played by women in agricultural production is such that the widespread failure so far to reach women farmers through formal extension services has major repercussions for national output and food security as well as social justice. Women make up half the rural population and they constitute more than half of the agricultural labor force. Rural women in particular are responsible for half of the world's food production and produce between 60 and 80% of the food in most developing countries. Yet, despite their contribution to global food security, women farmers are frequently underestimated and overlooked in development strategies.

Majority of them use low yielding and unimproved planting materials, primitive and labour intensive farm implements, traditional farming practices, which have adversely affected agricultural production. It has been reported that 80% of the work done on the farm in agricultural activities takes place in rural areas. It is now widely demonstrated that rural women, as well as men throughout the world are engage in a range of productive activities essential to household welfare, agricultural productivity and economic growth. Yet women's substantial contribution continues to be under-valued in conventional agricultural and economic analyses and policies, while men's contribution remains the central, often sole focus of attention (Fabiya *et al.*, 2007).

1.2 Problem statement

Women marginalization is seen in a regional study documented by (Ogunlela and Muktar, 2009) which showed that women represent only 11% of the total extension staff in Africa. According to the report, women are not only neglected by male extension workers at the farm level. According to technologies for agricultural development report, male producers are generally targeted and infrequently serve women's needs (Ogunbameru and Gwari, 2006) stated that many of these problems and constraints women face are "a function of the social division of labour, their socially determined roles and the resulting inequalities between men and women in responsibilities, opportunities, access to resources and rewards". There is every need to evaluate this programme to determine if women are participating in Agricultural production or not.

1.3 Objectives of the Study

The main objective of this study is to analyze women participation in Agricultural production in Oyi L.G. A. of Anambra State. The specific objectives are to:

1. Identify the socioeconomic characteristics of the respondents.
2. Determine women level of participation in the different agricultural activities.
3. Determine the women's access to economic resources during the lockdown.
4. Identify the constraints to women participation in agricultural activities due to corona virus pandemic threat.

1.4 Hypothesis of the study

- i. There is no significant relationship between selected socioeconomic characteristics of women and the level of their participation in agricultural production.
- ii. There is no significant relationship between constraint and level of participation
- iii. There is no significant relationship between access to economic resource and level of participation.

II. REVIEW OF RELATED LITERATURE

Damisa and Yohanna (2007) stated that the role of women in agricultural production in Nigeria can never be underestimated. They perform crucial roles in the domestic and economic life of the society. Rural and national developments can hardly be achieved with the neglect of this important and substantial segment of the society. In recognition of the important role of women in nation building, the Nigerian Government more than ever before is keen upon rural poverty alleviation as a way of improving the economy. As such, focus is on planned and desirable change in the rural societies in the form of agricultural development. The success of this planned change is however hinged largely on the active participation of women in agricultural production. A lot of literatures have shown the various contributions of women to agricultural production in Nigeria. The role of women in agricultural production has however not widely been explored. Male dominance in decision making in the household and economy as well as agricultural production has continued even in areas where women are the key providers of labour because the influence of women has not been recognized. The women have more or less been relegated to play second fiddle in homes and the economy. Considering therefore the importance of active participation of rural women in agricultural production, it is necessary to correct for this anomaly.

According to the World Bank participation source book, in Nigeria, women play a dominant role in agricultural production. This was confirmed by the findings of a study financed by the United Nations Development Program (UNDP) in which the study revealed that women make up 60-80% of the agricultural labor force in Nigeria, depending on

the region, and produce two-thirds of the food crops. Yet despite these facts, widespread assumptions that men-and not women-make the key farm management decisions have prevailed. As a result, agricultural extension services in Nigeria (as in other African countries) have traditionally been focused on men and their farm production needs, while neglecting the, female half of the production force. Most extension messages targeted at women emphasized their domestic role with topics on child care and family nutrition.

It became clear that despite a decade of bank assistance in building up Nigeria's agricultural extension service, women were receiving minimal assistance and information from extension agents. The study caught the eye of the head of the Nigeria's Federal Agriculture Coordinating Unit (FACU) and the bank division chief on agriculture in the West Africa department who were both committed to finding a solution. In 1988 their support led to the creation of Women in Agriculture (WIA) programs within the existing state agricultural development projects (ADPs) in an attempt to address the gender-related deficiencies within the existing extension program. The ADPs were created in the 1970s with funding assistance from the Bank and their main objective was to increase the production of both food and industrial crops by stimulating agricultural production at the small farmer level.

