

Analysis of Women Participation in Agricultural Production in Egbedore Local Government Area of Osun State, Nigeria

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Abstract: This study analysed women participation in agricultural production in Egbedore Local Government Area of Osun State, Nigeria. It investigated the women's access to economic resources and examined the influence of selected socio-economic characteristics of women and access to economic resources on their participation in agricultural production. Multistage random sampling technique was used to select 50 respondents for this study. The research was carried out with the use of well structured interview schedule to obtain the necessary data. Both descriptive and inferential analytical tools were employed. Probit analysis was employed to investigate the determinants of women participation in agricultural production in the study area. The empirical results revealed that household size, marital status and local taboos had significant impact on the women participation in agricultural production; all at 5% probability level with a log likelihood of -96.160222, pseudo R² of 0.0875 and LR statistic of 18.44 which shows that the model has a good fit. Most of the respondents were illiterate with non-formal educational status which directly informed their participation in agricultural production. The study concludes that there is high rate of involvement of women in agricultural production in the study area; hence the role of some socio-economic variables as well as assets such as social capital, landed-property, cash as well as savings are central in determining the participation level or perception on agricultural production.

Keywords: Women participation, Agricultural production, Egbedore, Probit analysis

INTRODUCTION

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

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). According to Anne and Mary (1998), the early studies legitimized the idea of women as productive partners in agriculture, discovering and documenting the various roles played by women as farmers, farm wives, and agricultural professionals and recounting the stories of successful women in these roles. Nigerian women are saddled with most of the tasks in agricultural production 'supposedly' meant for the man but the benefits gained by them are not commensurate to the man-hours they spend on the task. Despite the dominant and important role women play in agricultural production in the country, they are hardly given any attention in the area of training and/or visitation by extension agents with improved technologies. Banks hardly grant them loans and they are hardly reached with improved seeds,

fertilizer and other inputs (Damisa, Samndi and Yohanna, 2007) citing (Saito and Spurring, 1992). These conditions have entrenched the women in a vicious cycle of poverty that places them at a less advantageous vantage of income and resource empowerment. Few Nigerian women are engaged in top management cadre of formal sector establishments simply because majority of them lack the educational qualifications necessary for such positions. There is a long history of women participation in productive labour in Nigeria. In traditional communities, women like their 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 suggest 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 land-tilling, clearing, 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. Sharon (2008) viewed that both women and men play critical roles in agriculture throughout the world, producing, processing and providing the food we eat. 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 percent 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.

Fabiyi, Danladi, Akande, and Mahmood (2007) quoting Folasade (1991) on 'the role of women in food production' submitted that lack of separate land for women and inadequate

contact with extension agents are serious constraints faced by women farmers. Women very rarely own land in Nigeria, despite their heavy involvement in agriculture. Because women generally do not own land or other assets it has traditionally been difficult for women to obtain Bank loans or other forms of credit through the banking system. Land tenure system is largely by inheritance. This lack of title to land prevents women from exercising or improving their expertise in crop production and animal husbandry because of security of tenure. 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 engaged 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 (Fabiyi et al., 2007).

Objectives of the Study

The main objective of this study is to analyze women participation in Agricultural production in Egbedore L.G.A. of Osun State.

The specific objectives are to:

 identify the personal and socioeconomic characteristics of the respondents.



- determine the women's access to economic resources (including access to capital, land, natural resources, credit and savings programmes), technical and professional skills information.
- examine the influence of selected socioeconomic characteristics of women and access to economic resources on their participation in agricultural production.
- 4. identify the constraints militating against women participation in agricultural production.

Hypothesis of the study

Null hypothesis (H_o): There is no significant relationship between selected socio-economic characteristics of women, access to economic resources and the level of their participation in agricultural production.

LITERATURE REVIEW

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 Programme (UNDP) in which the study revealed that women make up 60-80 percent of the agricultural labor force in Nigeria, depending on the region, and produce two-thirds of the food crops. Yet, despite the 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.

