

Factors influencing women farmers' participation in agricultural cooperatives in Ondo-State, Nigeria

Factores que influyen en la participación de mujeres agricultoras en las cooperativas agrícolas del estado de Ondo, Nigeria

Fatores que influenciam a participação de mulheres agricultoras em cooperativas agrícolas no Estado de Ondo, Nigéria

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DOI: <http://doi.org/10.15359/prne.22-43.7>

Fecha de recepción: 10/08/2023 ● Fecha de aceptación: 19/03/2024 ● Fecha de publicación: 27/06/2024

ABSTRACT

Cooperative societies provide channels for sharing of input where women farmers can pool their limited resources together to maximize agricultural output and food security in rural areas. This study, therefore, analyzed

RESUMEN

Las cooperativas proporcionan canales para compartir insumos donde las mujeres agricultoras pueden unir sus recursos limitados para maximizar la producción agrícola y la seguridad alimentaria en áreas rurales. Este



factors influencing women farmers participation in agricultural cooperatives in Ondo State, Nigeria. The specific objectives of the research were to describe socio-economic characteristics of women farmer's participation in agricultural cooperative societies, determine the level of participation of women farmers in agricultural cooperatives and examine factors that motivate participation. Data were analyzed using descriptive statistics, Likert type scale, and Pearson Product Moment Correlation analysis. The results revealed that women farmers in the study area were average aged (42.9 years) and mostly possessed tertiary education (38.3%), mean annual income (₦777,846) with farm size (0.8 hectares). The level of participation in agricultural cooperative is high (60.4%). Accessibility to loan (M. S= 3.50), getting information (M. S= 3.42) and input facility (M. S= 3.40) were top most factors that influenced participation in cooperatives among the women. At $P < 0.05$, Age, marital status and income realized per annum were positively significant to the level of participation in cooperatives. The study recommends the timely provision of loan to enable women farmers expand the scope of their farming activities, increased access to training programs for women farmer leaders in cooperatives as well as extension education should also be intensified.

Key words: women farmers, agricultural cooperatives, participation, factors, level

estudio analizó los factores que influyen en la participación de las mujeres agricultoras en cooperativas agrícolas en el Estado de Ondo, Nigeria. Los objetivos específicos de la investigación fueron describir las características socioeconómicas de la participación de las mujeres agricultoras en las sociedades cooperativas agrícolas, determinar el nivel de participación de las mujeres agricultoras en las cooperativas agrícolas y examinar los factores que motivan la participación. Los datos fueron analizados utilizando estadísticas descriptivas, escalas tipo Likert y análisis de correlación de Momento Producto de Pearson. Los resultados revelaron que las mujeres agricultoras en el área de estudio tenían una edad promedio (42,9 años) y en su mayoría poseían educación terciaria (38,3%), ingresos anuales promedio (₦777.846) con un tamaño de finca de (0,8 hectáreas). El nivel de participación en cooperativas agrícolas es alto (60,4%). El acceso a préstamos (M. S= 3,50), obtener información (M. S= 3,42) y las facilidades de insumos (M. S= 3,40) fueron los factores más importantes que influyeron en la participación en cooperativas entre las mujeres. Con $P < 0,05$, la edad, el estado civil y los ingresos anuales fueron significativos de manera positiva para el nivel de participación en cooperativas. El estudio recomienda la provisión oportuna de préstamos para permitir que las mujeres agricultoras amplíen el alcance de sus actividades agrícolas, se aumente el acceso a programas de capacitación para líderes agrícolas femeninas en cooperativas, así como también se debe intensificar la educación extensionista.

