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WOMEN SOCIO-ECONOMIC CHARACTERISTICS ON AGRICULTURAL COOPERATIVES AND AGRICULTURAL EXTENSION SERVICES IN ANAMBRA STATE, NIGERIA

Okafor Ifeoma Pethronila[1]; Nwagbala Chinelo Stella[2]; Oranusi Ifeanyichukwu N.[3]
[1]Department of Business Administration, Federal Polytechnic Oko, Anambra State Nigeria
[2]Department of Business Administration, Nnamdi Azikiwe University, Awka, Anambra State. [3]Department of Marketing, Nnamdi Azikiwe University Awka, Anambra State Nigeria.

Abstract

The Nigerian agricultural system has not been living up to expectations, despite the wide range of programs, policies, and approaches that have been formulated for its enhancement and sustenance. Socio-economic factors affecting women's use of agricultural extension services in Anambra state cannot be over-emphasized. This study dwelt on examining the effect of Socioeconomic characteristics on women's agricultural cooperatives and agricultural extension services in Anambra State, Nigeria. A multistage random sampling technique was employed in the selection of 399 women agricultural cooperative members. Data collected were analyzed using both descriptive and inferential statistics via SPSS version 23. The descriptive statistics used included frequency, percentage, weighted mean, and a five-point Likert scale while ANOVA was used for the test of the hypothesis formulated. The result of the hypothesis revealed that the socio-economic factors of the women cooperative members have a significant effect on the use of extension services. Findings also revealed that women cooperative members were faced with various challenges in the use of agricultural extension services such as low educational background, Insufficient funds, and lack of professionalism and competence among extension agents. The following recommendations were made; women farmers need education and training for a better understanding of extension services and financial inclusion so that they can use all available sources of credit for the enhancement of agricultural activities.

Keywords- *socio-economic characteristics, women agricultural cooperatives, extension services.*

INTRODUCTION

The problem of socioeconomic characteristics affecting women's agricultural cooperatives and Agricultural Extension Services revolves around the challenges and disparities faced by women. Socio-economic factors such as limited access to resources, education, and decision-making power often hinder women's participation and success in agricultural cooperatives and their engagement with Agricultural Extension Services (Maas & McLaren,2015). Women often face barriers such as limited access to land, credit, and technology, as well as lower levels of education and decision-making power within their households and communities. These socio-economic constraints can significantly impede women's participation in agricultural cooperatives and their ability to benefit from Agricultural Extension Services(Duflo,2012). One common problem in organizations is the difficulty in successfully implementing change initiatives and ensuring that these changes lead to improved performance. Many organizations face challenges related to resistance from employees, lack of alignment with strategic goals, and inadequate measurement of performance improvements resulting from change efforts (Cameron&Green,2015; Ezeanokwasa, Nwagbala &Nwachukwu,2023). Strategy and performance are two related concepts, strategy provides the template, a road map, and a game plan on how the management intends to reach the goal set by the organization (Audu &Nwagbala,2024). Over the years, Nigerian rural farmers have depended on indigenous or local knowledge for farming systems such as skills and experience gained through oral tradition and practice over many generations, (Oyeoro, Adepogu, Oyewo& Adigun (2017). The acquisitions of such generational skills by the rural farmers as observed by Obidike (2011) have not helped to improve agricultural yield. Therefore, all that is witnessed in the rural agricultural system ranges from the emergence of disease-resistant weeds and pests, old farm implements, and poor-quality fertilizers, among others, leading to poor farm yields.