III. METHODOLOGY

3.1 Design

Survey design was adopted in carrying out the study. Akuezuilo and Agu (2003) described survey research as the one in which a group of people or item is studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group. The design was adopted because information gathered from the participant was analyzed without any form of treatment.

3.2 Area of study

The study was carried out in Oyi Local Government Area of Anambra state, Nigeria. The area was selected for the study because the inhabitant are predominantly farmers. It is one of the 21 LGAs of Anambra state and it is composed of five (5) autonomous communities namely; Awkuzu, Nteje, Umunya, Ogbunike and Nkwelle-Ezunaka. The Local Government area comprised of the following villages: Ogbunike autonomous communities includes; Ifite, Amawa, Azu, Osile, Ukalor, Umueri. Umunya autonomous communities includes; Ezi-Umunya, Okpu, Ojobi, Umuebo, Amaezike, Ajakpani. Nkwelle- Ezunaka autonomous communities includes; Ezinkwelle, Uruebo/Amaeyi, Amuche, Oze. Awkuzu autonomous communities includes; Nkwelle-Awkuzu, Dusogu, Ukponachi, Amabo. Nteje autonomous communities includes; Umuefi, Ezioye, Achalla, Agwa, Ubili, Amupa, and many others. Its location is between latitude 5⁰ and 7⁰N and longitude 6⁰ and 7⁰E. Oyi LGA is located at the south-west of Awka the capital of Anambra state and at East of River Niger.

It occupies a land area of about 500qkms with predominantly grassland vegetation. The five autonomous communities are known for their vast agricultural farming in both crop and livestock production. Being agrarian in nature, they are essential agricultural based and reputed as one of the food basket of the state. It has wide arable land and the crops grown include; rice, yam seeds, cassava, cocoyam, maize and vegetables. Domestic animals are goats, sheep and fowl. Due to the system of land ownership in the area cultivation of crop is relatively on small holding by individual farmers who practice cropping often with follow system. The population of the LGA is estimated at about 126,465 (NPC, 2011).

Having it's headquarter at Nteje. It is located in a warm tropic region of the rain forest of the South eastern Nigeria. And, it experiences an average monthly rainfall of 25mm between May and July and 2.5mm between December and January. In addition, the study area being located in plain terrains with beautiful climate and favorable vegetation is noted for agricultural activities.

3.3 Population of the Study

The population of the study is the women farmers in Oyi Local government Area of Anambra state which consist of 92,235 farmers from Oyi Local Government Area (Agricultural Development Programme, 2012).This formed the sample frame.

3.4 Sample and Sampling Techniques

A multi-stage sampling method was employed for the selection of the respondents. Firstly from the five (5) autonomous communities, 10 villages were randomly selected using simple random sampling techniques to give the samples equal chances of being selected and to avoid bias. In the second stage, five registered female farmers from each of the 10 selected villages known as circle were randomly chosen. Thus, making a sample size of 50 respondent used for this study.

3.5 Method of Data Collection

Data for the study were collected using structured interview schedule. This is because the farmers were illiterate. Information collected were on socio-economic characteristics of respondents, agricultural activities engaged in, as well as level of access to economic resources.

3.6 Validation of Instrument

For the purpose of this study, face and content validity were used in validating the instrument .The instrument was validated by the supervisor and two specialists from agricultural economics and extension from

1. Odumegu Ojukwu University Igbariam.
2. Nnamdi Azikiwe University, Awka.

3.7 Reliability of the Instrument

Reliability is concerned with the degree of consistency of the

measuring instrument. The reliability co- efficient was established using Pearson product moment. The reliability index 0.87 indicated that the instrument is reliable

3.8 Data Analysis

Objectives (i) and (iv) were achieved using descriptive Statistics, Such as percentages mean and frequency distribution Objectives (ii) and (iii) were achieved using Inferential Statistics such as ordinal regression analysis.