Palabras clave: mujeres agricultoras, cooperativas agrícolas, participación, factores, nivel

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RESUMO

As sociedades cooperativas proporcionam canais para compartilhamento de insumos onde as mulheres agricultoras podem reunir seus recursos limitados para maximizar a produção agrícola e a segurança alimentar em áreas rurais. Este estudo analisou, portanto, os fatores que influenciam a participação das mulheres agricultoras em cooperativas agrícolas no Estado de Ondo, Nigéria. Os objetivos específicos da pesquisa foram descrever as características socioeconômicas da participação das mulheres agricultoras em sociedades cooperativas agrícolas, determinar o nível de participação das mulheres agricultoras em cooperativas agrícolas e examinar os fatores que motivam a participação. Os dados foram analisados usando estatísticas descritivas, escala tipo Likert e análise de correlação de Momento Produto de Pearson. Os resultados revelaram que as mulheres agricultoras na área de estudo tinham idade

média (42,9 anos) e em sua maioria possuíam educação terciária (38,3%), renda anual média (₦777.846) com tamanho de fazenda de (0,8 hectares). O nível de participação em cooperativas agrícolas é alto (60,4%). Acessibilidade a empréstimos (M. S= 3,50), obtenção de informações (M. S= 3,42) e facilidades de insumos (M. S= 3,40) foram os fatores mais importantes que influenciaram a participação em cooperativas entre as mulheres. Com $P < 0,05$, idade, estado civil e renda anual foram significativos de forma positiva para o nível de participação em cooperativas. O estudo recomenda a provisão oportuna de empréstimos para permitir que as mulheres agricultoras ampliem o alcance de suas atividades agrícolas, aumento do acesso a programas de treinamento para líderes agrícolas femininas em cooperativas, bem como a intensificação da educação extensionista.

Palavras-chave: mulheres agricultoras, cooperativas agrícolas, participação, factores, nível

INTRODUCTION

Cooperative activities generally have remained the most viable instrument for rural development in almost all the developing countries of the world (Akpama and Isaac, 2018). It is also worth noting that, among the significant economic and social institutions in rural areas in Nigeria are agricultural cooperatives which serve critical roles in agricultural growth by supplying farmers with inputs such as fertilizers, seeds, and other chemical substances, and therefore promoting rural societies. An agricultural cooperative is a group of farmers who pool their resources together for efficient facilitation of optimal production and purposeful satisfaction. It holds much potential to enable economically disadvantaged farmers to increase their collective bargaining power, enhance income, provide inputs and create market opportunities.

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Agricultural cooperatives have a significant impact on Nigerian rural communities' local agricultural food industry across a variety of sectors. The main goal of agricultural co-operatives, which are owned by agricultural producers, is to boost member producers' output and earnings by improving their connections to markets for their final products, inputs, information and financial options. Agricultural cooperatives have taken a leading part in initiatives that have enhanced agricultural production in general and members' quality of life in particular. These agricultural cooperatives do produce, process, market, and distribute agricultural products (Adefila, 2014)

One of the areas that women in Nigeria, particularly at the rural level, are expected to be actively involved is in cooperative activities (Augonus et al., 2017). Women's participation in cooperative activities improves their financial capacity for agricultural productivity and long-term food security. According to Oyebamiji et al. (2020), rural women's engagement in cooperative societies benefits their households in Oyo state. Kareem et al. (2023) also found a positive correlation ($p < 0.05$) between age, farming experience, household size, years of cooperative membership, and degree of engagement in Kwara state, Nigeria (Aribaba and Ahmodu, 2018) reported that lending facilities of cooperative societies had a favorable influence on job creation by rural women small-scale businesses in Ondo State.

Women farmers can pool their limited resources through agricultural cooperatives to increase agricultural output, which will promote socioeconomic activity in rural areas hence cooperative societies provide channels for the sharing of input. Approximately 70% of the food produced in Africa is grown by women according to Osahon et al. (2016), who constitute the backbone of the continent's agricultural economy.

Rural women in Nigeria are well known for their hard work in agricultural farms to make food available, inexpensive, and cheaper in order to minimize hunger, malnutrition, extreme poverty, and to create a healthy generation. Kayode et al. (2019) affirmed that women play an essential role in poverty reduction of their family especially where the income of the husband or parents is very meager to cater for the family basic needs. Despite the women farmers best efforts, they occasionally struggle to meet their farm needs independently in areas including access to loans, access to microcredit, farming equipment, and accurate knowledge on planting, harvesting, and marketing separately.

