SOCIO-ECONOMIC DETERMINANTS OF WOMEN PARTICIPATION IN AGRICULTURE IN OLAMABORO LOCAL GOVERNMENT AREA, KOGI STATE

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Abstract

Women play a critical role in agricultural growth in developing countries, men and women smallholder farmers – even within the same household – often have different needs and priorities and experience different constraints in their access to agricultural resources and decision-making power. This study analysed women participation in agricultural production in Olamoboro Local Government Area of Kogi State, Nigeria. It investigated the characteristics, the level and determinants of participation of women farmers in agricultural production. The research was carried out with the use of well-structured questionnaire interview schedule to obtain the necessary data. The empirical results revealed that the farmers are mostly illiterate and earn low income which directly informed their participation in agricultural production. Their holdings are small, < 2ha, and cultivated mostly to cereals and root crops, and relying on family labor and hand-held hoe and cutlasses. Many keep animal, in particular, sheep, goats and chickens. Most depend on personal savings, and obtained their land through inheritance and communal/family, and their farm inputs from open markets. The result shows that female farmers within the age bracket of 20-50 years predominate, majority of the respondent of about 78% are married women. 59% in Imane and 57% are from Ogugu. About 99% of the farmers interviewed practices traditional hand held farming such as use of Hoe, Cutlass etc. and about 1% involves in mechanical cultivation. As a result of large percentage of about 93% involve in family labor agricultural produce in Ogugu are mainly subsistence crops and only 7% contribute to commercial farm produce or cash crops. The major challenge faced by about 90% of women participating in farming activities includes; inadequate capital/credit and gender bias, about 82% complaint of government support, 80% further talked about poor weather and shortage of labour, another 76% lack adequate information, 71% lack fertilizer and manure, while 53% and 60% talked about limited access to land and poor disease control respectively. The study concludes that there is high rate of involvement of women in agricultural production in the study area, the problem they face notwithstanding, and call for an urgent need to exterminate the gender bias issue that holds these women down.

Keyword: Determinants, women, participation, agriculture and Olamaboro

1.1 Introduction

Among all the sectors and industries in the global economy, the agricultural sector plays an important role through its impact on one of the oldest economic activities in the world; in fact, it gainfully employs over 70% of the world's population (Kughur, Okeme, & Omaku, 2018). Agriculture is the main source of income for rural

households in developing countries and also the main occupation of many women. Worldwide, 72% of all employed women and 90% of all rural women are working in agriculture (Chayal, Dhaka, & Suwalka, 2010).

It has been widely demonstrated that rural women, as well as men throughout the world are engaged in a range of productive activities essential to household welfare, agricultural productivity and economic growth (Kughur *et al.,* 2018). In fact, several research works on the subject of food production have often referenced the role of women in different capacities (Oladejo, Olawuyi, & Anjorin, 2011; Fabiyi, Danladi, Akande, & Mahmood, 2007).

Women farmers grow more than half of all the food in developing countries and up to 80% in parts of Africa, generally inform of small-scale crops for household consumption (Kughur *et al.*, 2018). They are responsible for about 75% of total household food production in Sub-Saharan Africa, 65% in Asia and 45% in Latin America (Obiora, 2013). In rural areas, women form the majority of rural areas and are responsible for about 80% of all food items produced (Awotide, 2012).

Women role in agricultural development has been traditionally under-rated owing to the argument that they are not major contributors to development process but rather beneficiaries of development (Okebiorun & Jatto, 2017; Jatto, Gunu, & Alkali, 2013; Owolabi, Abubakar, & Amodu, 2011).

Regardless of the level of development achieved by different economies, women play a crucial role in food production and rural development in most countries, yet relative to men, they have less access to productive asset (Kughur *et al.*, 2018). There is a striking bias in favour of men when it comes to access to ownership of land, agricultural technology, information, training, financial services and all related productive resources (Marcela, 2010; National Research Centre for Women in Agriculture (NRECWA), 2004).

There are a lot of constraints that women farmers have encountered due to the prevailing problems of limited information and knowledge. Some of these problems include labour activities, market-price driven decisions, small-scale production, inadequate capital investments and exploitation by traders which in turn decline the hope of improving their main source of income (Levan, Ngo, & Nguyen, Market information access capability of rural farmers in Ngason, Thanh Hoa, Viet Nam, 2013). Also included in these

challenges is education, which is largely more available to the male sex than its female counterpart in developing countries. Interestingly, this factor also affects productivity, leading invariably to poor productivity, unemployability and low earning capacity, leading directly to poverty and hunger (Ngema, 2017; Elias, Nohmi, Yasunobi, & Ishida, 2013; Arene & Anyaeji, 2010; Food and Agriculture Organization (FAO), 2005; Rahman & Alamu, 2003).