Agriculture remains the nation's main economic bedrock employing 70–80 percent of the total population, mostly on a subsistence level (Asiabaka& Owens, 2002). Agricultural development implies a shift from traditional methods of production to new\improved technological components such as new varieties, commercial fertilizers, and pesticides as well as new crops and new farming systems (Agbamu,2005), Consequently, a wide range of policies and approaches have been formulated in most of the African countries (Nigeria inclusive) to reverse the worsening food and agricultural trends towards sustained agricultural growth. This has necessitated putting in place a combination of factors comprising the right technology, effective extension services, access to physical inputs, adequate market support services, and some infrastructures to improve agricultural productivity and raise the standard of living of rural dwellers (Aphamu&Obikhian, 2008). The agricultural extension services operate from the backdrop belief that increased agricultural productivity depends primarily upon the acceptance of improved cultural and technological changes at the rural farm level and that peasant farmers can achieve higher farm yield only if they adopt recommended scientific farming techniques in place of their traditional practices (Aphamu et al., 2008). Moreover'Aphamu et.al.(2008) posited that the successful adoption of improved farming techniques is predicated upon rural farmers acquiring the knowledge and having a better understanding of these technologies. Cooperatives are one of the most effective vehicles for efficiently mobilizing production resources and accelerating rural development. The importance arises from the fact that the small-scale individual capacity of the peasants' production, cannot cope with the technological and capital demands of modernized agriculture, (Omotesho,2008).

Cooperative organizations play a very important role in the socio-economic life of the nation and can be identified as an autonomous association of persons united voluntarily to meet their common, economic, social, and cultural needs and aspirations through jointly owned and democratically controlled enterprises. Cooperative Societies in Nigeria like

their counterparts all over the world are formed to meet people's mutual needs, they are considered useful mechanisms to manage risks for members in agriculture. Through cooperatives, farmers could pool their limited resources together to improve agricultural output and this will enhance socio-economic activities in the rural areas (Ebonyi & Jimoh 2002). Women Agricultural Cooperative Societies have created many outlets in the rural and semi-urban areas of the nation which Anambra is inclusive, creating a value chain and enhancing productive capacity and competitive ability among farmers' standards of farm produce. The governments are yet to improve the system of agriculture to a significant level. In general, women's agricultural cooperatives and all other cooperatives help members to attain well-being satisfaction which they cannot achieve if they are to venture into agriculture singly or individually. Women farmers in Africa are a productive force in subsistence agriculture participation, active in the primary production of food crops, animal production, and transportation of food crops from the farm to the house, processing, storage, and marketing (Banji&Okunade, 2005). However, the National Agricultural Research Project (NARP 2000) expressed concern with the assumption that in Nigeria the small-scale farmers who produce most of the food crops are men. This assumption is false because women are involved in all farm activities in addition to helping their husbands transport, process, store, and marketing of farm produce.

Onwuka, Otaokpukpu, and Okonkwo (2017) The increasing demand for agricultural products by an enlarged populace has put farmers in a position where they need to adopt scientific knowledge and extension services to increase productivity. Consequently, the need was felt to modernize the agricultural sector to accelerate the country's economic growth as well as improve the well-being of Nigerians, Anambra state inclusive. This explains the proliferation of strategies to accelerate food production in the country. However, some of these efforts often prove to be ineffective. Again Onugu &Abdulahi (2012) opined that there is a growing advocacy for achieving sustainable food security in Nigeria and a lot of effort has been made

and directed at finding an appropriate structure for organizing millions of small-scale farmers towards achieving food security. Women agricultural cooperatives, agricultural cooperatives, in general, have been noted as the approved vehicle for harnessing and pooling the resources of millions of small-scale farmer's producers together to enjoy the benefit of large-scale production. Although the activities of the extension agents which is anchored by the Agricultural Development Programme (ADP) of states in Nigeria is a community-based participatory approach using contact farmers in the target area, that has not been able to reverse the upward trend in the price of foodstuffs in the markets. Agricultural extension service facilitates the transfer of knowledge and good practices to farmers. For the laudable objectives of agricultural extension to be achieved, extension agents have to play a vital role as they are responsible for transferring useful information necessary for "change" to the farmer. This study emphasizes the need for tailored interventions that consider women's specific socio-economic challenges to promote their active involvement and contribution to agricultural development by examining the effect of Socioeconomic characteristics on women's agricultural cooperatives and Agricultural Extension Services in Anambra State, Nigeria.

Objective of the Study

- To examine the effect of Socioeconomic characteristics on women's agricultural cooperatives and Agricultural Extension Services in Anambra State, Nigeria(AES).

Research Question

- How do Socioeconomic characteristics of women agricultural cooperatives affect Agricultural Extension Services in Anambra State, Nigeria(AES)?