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According to **Obi (2015)** and **Beshel (2016)**, these circumstances made it necessary to establish only female agriculture/farming cooperatives in the majority of local communities (rural regions) in order to promote farming and bring development closer to the rural communities where they reside. To maintain the supply of food in rural areas and the national security of food, women must put in a lot of effort as a group because they are the foundation of the rural economy. Women can obtain government microfinance and other farm inputs such as fertilizer, improved seedlings, oil pressers/extractors, cassava processors, milling machines, and so on through the development of agricultural cooperatives. As we said above, women's participation in agricultural cooperatives constituted the backbone of the rural economy in much of Sub-Saharan Africa. **Onega (2017)** reported that agriculture employs 80% of the economically active female labor population, and food production is the primary activity of rural women, who typically organize cooperative societies at the rural level for ease of work and easy access to government incentives and loans. Women in Nigeria are frequently disenfranchised, with limited access to economic, political, and social resources compared to men, leaving them significantly poorer than their male counterparts (**Adebayo, 2019**). Women may not be able to acquire reasonable investments in capital, inputs, and labor if they have little or no access to agricultural cooperatives.

Women in agricultural cooperatives have generated means of living for the majority of people in both urban and rural areas, mostly through their farming activities. Most women harvest, and sell the produce to the teeming population, thus meeting the needs of the people while also earning a living (**Erring, 2017**). Farmer-group membership enables small-scale farmers to pool their resources, cooperatively sell their products, and overcome the high transaction costs associated with their tiny individual sizes through economies of scale (**Liverpool-Tasie, 2012**).

Nlebem (2018) has described farming in Ondo state as heavily reliant on poor productivity resources, declining land fertility, inexperienced farm labor, a shortage of farm tools/implements, and low yielding seed variety among farmers. Therefore, agricultural cooperative organizations assist women farmers in increasing productivity and developing viable and strong links with extension agencies in agriculture and technology in the state.

Despite the fact that women play a great role in ensuring food availability and accessibility at households, they are faced with a number of significant

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barriers such as inequality in access to and control over inputs and resources such as land, labour, improved seeds, fertilizers, credit and the likes that could smooth their effort in agricultural production and processing (Onifade et al., 2019). Also, women's participation in agricultural cooperatives in Nigeria has been criticized which could be due to the fact that most cooperatives are generally dominated by men.

In this context, the study examined determinants of women farmers' participation in agricultural cooperatives in Ondo State, Nigeria. Specifically, the study sought to describe socio-economic characteristics of women farmers, determine level of participation of women farmers in agricultural cooperative, examine factors that influence participation of women farmers, test relationship between socio-economic characteristics of women farmers and level of participation in agricultural cooperatives, and relationship between factors influencing participation and level of participation.

MATERIALS AND METHODS

The Project was carried out in Ondo state Nigeria, which is located between 5°45N– 8° 15N, 4°45E– 6° 00E. It is situated in the South-western part of Nigeria. The population is about 4,671,700 according to the 2020 population census and a land area of about 14,606 km² (NBS 2020) The climatic condition in the state is favorable for the cultivation of arable crops such as maize, yam, cocoyam, cassava, and plantain/banana among others, especially for the growth of tree and arable crops (Mamman et al., 2019). There are 22 registered agricultural cooperatives in Ondo state (Ondo state Ministry of Commerce and Industry, 2022).

The sample population involved all women farmers who participate in agricultural cooperatives in Ondo state, Nigeria. The research adopted two stage sampling procedure; the first stage involved random selection of 50% (11) out of 22 registered agricultural cooperatives in Ondo state. The total number of women farmers in the eleven cooperative was 844. The second stage involved the random selection of 20% out of the total number of women farmers in the eleven (11) cooperatives, given a total number of 169 which was used for the study.