These challenges inevitably turn out a crop of female farmers who are on the lower rungs of the productive ladder. As a result, areas such as farm size and production scale are affected. It has also been reported that female farmers tend to operate small-scale, subsistence agriculture, as a consequence of their exclusion from engaging in large scale production – which is in turn the end result of not having access to credit facilities, or inability to procure large quantity of farm inputs (Kughur *et al.*, 2018; Ngema, 2017; FAO, 1990). This is not counting the traditional and land administration system in Nigeria which do not allow women the right to inherit land – another situation that makes it very difficult for women to own farmland especially in the villages where land is acquired through inheritance (Kughur *et al.*, 2018).

This study therefore attempts to examine the participation of women in agriculture, using the women of Olamaboro Local Government Area of Kogi State as a case study.

2.1.1 Study Area

Olamaboro is one of the 21 Local Government Areas (LGAs) in Kogi State, Nigeria (Fig. 3.1). The LGA was created out of Ankpa LGA in 1989. It is made up of three districts namely; Imane, Okpo and Ogugu with a population of 116,692 (NPC, 2006). In terms of absolute location, Olamaboro LGA lies between latitude 100 N and Longitude 120 E. In terms of relative location, the LGA is located at the South east of Kogi State, bordering Enugu State and Benue State. Its headquarters is at Okpo. It is about 80km from Okpo to the state capital. Kogi State shares common boundaries with Niger and Nasarawa States and the Federal Capital Territory to the North and Benue State to the East. To the West, it is bounded by Kwara, Ekiti and Ondo States and to the South by Enugu, Anambra, and Edo States.

Olamaboro LGA was carved out of Ankpa LGA on 9th May, 1989 during the Ibrahim Babangida military regime under the then Benue State. The Local Government with Okpo as the headquarter is made up of three (3) districts, namely: Ogugu, Okpo and Imane. It was

named after a big stream called "Maboro" which flows from Ankpa and separated Olamaboro and Ofu LGA (Attah, 2017).

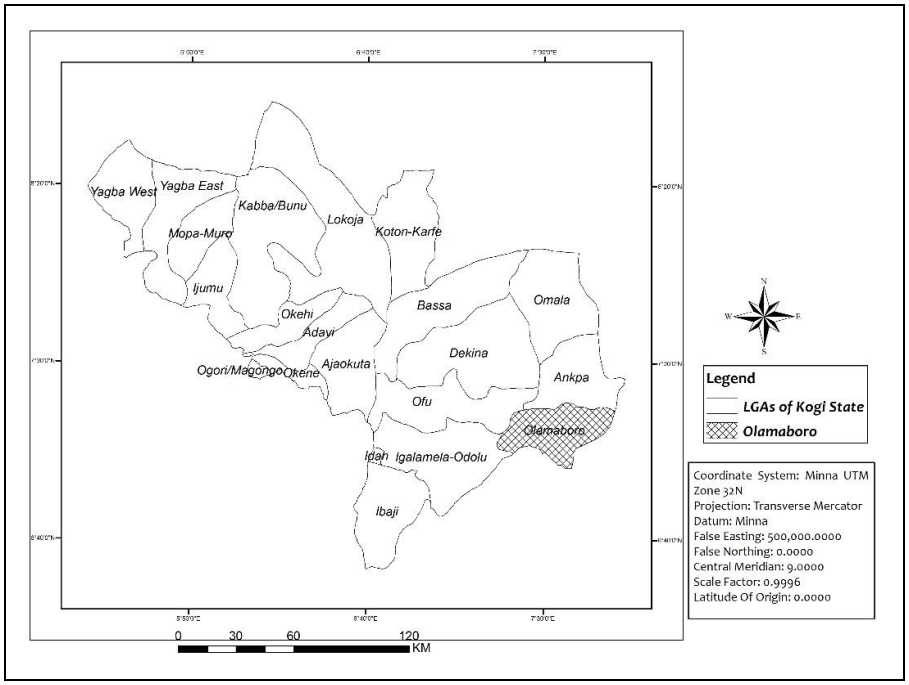


Figure 3.2: Kogi State showing Olamaboro Local Government Area (Source: PDC GIS,2020)

3.1 Methodology

The research was conducted using the qualitative research method. As explained by Babbie *et al* (2010:25), qualitative research is a research paradigm for social scientists to study human action from the perspective of social actors. They further argue that, the qualitative researcher's emphasis is on studying human actions in their natural environment, which means that, they study people in their communities. The primary goal of this approach therefore is to describe and understand the informant's experiences from their point of view. Qualitative research is mainly characterized by in – depth text and explanation of the study results, instead of just using figures and illustrations to present the data (De Vos *et al* 2005:36). A qualitative research approach therefore is more efficient and effective for the present study, as the researcher seeks to gain a deeper understanding of the community.