Probit Model

A lot of research has been carried out on the influence of socio-economic variables on farmers' adoption decision especially in agricultural participation. In most cases, the use of Probit, Tobit or Logit was applied (Damisa et al., 2007). Farmers were assumed in these models to make adoption decisions based on an objective of utility maximization. If a farmer has options of U_i and U_{ii}; then the farmer would either prefer U_i to U_{ii} or would be indifferent. Given agriculture as an occupational technology, socio-economic demographic and characteristics of the woman may influence her participation decision and this in turn is likely to influence the level of her participation in agricultural production; hence, a Probit model was used to capture the participation process. Probit modelling is used for explaining a dichotomous dependent variable with the empirical specification formulated in terms of latent response variable (Damisa et al., 2007) quoting (Verbeke et al., 2000). Defining Yí as the utility index of participation in agricultural production then Yi is a function of the socioeconomic and demographic characteristics of the woman: Yi = 1 for woman to participation in agricultural production and Yi = 0 for nonparticipation in agricultural production. Where Y* is the latent or unobservable variable. According to Damisa et al., (2007), the observable variable is a dummy representing the agricultural participation decision of the woman; that is, Y = 1 if Y*>0 and Y = 0 otherwise; since utilities are random, the i-th woman farmer will agree to participate in agricultural production if and only if U_i ^ U_{ii}, for the i-th woman therefore, the probability of participating in agricultural production is given by the utility maximization function.

METHODOLOGY

The Study area

The Study area is Egbedore Local Government Area of Osun State; having its headquarters in an ancient town named Awo. It is located in a warm tropic region of the rain forest of the South Western Nigeria. And, it experiences an average monthly rainfall of 25mm between May and July and 2.5mm between December and January. Also, the study area covers an approximately 102 sq km which is bounded by Ede North L.G.A to the south, Ejigbo and Surulere L.G.As to the West, Irepodun L.G.A to the North and both Olorunda and Osogbo L.G.As to the East. In addition, the study area being located in plain and hilly terrains with beautiful climate and favourable vegetation is noted for agricultural activities.

Majority of the farmers engage in large scale production of food and cash crops such as Cocoa, Palm-products, Kolanut, Orange, Banana, Maize, Yam, Cassava, Cocoyam e.t.c. Although, peasant farming is predominant in the area, a sizeable percentage of farmers engage in other forms of agricultural practices like Poultrykeeping, animal husbandry, fishing and beekeeping. Other occupations of the people include blacksmithing, hunting, dyeing, weaving among many others. The Local Government area comprises of the following historical and notable towns and villages: Ido-Osun, Ara, Iragberi, Ojo, Ikotun, Ilawe, Iwoye, Idoo, Ofatedo, Okinni, Aro, Ekuro, Olorunsogo, Ooye, Ilaasan, Igbokiti, Abudo and many others. People in the L.G.A are predominantly Yorubas of Oyo extraction. The historical profile shows that the indigenes of the area are direct descendants of Oduduwa or notable members of the ancestral ruling houses in the old Oyo kingdom. Yoruba is the common spoken dialect.

Sampling procedure and sample size

From the identified towns/ villages in the Local Government Area, 10 of them were randomly selected. In the second stage, five registered female farmers from each of the selected villages were randomly chosen and interviewed for the purpose of this study. Thus, a total of 50 women were used for this study.

Research Instrument

The instrument used for data collection is structured interview schedule. Information collected were on socio-economic characteristics of respondents, agricultural activities engaged in, as well as level of access to economic resources.

Data analysis

Descriptive Statistics: Such as percentages and frequency distribution tables were used to analyze data on selected personal and socio-economic characteristics of the women, their access to economic resources, technical and professional skill information (extension services).

Inferential Statistics: Probit model was used to analyze the relationship between selected socio-economic characteristics of the respondent women and their participation in agricultural production. Women participation in agricultural production was assigned a discrete choice variable (yes or no) where a selected woman was asked to individually indicate whether she participates in agricultural production or not.

Model specification

According to Oni, Oladele and Oyewole (2005), the probit model is expressed as:

$$Y = B_o + B_i X_i + e_i$$

Where Y is dichotomous dependent variable which can be explained as;

Y = 1, if women participate, Y = 0, if women did not participate,

 B_o = the intercept

 B_i = regression coefficients that explain the probability of participation by women farmers, e_i = the error term.

Given agriculture as an occupational technology, the socio-economic and demographic characteristics of the women farmers may influence the level of their participation in agricultural production (Damisa *et al.*, 2007).