Descriptive statistics was used to analyze the socioeconomic characteristics. In determining the factors influencing women farmers to

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join cooperatives about 11 factors were presented to the respondents and was rated on a 5-point Likert type scale of Strongly agreed (5), Agreed (4), Indifferent (3), Disagreed (2) and Strongly disagreed (1). The mean score was determined and the bench mark of 3 was calculated, mean below the bench mark of 3 were considered as minor factor while those that fall in the categories of 3 and above were considered as major factors.

The level of farmers' participation in agricultural cooperatives will be measured using 4-point Likert type scale. Various expected level of participant of farmers in agricultural cooperation will be listed and respondent will be required to indicate the extent to which they agree or disagree with the effects on the scale of one-four. The scale will graduate as follows; high level of participation = (4), moderate level of participation = (3), low level of participation = (2), no level of participation = (1). The mean score was determined, and the bench mark of 2.5 was calculated below the bench mark of 2.5, considered as low participation while those that fall in the categories of 2.5 and above were considered as high participation.

RESULTS AND DISCUSSIONS

Socio-economic Characteristics of the Women Farmers

Results from Table 1 shows the mean age of the women farmers as 49.2 years. This finding is in support with the report of [Abu and Lawal \(2013\)](#) and [Tsue \(2015\)](#) who found that the mean age of farmers was between 45-48 years. About 71.1% of the respondents were married with 85.2% of the respondents are literates. The average farming experience was 10.5 years and an average farm size was 0.8 hectares which can be inferred that the farmers are small scale farmers with an average annual income of ₦777,846. [Hogeland \(2002\)](#) had remarked that provision of credit facilities to farmers' cooperatives was geared to helping them increase their production and obtain a higher standard of living.

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Table 1

Distribution of the respondent by their socio-economic characteristics n= 169

Variables	Frequency	Percentage	Mean score
Age (years)			
21-30	21	14.1	42.9 years
31-40	48	32.2	
41-50	51	34.2	
51-60	20	13.4	
>60	9	6.1	
Marital status			
Married	106	62.7	
Otherwise	63	37.3	
Formal education			
Non formal education	22	14.8	
Primary education	26	17.4	
Secondary education	44	29.5	
Tertiary education	57	38.3	
Farming experience (years)			
<10	100	67.1	10.5 years
11-20	21	14.1	
21-30	15	10.1	
>30	13	8.7	
Farm size(hectare)			
<1	143	84.6	0.8 hectares
1-5	22	13.0	
>5	4	2.4	
Annual income (#)			
1-500	45	30.2	# 777,846
501-1000	66	44.3	
1001-15000	23	15.4	
>15000	15	10.1	

Source: Authors' field survey, 2022.

Level of Women Farmers' Participation in Agricultural Cooperatives

Results from Table 2 shows that being a leader makes the highest participating score with the mean score of 2.42. It indicates that leaders shoulder a lot of responsibilities and are more committed to the cooperative activities. This agrees with the findings of Oyebamiji et al. (2020) which reported that

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rural women participation in cooperative activities increases their leadership skills and resilience. Also, savings of fund (pooling resources together) ranked second with a mean score of 2.06. Vink (2012) confirmed that agricultural cooperatives help in enhancing productivity through access to resources and management skills as members pool their resources together, and through access to resources cooperatives can improve their profit and standard of living. Results revealed respondents participate in distribution of seeds (MS:1.50); this show that the respondent knows the importance of cultivating a good seed; good seed leads to high profit provided all other variables remain constant. Study revealed that provision of input (such as fertilizer, herbicides, pesticide, etc.) with the mean score of 1.14 also makes the respondents to participate in the cooperative society. Provision of funds (1.08) shows that cooperatives is a source of fund for the women farmers to boost their agricultural business.