3.9 Model Specification

The basic form of a generalized linear model is shown in the following equation:

$$\text{Negative Log-Log } (\gamma_{ij}) = \theta_j - [\beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_p x_{ip}]$$

Where:

γ_{ij} is the cumulative probability of the j^{th} category for the i^{th} case

θ_j is the threshold for the j^{th} category

p is the number of regression coefficients

$x_{i1} \dots x_{ip}$ are the values of the predictors for the i^{th} case

$b_1 \dots b_p$ are regression coefficients

IV. RESULTS AND DISCUSSION

Table 1: Socio-economic characteristics of the respondents

Demographic Characteristics	Frequency	Percentage	Mean
Age			
20-30yrs	16	32.0%	38.0
31-40yrs	22	44.0%	
41yrs and above	12	24.0%	
Marital status			
Married	33	66.0%	
Single	7	14.0%	
Widowed	10	20.0%	
Divorced	0	0.0%	
Education level			
Non-formal	12	24.0%	1.4
Primary	25	50.0%	
Secondary	13	26.0%	
Size of farm 1-3ha	34	68.0%	
4ha and above	16	32.0%	
Years of farming			
2-6yrs	12	24.0%	11.4
7-11yrs	18	36.0%	
12-16yrs	15	30.0%	
17yrs and above	5	10.0%	

Source: field, 2020

Table 1 showed the demographic characteristics of women participating in agricultural production in Oyi LGA of Anambra State with respect to age, marital status, educational level, size of farm, and years of farming.

Age: Majority of the respondents were (44%) within the age bracket of 31-40 years,32% were within the age bracket of 20-

30 years while 24% were 41 years and above. The implication is that majority of the women participating in agricultural production were within the age bracket of 31-40 years. This findings in agreement with Chikwendu and Arokoyo (1993) who show that younger women participate more in agriculture production than older women.

Marital status: Majority (66%) of the respondents were married, 20% were widowed, 14% were single. This indication is that majority of the women participating in agricultural production were married. Rahman (2003) study also confirmed that family burden or responsibility may engender married women into different agricultural activities.

Educational level: Majority (50%) of the respondents have primary education, 24% have non-formal education, 26% have secondary education. The result revealed that majority of the women participating in agricultural production also has primary education. This findings agrees with study of Chikwendu and Adekoya (1995) who showed that women with higher education qualification tends towards formal employment while most women with primary or non-formal education tends towards engaging in informal activities like farming, trading etc.

Size of farm: Majority (68%) of the respondents use between 1-3hectares of farm land, 32% use 4 and above hectares of farmland. The implication is the majority of the women participating in agricultural production use between 1-3 hectares of farmland. This finding reflects land as one of the constraints of women in agricultural activities (Chikwendu and Arokoyo, 1993).

Years of farming: Majority (36%) of the respondents have 7-11years of farming experience, 24% have 2-6 years of farming, 30% have 12-16 years of farming while 10% have 17 years and above. The implication is that women with 12-16 years of farming experience showed higher level of participation in agricultural production. This study agrees with the findings of Ani (2004) who showed that most of the experience farmers tend to invest their resource and incomes towards increasing their level of participation in agricultural production.

Table 2: Economic resources

Table 2 showed responses on economic resources accessible to women participating in agricultural production in Oyi LGA, Anambra State.

Economic Resources	Frequency	Percentage
Labour		
Family labour	21	42.0%
Hired labour	14	28.0%
Communal labour	15	30.0%
Credit facilities		
Yes	6	12.0%
No	44	88.0%
Land		
Inheritance	19	38.0%
Borrowed	10	20.0%

Lease	16	32.0%
Communal	5	10.0%
Technology		
Improved seeds	9	18.0%
Improved breed of animal	11	22.0%
Organic fertilizer	10	20.0%
Inorganic fertilizer	20	40.0%

Source: field, 2020

Labour: Majority (42%) of the respondents have access to family labour, 28% use hired labour, 30% used communal labour. The implication is that majority of the women used family labour in production. This finding agrees with the study of Chikwendu and Adekoya (1995) that showed access to non-family labour as one of the constraints of women in agricultural production.

Credit facilities: Majority (88%) of the respondents have no access to credit facilities, 12% have access to credit. The implication is that some the constraints of the women in agricultural production include access to credit (Gladwin, 2002).

Land: Majority (38%) of the respondents have access to land through inheritance, 20% have access to land through borrowing, 32% have land through lease, 10% have land through communal. This reflects some of the constraints of women in agricultural production to land resources (Gladwin, 2002).

Technology: Majority (40%) of the respondents have access to fertilizer, 22% have access to improved breed of animal, 20% have access to organic fertilizer (manure), 18% have access to improved seeds. The implication is that majority of the women have access to fertilizer than any other technology. This finding also agrees with the study of Gladwin (2002) who showed that major agricultural interventions programs targeted on women have been fertilizer distribution.