 X_i = Vectors of parameters to be estimated, i.e independent variables (i =1, 2, 3...11) where:

 X_1 = Age (years), X_2 = Level of education (Years of formal education) , X_3 = Household Size (Actual number), X_4 = Level of Disposable Income (Naira), X_5 = Land tenure right (Dummy; Yes =1, No = 0) , X_6 = Marital Status (Dummy; Married = 1, Otherwise = 0), X_7 = Years of experience in farming (years), X_8 = Distance of the women's farm from homestead (Km), X_9 = Access to subsidized Inputs (Dummy; Yes =1, No = 0), X_{10} = Access to credit facilities (Dummy; Yes =1, No = 0), X_{11} = Taboo (Dummy; Yes =1, No = 0).

RESULTS AND DISCUSSION

As shown in Table 1, majority (52.0%) of the respondents fall between age range of 41-50 years which simply means that they are within the active and productive age while most of them have no formal educational attainment. It was revealed that 78.0% do not have land tenure rights which connotes that, majority of them operate on rented, leased or borrowed farmland. There is inadequate extension service delivery in the study area as most of the respondents (74.0%) reported lack of access to extension services. The overall perception on participation in agricultural production was positive as most of them see it as non-gender vocation. Agricultural production constraints faced by the respondents are lack of capital, lack of government support, poor weather condition and diseases; 30.0% claimed lack of capital while 46.0% claimed combination of the listed production constraints. Mindset and land tenure rights were identified as participation constraints by 48.0% and 28.0% of the respondents respectively.

Table 1: Socio-economic Characteristics of the respondents

Variables	Frequency	Percentage	
Age			
31-40	17	34.0	
41-50	26	52.0	
51-60	4	8.0	
Above 60	3	6.0	
Educational level			
Non-formal	33	55.0	
Primary	11	27.0	
Secondary	6	16.0	
Land tenure			
rights			
No	39	78.0	
Yes	11	22.0	
Access to			
extension services			
No	37	74.0	
Yes	13	26.0	
Participation			
perception			
Negative	11	22.0	
Positive	39	78.0	
Agricultural			
production			
constraints			
Lack of capital	15	30.0	
Lack of	3	6.0	
government			
support			
Poor weather	9	18.0	
condition and			
Diseases			
Combination of	23	46.0	
above factors			
Participation			
constraints			
Land tenure rights	14	28.0	
Gender inequalities	5	10.0	
Mindset	24	48.0	
Combination of	7	14.0	
above factors			
Total	50	100	

Source: Field survey, 2009

Probit Estimates of selected explanatory variables

The probit model was used to examine the influence of selected socio-economic characteristics of women and access to economic



resources on their participation in agricultural production. The model does this by estimating the log likelihood of the explanatory variables that influence the dependent variable; the level of significance and true relationship of this influence is also appropriately estimated and indicated by the model.

The empirical estimation of the Probit analysis result as presented in Table 2 reveals a log likelihood of -96.160222, pseudo R^2 of 0.0875 and LR statistic of 18.44, all significant at 5 percent probability level; this shows that the model has a good fit. Considering p>|z| values for all the variables included in the model as shown in table 2, only X_3 , X_6 , and X_{11} are significant and they are all significant at 5 percent α-levels; having confidence interval of 95 percent each. The implication of these from the finding is that increase in the level of any of the explanatory variables with positive sign, X_{11} in this case will have a positive effect on the women participation in agricultural production, whereas those explanatory variables with negative sign, X₃ and X₆ will exert a negative relationship on women participation perception in agricultural production. However, taboo (X_{11}) being positive and significant at 5 percent indicates that, it is a strong factor considered for women participation in agricultural production; although its coefficient being positive is contrary to apriori expectation because it is expected to be contributing negatively to participation, the positive sign could be attributed to more emphasis being placed on both crop and animal production other than animal production only

which mainly focuses on piggery. However, household size (X_3) and marital status (X_6) are negatively significant at 5 percent α-level respectively; this means that, they are both important factors towards participation in agricultural production but their negative coefficients is at variance with a-priori expectations and findings of (Damisa et al; 2007) because, household size should measure number of working members; generally, an increase in family size is likely to increase the probability of participation in agricultural production; all things being equal; this probably means that, younger members of the households are not participating actively in agricultural production because youths of modern days prefer white-collar jobs. In the same vein, most of the respondents are married and as such marital status has a direct relationship with household size. All other estimated variables, that is: X₁, X₂, X₄, X₅, X₇, X₈, X_{9} , and X_{10} were found to have no significant statistical effect on the dependent variable.