REVIEW OF RELATED LITERATURE

Conceptual review

Agriculture in Nigeria

Agriculture is the use of land for farming or pasturage for the production of food, forage, and primary products for energy purposes or further industrial improvement or preparation. Agriculture refers to the processes involved in the controlled production of plant and animal materials that are used by man (Nwosu,2002) From the definition above, we may assume that the production of food is solely for man's survival. Agriculture needs to be man-transformed, not only for man's survival but also, for the improvement of the family to produce sufficient high commodities for export that will be in increase the microeconomic condition of the rural people and pull them out of the vicious cycle of poverty (Nwosu,2002), In Nigeria, farming is mostly performed by individual farmers who use obsolete technology for their farming practices and are unskilled themselves (Anyanwu, 2000).

Cooperative

A cooperative is an autonomous association of persons who voluntarily cooperate for their mutual, social, economic, and cultural benefits. A cooperative enterprise or association is owned and controlled by the people it serves and shares any surplus based on each member's cooperative contribution (as a producer, labourer, or consumer) rather than their capacity to invest financial capital (Ridley-Duff, 2008)

Agricultural Cooperative Societies

Agricultural cooperatives or farmer's cooperatives are cooperatives where farmers pool their resources for mutual economic benefit. Agricultural cooperatives are broadly divided into agricultural services cooperatives, which provide various services to their farming members, and agricultural production cooperatives, where production resources such as land or machinery are pooled and members farm jointly (Cobia 2009). Agricultural supply cooperatives aggregate purchases, storage, and distribution of farm inputs for their members, by taking advantage of volume discounts and utilizing other economies of scale.

Supply cooperatives bring down member costs. Supply cooperatives may provide seeds, fertilizers, chemicals, fuel, and farm machinery. Some supply cooperatives also operate machinery pools that provide mechanical field services (e.g. harvesting, plowing) to their members (Ridley Duff, 2008). On the other hand, agricultural cooperatives provide the services involved in moving a product from the point of production to the point of consumption. Agricultural marketing includes a series of inter-connected activities involving planning production, growing and harvesting, grading, packaging, packing, transporting, storage, food processing, distribution, and sale.

Women Agricultural Cooperative Societies

Cooperatives according to Omotesho (2008) are one of the effective vehicles for efficient mobilization of production resources and accelerated rural development. Women Agricultural Cooperative Societies have created many outlets in the rural and semi-urban areas of the Southeast, creating a value chain and enhancing productive capacity and competitive ability among farmers. Sadly, women agricultural cooperatives are facing big challenges of severe competition in keeping qualitative standards of farm produce. The governments are yet to improve the system of agriculture to a significant level. The majority of the benefits accrued from government policies and programs have been denied the commercial farmers, who have adequate and enough resources for mechanical farming. It is therefore paramount that the government assist these farmers' cooperative societies for an improved agricultural system, making available extension agents to them, for imparting new techniques and ideas, to enhance their production.

Agricultural Extension Services

Agricultural extension has been defined in different forms and ways by different authorities and experts, all endearing the improvement of the standard of living of the people. Fisher (2002) defined extension as a system of education extending beyond the classroom to individuals on farms and is available to every member of the family. He went further to opine that the role of

extension services is invaluable in teaching farmers how to improve their productivity. Extension is also critical to move research from the lab to the field and to ensure a return on investment in research by translating new knowledge into innovative practices. Fisher (2002) also stated that the UN High-Level Panel of Experts on Food Security and Nutrition (HLPE) argued that "extension systems need full attention and investments from governments and the donor community." The agricultural extension started as just an extension to disseminate information to people who were privileged to taste the four walls of the classroom. Extension was first used in connection with education over 150 years ago to describe the method of spreading knowledge. Okechukwu (2009) opined that Agricultural extension can be defined as advice and assistance given to the farmers and their families through educational procedures on new farming methods and techniques to improve their production efficiency and income, improve their level wing and uplifting the education and social standard of the farmers.