Table 2

Level of Women Farmers' Participation in Agricultural Cooperatives

Activities done	No participation	Low participation	Moderate participation	High participation	Mean score
Member	81 (47.9)	57 (33.8)	21 (12.4)	10 (5.9)	0.74
Leadership	14(8.5)	2 (1.3)	133 (78.7)	20 (11.5)	2.42
Provision of inputs	39 (23.1)	81 (47.9)	31 (18.3)	18 (10.7)	1.14
Training of farmers	53 (31.4)	89 (52.7)	12 (7.1)	15 (8.9)	1.14
Provide finance	52 (30.9)	78 (46.1)	24 (14.2)	15(8.9)	1.08
Source of man power	53 (31.4)	77 (45.6)	25 (14.8)	14 (8.3)	0.95
Saving of fund	0 (0)	20 (11.8)	55 (32.5)	94 (55.6)	2.06
Marketing of farm produce	48 (28.4)	86 (50.9)	25 (14.8)	10(5.9)	0.98
Storage and packaging	46 (27.2)	95 (56.2)	26 (15.4)	2 (1.2)	1.00
Distribution of seed	40 (26.0)	79 (56.2)	26 (15.4)	20 (11.8)	1.50
Serve as link for extension services	46 (27.2)	73 (43.1)	35 (20.7)	15 (8.9)	1.06

Source: Field survey, 2022.

Categorization of Levels of Women Farmers' Participation in Agricultural Cooperatives

Table 3 results shows that 2.0% of the respondent participated low in agricultural cooperatives while 37.6% respondent participated at average level,

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and 60.4% respondent participated highly in agricultural cooperatives. This implies that respondent participated highly in agricultural cooperatives which may be due to the huge benefits derived from participating in cooperatives.

This result supports the report that the participation of rural women in agricultural cooperative societies has immensely contributed to achieving better incomes through their various activities and rural livelihoods (Vercillo, 2016; Jabeen et al., 2020).

Table 3

Distribution of the Women Farmers by the Category of their Level of Participation

Category	Frequency	Percentage
Low	3	2.0
Moderate	56	37.6
High	90	60.4

Source: Field survey, 2022.

Factors Motivating Participation of Women Farmers in Agricultural Cooperatives

Table 4 results shows that accessibility to loan (fund) ranked first having had a mean score of 3.50. This implies that women farmers are concerned about getting funds that would help boost their farming. This result is in line with the findings of Ayanlere (2022). The next factor that influences farmer’s participation is to get adequate and timely information with the mean score of (MS=3.42). It can be indicated that women farmers in rural areas see the need to get timely and adequate information on their agricultural activities. Participating in agricultural cooperatives has helped the women farmers to improve their farm inputs such as fertilizers and seeds; this has a mean score of MS=3.40. This result confirms the work of Mishra et al. (2021) who identified that agricultural cooperatives facilitate the access to credit, input facilities, adequate information, technical knowledge, capacity building trainings, and many other related services to women farmers. Also, increase in farm size, literacy level as well as availability of government services (M=3.21; M=3.17; M=2.98) contribute to the factors influencing farmers participation. Although the following factors are the list among the identified factors, they are however very significant because the mean values are high above the benchmark of 2.5.

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Table 4

Distribution of the Respondents' Factors that Influence their Level of Participation

Factors that motivate participation	Strongly disagree (%)	Disagree (%)	Agree (%)	Strongly agree (%)	Mean score
Accessibility to loan	4 (2.7)	1 (0.7)	61 (40.9)	83 (55.7)	3.50
To get information	7 (4.7)	3 (2.0)	59 (39.6)	80 (53.7)	3.42
Input facility	6 (4.0)	5 (3.4)	62(41.6)	76 (51.0)	3.40
Improve technical knowledge	3 (2.0)	4 (2.7)	74 (49.6)	68 (45.6)	3.39
Improved farm services	5 (3.4)	3 (2.0)	71 (47.6)	70 (47.0)	3.38
Training services	2 (1.3)	3 (2.0)	79 (53.0)	64 (43.0)	3.36
Extension services	8 (5.4)	7 (4.7)	70 (47.0)	64 (43.0)	3.28
Improves skills and ability	5 (3.4)	10 (6.7)	75 (50.3)	59 (39.6)	3.26
Increase size of land	7 (4.7)	8 (5.4)	81(54.3)	53 (35.6)	3.21
Literacy level	9(6.0)	6 (4.0)	84 (56.4)	50(33.6)	3.17
Government services	13 (8.7)	20 (13.4)	73 (49.0)	43 (28.9)	2.98

Source: Authors' field survey (2022).