Table 3: Level of participation of women in agricultural production in Oyi LGA of Anambra State

Farm enterprise	Frequency %
Level of participation	
Low 33.8%	1
Moderate 38.5%	10
High 57.7%	15
Total 100.0%	26
Animal production	
Level of participation	
Low 37.5%	9
Moderate 37.5%	9
High 26.0%	6
Total 100.0%	24

Source: field, 2020

Table 3 shows the level of participation of women in different agricultural production activities in Oyi LGA.

Farm enterprise: Majority (57.7%) of the respondents showed low level of participation in crop production, 38.5% showed moderate level, 3.8% of the women showed high level of participation to crop production. Majority 37.5% of the

respondents showed low level of participation in animal production, 37.5% showed moderate participation, 25% showed high level of participation to animal production. The implication is that participation in animal production showed higher level of participation in agricultural production in comparison to women participating in crop production. This finding is in compliance with the study of Ani (2004) which showed that due to higher income turnover in animal production, women participation in animal production showed higher level of participation in agricultural production in comparison to women participation in crop production.

Table 4: Constraints to women participation in agricultural production in Oyi LGA of Anambra State

Table 4 shows the constraints to women participation in agricultural production in Oyi LGA.

Constraints	Frequency	Percentage
Lack of Capital	28	56.0%
Lack of government support	12	24.0%
Pest and diseases	4	8.0%
Lack of storage facilities	3	6.0%
Inaccessibility of credit	3	6.0%
	50	100.0%

Source: field, 2020

Constraints: Majority (56%) of the respondents indicated lack of capital, 24% showed lack of government support, 8% indicated pest and disease, 6% lack of storage facilities, 6% revealed inaccessibility of credit. The implication is that lack of capital is a major constraint in women participating in agricultural production (Sabo, 2006).

4.2 Testing of Hypothesis

Hypothesis 1: *There is no significant relationship between selected socio-economic characteristics and the level of women participation in agricultural production.*

The ordinal regression between selected socio-economic characteristics of women and their level of participation in agricultural production is shown in table 4.2.1 below. The significant chi-square statistics for goodness of the fit-test indicated that the model gives a significant improvement over the baseline intercept-only model. The Cox and Snell statistics value of 0.590 revealed that the model explains approximately 59% variability of women participation in agricultural production.

For the age parameters, one category has significant coefficients indicating that women participation in agricultural production is to some extent influenced by age. Women of 20-30yrs age bracket showed significantly higher level of participation in agricultural activity in comparison to women of age bracket of 41yrs and above (OR= 4.997, $p < 0.05$).

However, women of age bracket of 31-40 yrs showed insignificantly higher level of participation in agricultural production in comparison to women of age bracket of 41yrs and above (OR=1.461, $p > 0.05$).

With respect to marital status, none of the coefficients was significant. This indicates that the women participation in agricultural production is not influenced by marital status. The positive coefficient for married women indicates that they reported insignificantly higher level of participation in agricultural production in comparison to women who are widowed (OR= 0.665, $p > 0.05$) while the negative coefficient for single ladies shows that they reported insignificantly lower level of participation in agricultural production in comparison to women who are widowed (OR= 1.307, $p > 0.05$).

With respect to educational qualification, all the coefficients were negative and insignificant. This indicates that women participation in agricultural production is not influenced by educational qualification. The negative coefficients implies that women with informal education reported insignificantly lower level of participation in agricultural production in comparison to women with secondary education (OR= 1.936, $p > 0.05$). Similarly, women with primary education show insignificantly lower level of participation in agricultural production in comparison to women with secondary education (OR= 1.307, $p > 0.05$).

With respect to size of farmland, the coefficient is negative and significant. This indicates that the level of women participation in agriculture is significantly influenced by the size of farmland. The negative coefficient implies that women that have between 1 to 3 hectare of farmland showed significantly lower level of participation in agricultural production in comparison to women with 4 hectares of farmland and above (OR=19.218, $p < 0.05$).

With respect to years of farming, one category has significant coefficients indicating that women participation in agricultural production is to some extent influenced by years of farming. Women with 2-6 years of farming experience showed significantly lower level of participation in agricultural production in comparison to women with 17 years and above of farming experience (OR=4.328, $p < 0.05$) while women with 7-11years of farming experience and 12-16 years of farming experience showed insignificant level of participation in agricultural production in comparison to women of 17 years and above farming experience ($p > 0.05$).

With respect to type of enterprise, women participating in crop production showed significantly lower level of participation in agricultural production in comparison to women participating in animal production (OR=4.858, $p < 0.05$).

The threshold statistics reveals that if all predictors were held constant, the level of women participation in agricultural production will still decrease.