In conclusion, some of these findings are contrary to a prior expectations and findings of (Oni et al., 2005 and Damisa et al., 2007) but may be explained by insincerity on the part of the respondents; thinking that, government inadequacies could better be expressed by inaccurate responses. Poor record keeping and the use of memory estimates by the respondents also contribute to the little deviation from the apriori expectations experienced.

Table 2: Probit Estimates of selected explanatory variables on the dependent variable

Variables	Coefficient	Standard Error	Z statistics	P-value
Constant	1.797291	1.1019832	1.76	0.078
Age (X_1)	-0.017307	0.0216464	-0.80	0.422
Education (X ₂)	0.2279989	0.1708957	1.33	0.182
Household size (X ₃)	-0.5673548	0.277094	-2.05	0.041**
Income (X ₄)	8.09e-08	2.12e-06	0.04	0.970
Tenure right (X_5)	-0.0730558	0.2783172	-0.26	0.793
Marital status (X ₆)	-0.3293294	0.170241	-1.93	0.053**
Years of experience (X ₇)	0.1143045	0.1664658	0.69	0.492
Distance travelled (X ₈)	-0.0363675	0.194804	-0.19	0.852
Access to subsidized input	0.0176362	0.2374294	0.07	0.941
(X_9)				
Access to credit facilities	0.3985417	0.2938333	1.36	0.175
(X_{10})				
Taboo (X_{11})	1.797291	0.3126904	2.19	0.029**

Source: Field survey, 2009

Log likelihood = -96.160222, LR statistic = 18.44, Pseudo R² = 0.0875, Prob > chi² = 0.0719

CONCLUSION AND RECOMMENDATIONS

The women in the area of study see agriculture as the major means of livelihood and therefore put high expectation of returns on the occupation. Majority of the women farmers are between the ages of 47 and 50; this might have accounted for the negative coefficient of the age variable; also, most of the respondents have nonformal educational status and it is expected that, the higher the education level of the woman farmer, the more the likelihood of her to out- migrate to seek for better placed employment. Then, household size, marital status, and taboo have significant influence on women participation; this is so because marital status is directly related to household size and this thus dictates, to some extent, the availability of labour for agricultural activities. Then, taboo is also a significant variable; this forbids them from cultivating certain crops and rearing a particular animal; and as learnt, this has cultural and religious attachment. Years of experience on the other hand, has an insignificant influence on the level of women participation in agriculture; also is the subsidized input, this is quite expected since the women interviewed claimed they have never come in contact with any extension agent through whom they believe subsidized inputs will reach them. This goes to support the claim of women being side-lined in important agricultural policy related issues. The empirical estimation of the probit analysis shows a log likelihood of -96.160222, pseudo R^2 of 0.0875 and LR statistic of 18.44, all significant at 5 percent probability level; this shows that the model has a good fit. Considering p>|z| values for all the variables

^{**} Significant at 5% probability level

included in the model, only X_3 , X_6 , and X_{11} are significant at 5 percent α-levels each. The implication of all these from the finding is that increase in the level of any of the explanatory variables with positive sign, X_{11} in this case will have a positive effect on the women participation in agricultural production, whereas those explanatory variables with negative sign, X₃ and X₆ will exert a negative relationship on women participation perception in agricultural production. Hence, the study concludes that, there is high rate of involvement of women in agricultural production in the study area; though the output does not justify this. This study shows the picture of how the women in Egbedore Local Government Area of Osun State engage in agricultural production; variables such as household size, marital status, and taboo were shown to have significant effect on women participation perception. Also, this study pointed out that, the role of some personal and socioeconomic variables as well as assets such as social capital, landed-property, cash, as well as savings is central in determining the women participation in agricultural production; therefore, the Null hypothesis is hereby rejected.

Recommendations

- There is need for mass enlightenment programme on the need for active participation in agricultural production irrespective of educational status.
- 2. Government should encourage efficient and sustainable use of the existing cultivable land, by further investing in agricultural research and extension, with a view to increase the agricultural output as well as the corresponding income for households especially for those investing in commercial agriculture. By so doing, extension visits will afford the farmers the

- opportunity to have access to subsidized inputs and this will boost their level of participation in agricultural production.
- 3. Because of the respondents' involvement in social organizations which primarily focuses on thrift and credit activities; there is need for adequate training on money management so that credit facilities obtained can be properly channelled to agricultural production and other useful purposes for which it is meant.

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