3.2 Types and Sources of Data

In order to achieve the objectives of the study, the following data was required:

i. Demographic and socio-economic characteristics of women farmers: These include age, marital status, education, household size, income, years of farming experience, farm size, etc.; these data were collected using a well-structured questionnaire.
ii. Determinants of women interest/participation in agriculture in the study area: These include such variables as age,

education, household size, farm size, income; which will be collected with the aid of a well-structured questionnaire.

iii. Factors of agricultural productivity and profit: These include such variables as age, education, household size, availability of farm implements, credit, and managerial skills; which will be obtained from the use of a well-structured questionnaire.

iv. Challenges and problems faced by women in agriculture in the study area: These were adopted from literature, and the findings of empirical studies around the same subject; these data will be gotten by employing well-structured questionnaire.

Both primary and secondary sources of data were used for this research.

Sampling Method

Basic individual interviews were used throughout the course of data collection in conjunction with participant observation. Most empirical model employed in deciding sample size is based on population figure. Such unfortunately is not available in the present situation. The type of data analysis to be performed and how heterogeneous the sampled population is essentially form the main criteria for the determination of sample size in this study. Other factors taken into consideration are funding and time constraints. Overall, 180 female farmers were interviewed, 60 each for the respective community. The method used for the selection of respondents combined systematic random sampling was used in the distribution of questionnaire to every female farmer's for every 5^{th} building of the purposive selection. This type of sampling method which is also termed opportunistic sampling or judgmental sampling is used when researchers want to find informants who will provide the relevant information (De Vos et al 2005:15). The aim of judgmental sampling is to select the units that are most likely to answer the research question at hand.

Data were collected during the 2020 cropping season. The interview survey made use of structured questionnaire. Copy of the questionnaire used is given as Appendix I. The questionnaire included demographic and socio-economic characteristics of women farmers, the determinants of women interest/participation in farming activities in Olamaboro LGA, what factors are responsible for productivity and profit, and the challenges and problems that they play against. Close-ended questions were the favoured mode of enquiry, with Likert-Scale options employed to evaluate the degree of response to a variable. In very few cases are open-ended questions used (as these are usually difficult to summarise and

quantify); and where they are used, the query is presented in the form of an interview.

3.8 Data analysis

Both descriptive and Chi-square test were employed in the study. The descriptive statistical technique, comprising of mean and percentages, was used to summarize the results of various variable/parameter determined, while test Chi-square analysis was used to test for goodness of fit for the demographic and socio-economic data amongst the different communities surveyed. Statistical test for significance were carried out at the 0.05 level. All statistical analysis was carried out by using Microsoft Excel version 2010.

4.1 Result

4.1.1 Demographic and Socio-Economic Characteristics of the Respondents

Table 4.1 shows the demographic and socio-economic characteristics of the respondentsin the study. Except otherwise indicated, all values represent the percentage of farmers. The results indicate that across all the communities, female farmer in the 20-50year age bracket predominate,about 59% in Imane and 57% in Ogugu, this is middle and young adulthood age, which may tend to suggest that many of them have more energy that could be spent on farm labour. Such age bracket is also expected to have access to information or technologies through extension services or development projects that work in the region. It could also be that with age, the individual has accumulated more capital which could be spent on hired labour. (89.5%) of the result reviewed that majority of the respondents were married. This reflect the prevailing customs in many communities in the region in which women can only access land through marriage; despite the fact they constitute a sizeable proportion of farm workers.

The household sizes are generally between five and 10 in number across all communities. The proportion within the range varies between about 51% in Okpo and 60% in Imane. On the other hand, the proportion of respondents falling within < 5 person per household ranged between 20% in Ogugu and 30% in Imane, while value for the > 15 range between 1.6% in Imane and 3% in Ogugu. A large household size measures a number of working members. Generally, an increase in family size is likely to increase the probability of participation in agricultural production (Adesina, 1996; Nkamleu and Abesina, 2000).