Table 4.2.1: Ordinal Regression of the relationship between selected socio-economic characteristics of women and their level of participation in agricultural production

	Estimate	Std. Error	Wald	Df	Sig.	95% Confidence level Lower bound	Upper bound
Cox and snell (R ²) 0.590 Nagelkerken(Adj. R ²) 0.683 Pearson Chi-square 44.586 (p=0.000)							
Threshold							
Low participation	-3.191	1.43	4.977	1	0.026	-5.994	-0.387
Moderate participation	-0.128	1.191	0.012	1	0.914	-2.463	2.207
Age							
20-30yrs							
31-40yrs	2.699	1.372	3.87	1	0.049	0.01	5.389
41yrs and above	0.83	0.687	1.461	1	0.227	-0.516	2.176
Marital status	0			0			
Married							
Single	0.589	0.722	0.665	1	0.415	-0.827	2.005
Widowed	-1.606	1.576	1.037	1	0.308	-4.695	1.84
Educational level	0			0			
Informal							
Primary	-1.083	0.822	1.732	1	0.188	-2.694	0.528
Secondary	-1.003	0.721	1.936	1	0.164	-2.415	0.41
Size farm	0			0			
1-3ha							
4ha and above	-3.795	0.866	19.281	1	0	-5.491	-2.098
Years of farming	0			0			
2-6yrs							
7-11yrs	-3.769	1.812	4.328	1	0.037	-7.321	-0.218
12-16yrs	-0.458	1.069	0.184	1	0.668	-2.553	1.637
17yrs and above	0.53	1.016	0.271	1	0.602	-1.461	2.52
Farm enterprise	0			0			
Crop production							
Animal production	-1.285	0.583	4.858	1	0.028	-2.427	-0.142

Link function: Negative log-log a. This parameter is set to zero because it is redundant

Hypothesis 2: This is no significant relationship between access to economic resources and level of women participation in agricultural production.

The ordinal regression between access of women to economic resources and their level of participation in agricultural production is shown in table 4.2.2 below. The significant chi-square statistics for the overall model shows that the model

gives a significant improvement over the baseline intercept-only model. The Cox and Snell statistics value of 0.460 revealed that that the model explains approximately 46% variability of women participation in agricultural production.

The parameter estimates for sources of labour revealed that none of the coefficients are significant indicating that women participation in agricultural production is not influenced by

sources of labour ($p>0.05$). The negative coefficients for family labour (-0.993) and hired labour (-1.302) indicates that women with access to family labour or hired labour showed insignificantly lower level of participation in agricultural production in comparison to women with access to communal labour .

With respect to credit resources, the coefficient is insignificant indicating that women participation in agricultural production is not influenced by access to credit ($p>0.05$). The negative coefficients indicates that women with no access to credit facilities showed insignificantly lower level of participation in agricultural production in comparison to women with access to credit facilities (OR=2.041, $p>0.05$) .

With respect to land resources, one of the categories has significant coefficients, indicating that to some extent women participation in agricultural production is influenced by access to land resources. The negative and significant coefficient for inherited land resources indicates that women who inherited land resources showed significantly lower level of participation in agricultural production in comparison to women with communal land (OR=4.773, $p<0.05$). However,

women with lease or borrowed land resources showed insignificantly higher level of participation in agricultural production in comparison to women with to communal land.

With respect to technology, one of the categories has significant coefficients, indicating that to some extent women participation in agricultural production is influenced by the type of technology received. The significant coefficient for improved seeds indicates that women who received improved seeds showed significantly higher level of participation in agricultural production in comparison to women who received fertilizer (OR=4.088, $p<0.05$). However, women who received improved breed and organic fertilizer showed insignificant level of participation in agricultural production in comparison to women who received fertilizer ($p>0.05$).

The threshold statistics reveals that if all predictors were held constant, the level of women participation in agricultural production will increase

The threshold statistics reveals that if all predictors were held constant, the level of women participation in agricultural production will still decrease.