Test of Hypotheses

H₀: There is no significant relationship between socio-economic characteristic of the respondent and the level of participation in agricultural cooperatives.

Table 5 shows the result of the Pearson correlation test of the relationship between socio-economic characteristic of the respondent and the level of agricultural cooperatives. The table reveals that the socioeconomic characteristics of ages ($r = 0.660$ at $p < 0.05$), marital status ($r = 0.728$ at $p < 0.05$), and income ($r = 0.180$ at $p > 0.05$) are positively and strongly correlated with level of participation of agricultural cooperatives. This positive and moderate correlation are also significant ($p < 0.05$).

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Table 5

Result of the Correlation Analysis Showing the Relationship between the Socio-economic Characteristics and Level of Participation of the Respondents

Variable	p-value	r-value	Remark
Age	0.035	0.660	Significant
Marital status	0.033	0.728	Significant
Educational level	0.679	0.373	Insignificant
Income	0.280	0.180	Significant
Extension contacts	0.118	0.995	Insignificant

Source: Authors' field survey, 2022.

H₀: There is no significant relationship between factor influencing participation and level of participation.

Table 6 shows the result of the Pearson correlation test of the relationship between factors influencing participation of the respondent and level of participation in agricultural cooperatives among the women farmers. The significant variables were: accessibility to loan ($r = 0.416$), input facilities ($r = 0.424$), training services ($r = -0.384$), and to get more information ($r = 0.325$). The implication of the result is that respondents' participation in agricultural cooperatives activities was influenced by these factors. That is the higher their accessibility to loan input facilities and training services the higher their level of participation in agricultural cooperatives. However, a negative significant relationship ($r = -0.417$) between improved technical knowledge and their level of participation in agricultural cooperatives, which may likely be, due to the fact that most of the women farmers now have vast technical knowledge skills and may want to diversify into other investment in order to increase their income, and this may not avail them the opportunity to participate effectively in agricultural cooperatives. This was confirmed in the study carried out by [Maffioli et al. \(2011\)](#) that farmers with better education, more skills, and more wealth are more likely to adopt certain kinds of innovations that are more dependent on knowledge.

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Table 6

Result Showing the Relationship between the Factors Influencing Participation and Level of Participation of the Respondents

Variable	p-value	r-value	Remark
Accessibility to loan	0.045	0.416	Significant
Type of skills and ability	0.067	0.704	Insignificant
Input facilities	0.006	0.424	Significant
Training services	0.040	0.384	Significant
Improved technical knowledge	-0.417	0.335	Significant
Size of land	0.081	0.262	Insignificant
Extension services	0.080	0.347	Insignificant
To get information	0.050	0.325	Significant

Source: Field survey, 2022.

CONCLUSION

Women's participation in agricultural cooperatives in Ondo state is significant, maybe due to the numerous benefits associated with participation. Factors such as access to loan, appropriate and timely information, and simple access to farm inputs such as fertilizers and seeds, as well as enhanced technical expertise, all influenced respondents' participation in agricultural cooperatives. However, member funding (Mean=1.08), government services (Mean=2.98), and a link to extension services (Mean=1.06) have had very little effect on cooperatives. The study's findings suggest that the factors that necessitate increased participation should be included in agricultural cooperative policies. Extension agents should be encouraged by promoting and improving the usage of extension services. Cooperative members and leaders need to be educated and trained in order to manage, expand, and develop the cooperative effectively. Relevant parties, such as the Ministry of Agriculture, can conduct training sessions to educate farmers on loan management. Governments and cooperative societies should implement policies that increase market access while keeping market prices stable, allowing women farmers to earn more, save more, and invest more in their agricultural operations.

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