As regards education, quite a high proportion of the respondents had never had any form of formal schooling. As much as about 7% in Okpo to 18% in Ogugu never had any form of educational training. The proportion with primary and secondary education range

Table 4.1:Demographic and socio-economic characteristics of the respondents

Characteristics of Respondents		Community*			
		Imane (%)	Okpo (%)	Ogugu (%)	Total
No of samples		60	60	60	180
Age (year)	< 20	6.3	8.7	9.0	8.0
	20- 29	25.3	29.5	22.7	25.8
	30- 39	33.5	30.3	34.0	29.1
	40- 49	19.9	19.8	16.9	22.4
	≥ 50	15.0	11.7	17.4	14.7
Marital status	Single	5.0	2.7	9	10.7
	Married	78.3	70.0	68.7	67.3
	Divorced	9.0	15.3	8.7	11.0
	Widow	7.7	12.0	13.3	11.0
Household size (persons)	<5	30.0	28.3	20.3	26.2
	5-9	60.1	50.7	56.7	55.8
	10-14	8.3	19.0	20.0	15.8
	≥ 15	1.6	2.0	3.0	2.2
Educational qualification	Illiterate	10.0	7.0	18.3	11.8
	non- formal education	23.3	13.0	30.0	22.1
	Primary	40.0	19.7	27.3	23.3

	Secondary	11.7	50.3	20.9	27.6
	Tertiary	15.0	20.0	3.5	12.8
Main occupation	Civil servant	26.7	6.7	10.0	13.5
	Farmer	46.7	56.7	66.7	56.7
	Business	10.0	16.7	6.7	11.10
	House wife	13.3	6.7	6.7	8.9
	Others	3.3	3.3	10.0	5.5
Farming experience (year)	< 10	18.2	21.4	20.3	20.0
	10-14	45.7	38.5	42.1	42.0
	15-19	21.3	30.6	19.7	23.9
	≥.20	14.8	9.5	17.9	14.1
	< 20	25.0	20.0	30.0	35.4
Monthly	20- 39	46.3	23.3	36.7	35.4
Income (N000)	40- 59	10.3	26.4	13.3	16.7
	60-79	8.3	23.8	10.0	14.0
	80-99	7.0	3.0	5.0	5.0
	≥100	3.0	3.5	5.0	5.2

(Project work 2021) values beneath are percentages except otherwise indicated between 20% in Okpo and 40% in Imane and between 12% in Imane and 50% in Okpo, respectively. The proportion with tertiary education ranged between about 4% in Ogugu and 20% in Okpo. Ordinarily, the more educated a person is, the more likely he/she would be ready to adopt new technologies (Norris and Batie, 1987; Kebede *et al*., 1990) that would enhance his/her status as a farmer. The comparatively low proportion of women with tertiary education vis a vis those with little or no education at all, in the present study, seems to suggest that an

educated woman would participate in agricultural production so long as better job offers, other than farming, is not available.

Quite a reasonable proportion of the farmers are new entrant to the farm business, with number of years since farm operation first began less than 10 years. However most of the farmers have spent reasonable years in the business. The proportion of farmers spending between 10 years and 20 years in farm operation ranged between 61% in Ogugu and 68% in Okpo. With increasing experience, a woman farmer may be able to better access benefits of farming.

Only small proportions of the respondents, across all communities, are Civil Servants, while greater proportions are farmers. With respect to income level, barring falsification by the respondents, in absolute term, the income level across all communities are low, and are a reflection of general poverty in the region, and Nigeria as a whole. From 43% in Okpo to 71% in Imane have income level of less than N40,000. On the other hand, only from 7% to 10% have income of over N80,000. All things being equal, the more the income, the easier to meet the technical and logistic needs in production and therefore the greater is the level of participation in agricultural production.

4.1.2 Characteristic of agricultural production system

Table 4.2: Characteristic of agricultural production system (values in percentages)

Feature		Imane(%)	Okpo (%)	Ogugu (%)	Total
Farm size (hectares)	≤ 1	12.6	10.5	8.9	10.7
	1.1-2.0	62.3	60.3	54.6	59.1
	2.1-3.0	18 5	23.5	24.1	22.0
	≥ 3.1	6.6	5.7	8.5	6.9
Agricultural products	Cereal crops	78.2	88.5	82.6	83.1

	Roots/Tuber	28.4	26.8	34.8	30.0
	Fishery	2.2	4.3	9.2	5.2
	Animal husbandry	34.5	24.1	23.2	27.3
	Horticulture	11.5	14.0	19.4	14.9
Tools employed	Traditional	63.4	72.4	73.3	69.2
	Mechanised/Modern	12.2	10.	19.7	13.9
Nature of involvement in agric activities	Directly	99.4	89.8	94.6	94.6
	Supervisory	23.5	15.8	12.2	17.1
Mode of farm land acquisition	Inheritance	18.4	12.1	17.6	16.0
	Family land	39.9	47.5	38.0	41.8
	Lease	2.7	10.7	10.2	7.8
	Purchase	4.3	10.9	9.4	8.2
	Gift	15.9	22.8	7,7	15.4
Source of capital	Personal savings	74.3	84.4	79.8	79.5
	Friends & relatives	15.3	20.3	23.1	19.5
	Lenders	10.3	16.9	17.4	14.8
	Microfinance Banks	2.4	1.0	0.0	1.1
	Gov.boost/empower.	0.0	0.0	0.0	0.0
Sources of farm input other than capital	Open market	25.8	38.3	29.0	31.0
	ADP	17.3	6.5	10.4	11.4
	Agric. Institute	5.4	1.7	5.1	4.0