Table 4.2.2: Ordinal Regression of the relationship between access to economic resources and level of women participation in agricultural production

	Estimate	Std. Error	Wald	Df	Sig.	95% Confidence level Lower bound	Upper bound
Cox and snell (R ²) 0.460 Nagelkerken(Adj. R ²) 0.533 Pearson 30.842 Chi-square (p=0.000)							
Threshold							
Low participation	-0.456	0.856	0.283	1	0.595	-2.134	1.223
Moderate participation	-1.624	0.923	3.092	1	0.079	-0.186	3.433
Labour							
Family labour	-0.993	0.721	1.898	1	0.168	-2.405	0.42
High labour	-1.262	0.883	2.041	1	0.153	-2.992	0.469
Com labour	0			0			
Credit facilities							
No	-1.262	0.883	0.665	1	0.153	-2.992	0.469
Yes	0			0			
Land							
Inheritance	-2.113	0.967	4.773	1	0.029	-4.008	-0.217
Lease	0.44	0.781	0.484	1	0.486	-0.987	2.075
Borrowed	0.775	0.754	1.053	1	0.304	-0.703	2.252
Communal	0			0			
Technology							
Improved seeds	1.445	0.715	4.088	1	0.043	0.044	2.847

Improved breed	-0.364	0.7	0.271	1	0.603	-1.737	1.008
Organic fertilizer	0.734	0.724	1.028	1	0.311	-0.685	2.152
Inorganic fertilizer	0			0			

Link function: Negative log-log a. This parameter is set to zero because it is redundant

Hypothesis 3: There is no significant relationship between the constraints of women and level of women participation in agricultural production.

The ordinal regression between accesses of women to women constrains and level of participation in agricultural production is shown in table 4.2.3 below. The insignificant chi-square statistic ($p > 0.05$) shows that the model does not give a significant improvement over the baseline intercept-only model. The Cox and Snell statistics value of 0.015 revealed that that the model explains approximately 1.5% variability of constraints to women participation in agricultural production.

The parameter estimate for all the coefficients are positive and

insignificant indicating that women participation in agricultural production is not influenced by the type of constrains they faced. The positive coefficients implies that women who indicated lack of capital, lack of government support, pest and diseases and lack of storage facilities as their constrains all reported higher but insignificant level of participation in agricultural production in comparison to women who indicated lack of credit facilities as their constrains ($p > 0.05$).

The threshold statistics reveals that if all predictors were held constant, the level of women participation in agricultural production will increase

Table 4.2.3: Ordinal Regression of the relationship between constraints of women and their level of participation in agricultural production

	Estimate	Std. Error	Wald	Df	Sig.	95% Confidence level Lower bound	Upper bound
Cox and snell (R^2) 0.015 Nagelkerken(Adj. R^2) 0.017 Pearson 0.736 Chi-square ($p=0.947$)							
Threshold							
Low participation	0.948	1.022	0.861	1	0.353	-1.055	2.952
Moderate participation	2.538	1.077	5.559	1	0.018	0.428	4.648
Lack of capital	0.707	1.054	0.449	1	0.503	-1.36	2.773
Lack of govt support	0.55	1.104	0.249	1	0.168	-1.613	2.713
Pest and disease	0.662	1.236	0.287	1	0.598	-1.761	3.086
Lack of storage facilities	0.897	1.268	0.501	1	0.479	-1.588	3.382
Inaccessibility to credit	0			0			

Link function: Negative log-log a. This parameter is set to zero because it is redundant

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Based on the findings of this study, women farmers in the study area are faced with a lot of barriers in their quest for effective participation in agricultural production. Some of the barriers observed that inhibit participation of women farmers in agricultural production generally are: lack of land ownership right; on availability of credit and loans facilities; inadequate training and low standard of education. It is

therefore, important to identify factors such as land, access to credit and other agricultural inputs as militating t against active participation of women.

5.2 Conclusion

The following are the main conclusion of the study

1. The level of women participation in agricultural production in Oyi LGA is significantly influenced by socioeconomic characteristics of age, size of farmland, farming experience and type of farming enterprise women are engaged in.

2. The level of women participation in agricultural production in Oyi LGA is significantly influenced by access to economic resources such as land and technology
3. The level of women participation in agricultural production in Oyi LGA is not influenced by constraints they face in agricultural production

5.3 Recommendations

Based on the findings of this study, the following recommendations were made:

1. Since there is a general low level of women participation in agricultural production, extension agency should encourage the formation and membership of cooperatives societies among farmers to leverage on economic resources such as land and technology.
2. Government and commercial banks should provide agricultural credit facilities and loans that will take into cognizance the peculiar nature of women in terms of collateral demands, so that they could have access to capital that will help them purchase inputs and technology that will facilitate greater output.
3. The extension agencies should have a re-orientation of their service delivery systems, where female clientele will be treated equally with their male counterparts. This will ensure more agricultural development and effective participation in agricultural production.

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