	Friends & relatives	16.0	12.3	15.2	14.5
	Previous harvest	59.3	65.8	73.5	66.2
Labour source	Family/self	98.3	89.4	91.1	92.9
	Hire	23.1	16.6	35.8	25.1
Source of farming information	Friends & relatives	43.5	38	47.7	43.0
	Research institutes	5.6	10.2	8.2	8.0
	Print media	15.6	17.1	7.6	13.4
	Radio/television	32.9	32.0	29.8	31.5
	Cooperative society	15.1	11.1	23.3	16.5
Frequency of participation in agro-allied awareness programme	All the time	0.0	0.0	0.0	0.0
	Usually	0.0	0.0	0.0	0.0
	Seldom	1.3	3.3	6.3	3.6
	Never	98	96.7	93.7	96.1
Perception on government involvement in agricultural activity	Very satisfactory	2.3	0.7	4.5	2.5
	Satisfactory	4.7	11.4	1.4	5.8
	Unsatisfactory	58.3	35.2	61.4	51.6
	Very unsatisfactory	34.7	52.7	32.7	40.0
Rating of farming experience	Very satisfactory	45.1	39.7	48.5	44.4
	satisfactory	25.2	40.0	19,6	28.2
	Undecided	1.4	2.3	1.1	1.6
	Could be better	24.6	19.0	20.6	21.4

	Not acceptable	4.6	8.6	6.2	6.4

Project Work 2021

The proportion of farmers with less than one hectare of farm land ranged between 8.9% in Ogugu and 12.6% in Imane. Most farmer's hectare fall within 1.1 and 2.0, while only small proportion, < 8% has more than 3 hectares. Not only are the farmer's hectare small, but are usually fragmented, ie the same farmer having his farm land in bits and pieces in different locations. This is a reflection of lack of enough resources, capital, land, labour etc, for operation.

Crop cultivated by farmers varies, and in different combinations. Generally, however, mostly commonly cultivated crops are cereals, such as maize, millet and sorghum, and root crops such as yam, cocoyam and cassava. The major staple food is maize, millet and sorghum; while other cereals such as wheat and millet are used to earn cash income. Other cash crops cultivated are pepper, soya bean and potato. Also, respondents are engaged in animal production for food and marketing. Quite a significant number of the farmers (%) keep domesticated animal, in particular, sheep and goats, and few of pigs and chickens. In the growing or wet season, the goats, sheep, and pigs are tied around the houses or kept in pens where food is brought to them. This prevents the animals from damaging or eating up the crops on the farm. In the dry season, these animals are allowed to roam and graze freely in the open fields, including freshly harvested farms. A small number of the farmers are also into fishery (5%), and as high as 15% are into horticulture.

Nearly all the farmers interviewed rely solely on the use of traditional hand-held hoe and cutlasses in their farm operations (99%), while only an insignificant proportion supplement that with mechanical cultivation and use of herbicides. Similarly, nearly all the farmers (98%) reported direct involvement in all aspects of the farming operations, as against the very few who said they play mainly supervisory role (2%)

Mode of land acquisition available to the women farmers are inheritance and communal/family. The 1978 Lane Use Decree, which vested all land comprising the territory of each state in the Military Governor, has, as elsewhere in Nigeria, made little

difference in the customary or traditional form of land tenure in the area. The customary practice distinguishes between communal and individual land rights. Community land is thought to belong to the whole village. The allocation and use of uncultivated land within village boundaries is controlled by village head. Clearing of virgin land establishes ownership and user rights as long as the land remains under cultivation. Individual tenure is acknowledged and regulated by patrilineal inheritance patterns. Other means of land acquisition are gift, purchase, loan and sale; most of which, however are out of reach of the female farmers

The dominant source of capital for farm operation by the interviewed women farmers is personal savings (85%), which giving the income level must be extremely meagre. This is followed by money obtained from friend and relatives, either as gift or loan (23%). Other sources of funding farming operations are loan from bank and government support. This latter category of sources of funding, however are similarly poorly developed and out of reach of majority of the women farmers over the study area. A recurrent complaint of nearly all the farmers interviewed is lack of cash to buy inputs or hire services. More surprising is farmer's perception of a virtual absence of credit institutions accessible to them to obtain the required cash. They complaint that the credit schemes for the provision of small loans under soft condition, is insufficient to attend their present demands. On the other hand, there is no established informal credit system. There are no reported cases of significant sums of money lent by rich farmers, businessman, traders or middlemen to small farmers.

Most women farmers obtained the farm inputs, such as pesticides, seeds, farm instruments etc from traders in open markets. Seeds in particular come from previous harvest by the farmers (66%).Inputs are also often source from friends and relatives, and Agricultural Development Programme (ADP) agro-shops. Generally, the supply and availability of seeds, chemicals and farm implements does not seem to be a major constraint to the farming system. What does pose serious constraint is supply of fertilizers. The distribution and sale of fertilizer is completely controlled by the government. The requirements of fertilizer at national levels are supplied by both internal production and government imports. Domestic trade of fertilizer by private agents is officially banned. However there is an extended practice of illegal sales of the commodity in the black market at higher prices than the official ones. Virtually all the

farmers interviewed mentioned lack of fertilizer as one of the most serious problems affecting them. The insufficiency of supply of fertilizers on one hand, and the lack of working capital on the other hand, are the major causes for a limited use of fertilizers. Small farmers do not own tractors. They hire them mostly from private farmers, and everywhere, there are complaints of insufficient tractor services. A number of farmers own or rent work-bull.

Most farmers rely mainly on family labour (93%). The proportion of families who employ contracted labour of any kind is small (25%). The family labour comprises the nuclear family as well as relatives, i.e. members of the extended family. Children from the age of eight or above are a source of labour and help in most farm work. Beside for farming, labour markets operate in the town construction works. Some small family farmers as well hire out their labour specially at farming peak times when the higher demand for labour increases wage earning opportunities, or to construction works during dry season, when farm work is light or partially suspended.

Sources of information for the women farmers are mostly friends and relatives (43%) and radio/television (32%). The cooperative society, print media and research institution sources are relatively poorly developed in the study area. In the same vain, activities of extension services are poor. Nearly all the women farmer interviewed admitted they have never attended any training programme on farming operations. The perception of the female farmers on government involvement in agricultural activity is similarly poor and unsatisfactory. However, most farmers encounter perceived and rated themselves very high on issue relation to their farming experiences. Most rated their individual experiences satisfactory (28%) or very satisfactory (44%), but also that it could be made better (21.4).

4.1.3 Determinants of Women Interest and Level of Agricultural Activities

Table 4.3 shows the Likert-Scaleof respondents onthe socio-economic determinants of women farmer participation and level of participation or productivity and profit in agricultural activities in the study area. The result show considerable variation. With respect to participation, the following factors are the most highly rated: accessibility to inputs/credit, availability of capital, ease of agricultural process, profit/revenue, market/sale prospect, access to information, profit/revenue, off-farm income As much as 80% of the respondent women farmer in this study “agreed” or “very

strongly" agreed for the factorsrespective influence. Factors, such as year of experience, land tenure, agricultural products, passion for farming and unemployment received moderate ratting, with about 50 to 60% of respondents "agreeing" or "strongly agreeing" for the factorsrespective influences. By contrast, variable such as training/extension services, neighbours/friends/Women groups, inherited farmland and level of education, show low rating, with proportion of the respondents that "agree" or "strongly agree" to their respective influences consistently less than 30%.

With respect to level of participation or the productivity and profit, overall, five factors, namely availability of capital, ease of agricultural process, profit/revenue, size of household, and off-farm income, stand out the most highly rated. This is followed by land availability, size of farmland, land tenure, tools and passion for farming, which received moderate rating. On the other hand factors such as level of education, training/extension service and membership of cooperatives, received the lowest rating.

Table 4.3:Likert-Scale of determinants of women participation and level of participation in agricultural activities*

s/No	***Factors***	**Participation**					**Level of participation**				
		A	**B**	**C**	**D**	**E**	**A**	**B**	**C**	**D**	**E**
i.	Availability of capital	76.8	22.9	0.0	0.3	0.0	80.1	12.0	2.1	2.0	4.0
ii.	Availability of farm lands	47.0	25.4	14.0	8.8	4.8	38.6	33.0	6.9	12.4	9.1
iii.	Market/Sales prospect	46.4	23.7	8.1	6.8	15.0	77.4	7.8	2.8	11.0	1.0
iv.	Accessibility to inputs/credit	83.3	12.1	3.6	1.0	0.0	72.0	15.0	8.1	5.1	0.0
v.	Ease of agricultural process	71.8	21.0	4.1	2.8	0.4	45.0	35.4	1.3	12.8	5.5
vi.	Level of education	4.8	12.9	11.0	30.8	40.5	15.0	5.5	4.6	7.8	67.0
vii.	Training/Extension services	13.0	11.4	12.5	41.8	21.3	14.3	17.6	10.9	11.7	45.5

viii.	Size of household	1.5	11.0	6.6	13.9	67.0	45.5	25.9	1.1	15.0	12.5
ix.	Size of farm land	14.3	23.0	4.5	34.6	23.6	45.8	19.8	3.5	23.9	7.0
x.	Land tenure	32.7	37.4	7.7	9.5	12.7	41.0	27.3	0.8	16.4	15.5
xi.	Year of experience	34.4	29.7	10.0	10.2	15.6	23.6	17.6	6.0	17.9	34.9
xii.	Agricultural product	24.5	36.2	1.9	22.9	14.5	45.8	22.7	7.4	23.0	1.1
xiii.	Tools	12.9	5.9	7.8	7.4	66.0	56.4	10.3	8.7	13.5	12.0
xiv.	Membership of Cooperatives	12.9	5.9	7.8	7.4	66.0	0.5	11.0	14.0	23.7	50.8
xv.	Neighbours/friends/Women groups	9.9	7.9	14.4	23.8	44.0	20.4	23.8	10.0	33.0	12.8
xvi.	Access to information	39.7	39.5	6.7	7.5	6.9	27.3	50.0	2.7	9.7	10.3
xvii.	Passion for agriculture	30.5	33.0	10.4	24.2	1.9	30.7	22.0	5.0	20.3	22.0
xviii.	Profit/revenue	71.0	23.0	5.0	1.0	0.0	56.4	30.1	0.5	7.3	6.7
xix.	Off-farm income	33.0	40.1	3.0	11.0	12.9	51.6	27.9	3.8	5.2	11.5
xx.	Unemployment	12.9	36.9	10.0	8.2	31.0	12.7	25.4	2.0	29.4	30.5

(Project Work 2021)

A. Strongly agree

B. Agree

C. *Neutral*

D. *Disagree*

E. Strongly disagree

Studies have shown that the level of education represents household human capital endowment; an increase of which will strengthen the ability of engaging in other livelihood options (Eneyew, 2012; Asmah, 2011). The results obtained in this study are contrary to this,

however, in that the level of education does not appear to support both the decision to participate in agricultural activities and that of the level of participation. Women with secondary and tertiary education are less likely to increase the extent of participation but rather would want to secure white collar job in the city.

Extension is rated relatively insignificant on the level of women participation in agriculture. This is quite expected, since most of the women interviewed claimed they have never come in contact with any extension agent. This goes to support the claim of women being side-lined in important agricultural policy matters. Agricultural extension seeks to improve the know-how of farmers, through education and communication in farmers‟ attitude, knowledge and skills. As such, the role of agricultural extension involves information dissemination, capacity building of farmers through the use of a variety of communication methods and assisting farmers in making informed decisions (Koyenikan, 2008). Nevertheless, it has been observed that in most parts of Africa, there has been a failure of government extension workers to reach women farmers, and even worse still, the cultural bias existing in most countries has hindered women from actively participating in training sessions and extension meetings. Access to agricultural training only influences the extent of participation. Khatun and Roy (2012) also found the evidence of the positive effect of training by extension agents on participation to other livelihood options.

The agricultural product variable, crop and animal husbandry, rated high both with the decision to participate and the extent of participation in agricultural activities. Montshwe (2006) found that producing cattle increases the probability of participation, thus, households who produce grains and livestock will have to augment their incomes from alternative livelihood activities.

The size of land variable did not rate high with the decision to participate in agricultural activities but rate high with the extent of participation. This finding implies that women farmers with a larger farm land are more likely to increase the extent of their participation in agricultural activities. This result is somewhat inconsistent with Eneyew (2012) and Kuwornu et al. (2014) who found strong evidence of the negative effect of farm size on increased activities. In this case, farmers with large farm sizes tend to move their objectives towards participation/intensification.

The household size was also perceived not to influence the decision to participate in agricultural activities, yet it influenced the extent of participation. These findings concur with those of Agrawal and Gupta (2005) who found that household size also has a strong statistically significant relationship with levels of participation; meaning that smallholder farmers with a high number of people in their household are most likely to increase their extent of participation and the adoption of improved methods of farming.

Increase in Income of households was also rated high for level of participation. This result is not consistent with Simtowe (2010), and Babatunde and Qaim (2009) who found that high-income earners can easily mobilize productive resources and are more likely to raise participation level than low-income earners. However, Beyene (2008) argues that the majority of farmers receiving off-farm income use the income for their consumption, while very few farmers use the off-farm income for investment in farms.

Regarding the farming experience variable, the results show that women farmers with more farming experience were more likely to participate, but less likely to intensify participation. These findings concur with those of Okoye et al. (2009) and Tarawali et al. (2012) who found an experience that farming experience influences participation.

The land tenure variable shows high rating with the decision to participate, suggesting that farmers with title deeds are more likely to participate compared to their counterparts. This implies that land ownership increases the possibility of farmers investing in their farming land, which also increases the probability of participating. This may be probably due to expected returns from the agricultural activities.

Profit and revenue was associated with an increasing probability of the decision to participate in agricultural activities and increase the extent of participation. This implies that if the profit and revenue increases, the farmers will be encouraged to raise level of operation. The results concur with common business norm.

Finally, access to information was found to have a high rating with the decision to participate in agro-processing but not the extent of participation. This implies that farmers with access to information were more likely to participate. However, Kuwornu et al. (2014)

found no relationship between group membership which is mostly a source of information and intensification of farm activities.

4.1.4 Challenges of Female Farmers

Table 4.4:Likert-Scale of determinants of challenges of women farmers*

S/No	Factors	Strongly Challenging	Quite challenging	Undecided	Slightly challenging some what	Not at all
i.	Cultural barriers	23.5	47.5	3.5	15.9	9.5
ii.	Gender bias	67.4	23.5	1.8	2.8	4.5
iii.	Inadequate capital/credit facilities	78.4	13.4	0.0	7.3	0.9
iv.	Lack of awareness	53.5	23.0	6.1	14.7	2.7
v.	Lack of fertilizers	44.6	31.0	7.5	15.4	1.5
vi.	Lack of government support	52.4	30.0	3.1	9.9	4.6
vii.	Limited access to land	24.6	28.9	5.3	21.7	19.5
viii	Poor disease/pest control	30.5	29.0	9.2	18.8	12.5
ix.	Poor weather conditions	37.4	42.9	7.4	6.8	5.5
x.	Shortage of labour	55.0	25.0	2.2	9.0	8.8

(Project Work 2021)* Values are percentages (of respondents), with n = 180

Table 4.4 shows the respondent's answers to challenges faced by women farmers in the study area. The most highly rated problem are inadequate capital/credit facilities and gender bias in which over 90% of the respondents considered respectively"strongly challenging"or"quite challenging". This is followed by lack of government support (82%), poor weather conditions (80%) and shortage of labour (80%). Other highly rated factors are lack of awareness (77%), lack of fertilizers (76%), and cultural barriers (71%). The least rated, but equally significant, factors are limited access to land (53%) and poor disease/pest control (60%). Even though there are laws and policies which regulate some of the apparent and perceived barriers to women farmers, it has been noted that systemic gender based biases are one of the major issues limiting women in engaging and accessing agriculture related resources. These and some other variables are discussed in the preceding section.

Conclusion

This study examines the socio-economic factors influencing the participation of women in agricultural production. The study makes the following contributions to the theoretical and empirical literature, as well as to proving insight into women farmers' participation in agriculture. First, though this study is focused on Olamoboro LGA of Kogi State, it has implications for Nigeria and developing countries generally, with the agenda of improving smallholder farmers' livelihood using agro-processing activities. Thus, the factors revealed in this study could be explored in formulating the planning strategies and implantation processes for development programs aimed at improving smallholder farmers' livelihood through participation in agro-processing activities. Second, this study provides an empirical contribution to the existing literature. To the best of the author's knowledge literature on factors influencing participation in agriculture in the study area are not explored. Hence, by identifying factors significantly influencing smallholder farmers' choice to participate in agro-processing, this study provides an empirical contribution to the existing literature.

5.3 Recommendation

Irrespective of the problem facing women in agriculture in the present study area, they have over the years come to prove that they have and are ready to play a serious role in the male dominated agricultural sector if they are given the right avenue and opportunity

to do so. As such, there is an urgent need to exterminate the gender bias issue that holds these women down. Only when this is achieved can women start contributing significantly to policy making and governance.

The study also recommends that funds should be provided by the government or the relevant bodies involve in agricultural developments in other to tackle the issues of Fertilizers, disease control and pests, inadequate capitals/credits facilities. This would help to reach the MDG 1 on halving the share of poor people, and especially the newly introduced target on productive employment and decent work for all. Indeed, many of the measures that would be required are not costly to implement it will also strengthen women's role within the family. All these measures are crucial to guaranteeing food security and improving the nutritional status of children.

In the longer term, government can address the problem both of gender inequality and balance of payments stresses by directing government funding toward resources for women farmers. Well-targeted expenditures will help women farmers increase their productivity, providing more food for families and reducing the demand for imports. Examples of ways to help women include expanding their access to credit and inputs, as well as technical assistance. By increasing agricultural productivity of women, governments would be helping to raise output and lower food prices. This would reduce inflationary pressures and the demand for imports. Moreover, investments that benefit women farmers in the short run will raise their income, helping attenuate the other negative effects of the crisis that they will experience. At the same time, government policies that help to stabilize commodity price fluctuation can shield farmers from resulting income variability.

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