However, women face numerous challenges in their quest to access agricultural extension services. These range from insufficient funds for supporting public extension, poor resourcing, disorganized structure resulting in poor infrastructure for attracting business, limited involvement of women farmers in the extension process, lack of appropriate strategies for effective research and adequate extension methods, Limited coverage of extension services across rural regions and challenges in adopting technology packaged to community-specific contexts have also been highlighted as article issues in the delivery of agricultural extension service (AES) (IFPRI, 2010). Again, agricultural extension is an approach that aims to provide uninformed farmers and their households with relevant information about new farming practices and techniques that can boost agricultural production and improve living standards (Sheriff 2018). Thus, for Nigeria's agriculture to improve, our farmers have no alternative but to learn and adopt recommended scientific farming techniques in place of their traditional practices. For farmers to respond positively to new ideas, they must be properly educated on how best to apply the new ideas or practices to their farming activities.

Empirical review

Onwuka, Otaokpukpu, and Okonkwo (2017), in their study on the effectiveness of extension services in enhancing the productivity income welfare of women farmer's cooperatives in Kajuru Local Government Area of Kaduna State, 80 women farmers were purposively and randomly selected. Descriptive statistics were used to determine the effectiveness of extension services on the productivity, income, and welfare of the women farmers in the Kajuru LGA of Kaduna State. The study reveals that women farmers' cooperative societies in the area affirmed that extension services have increased their productivity, and income, and also improved their welfare.

Umar, Olayemi, and Suleman (2015) in their work on awareness and use of information and communication technologies among extension agents in Kaduna State of Nigeria, seventy (70) extension personnel were interviewed through the use of structured questionnaire, descriptive statistics, and multiple regression analysis were used to analyze the study. The result showed that 60.5% of the respondents were aware of at least one ICT in the study area. The result also showed that the socio-economic characteristic of the extension agents in the study area influenced their level of use of ICT.

Egbe and Eze (2014), examined the farmer's perception of the effectiveness of agricultural extension delivery towards agricultural development in Ebonyi State; this study was a survey research design, as it utilized a questionnaire to gather data from a sample of one hundred and sixty-eight respondents. It was used to gather data on the socio-economic characteristics of farmers, the source of extension services, and the nature of extension services delivery. The data were analyzed using mean and standard deviation to answer the research questions. A T-test was used to test the hypothesis. The result showed that most farmers operate at a small scale level and use personal savings as the major source of finance, get an extension linkage system, and provision of technical advice to farmers.

Olorunnishola and Yusufu (2016) in their study carried out in Kwara State investigated the purpose for which farmers in Kwara State utilize available information sources and services. The study adopted the survey design in a population of 55,522 farmers from whom 447 were sampled in six local government areas, which were made up of two from each of the three senatorial districts in the State. Questionnaires and interviews were used to generate data, which were descriptively analyzed to answer the research questions. The results showed that the information sources and services mostly used by the farmers included relations, fellow farmers, town criers, television, mobile phones, film shows, radio, etc. The need for information made the farmers use it for crop and animal production; pests, diseases, and weed control; fishing; disaster control and mitigation, fertilizer procurement and application; post-harvest technology; sourcing for labour; agricultural credit; etc. The study therefore recommended that the Kwara State Government should train extension workers on how to use information communication technology such as mobile phones on how to subscribe for agricultural information also there is a need to extend agricultural extension services to all the local government areas through established centers where farmers can obtain required information on agricultural productivity, marketing of farm produce and post-harvest technology to increase their productivity.

Okafor (2015) in her study on agricultural extension services delivery and adoption of agricultural technologies among rural women cooperators in Ogbaru Local Government Area of Anambra State, descriptive analytical methods were used to investigate the outlined objectives and correlation was used to test the hypothesis raised. Results revealed that the major sources through which the cooperative societies source their information about agricultural technologies are the cooperative societies with 94%. The correlation analysis showed that there is a significant relationship between the level of awareness of agricultural technologies of extension agents and the adoption of agricultural technologies.

Ibrahim, Obetta, Mustapha, and Mustapha (2016) on the Assessment of Extension Service Delivery on Improved Fishing Technologies among Artisanal Fishermen in the Baga Area of Lake Basin, Nigeria, Data were obtained from 210 fishermen using multi-stage sampling techniques through the structured interview schedule. Data were analyzed with the use of descriptive statistics such as frequency, percentages, and means. The results of the socioeconomic characteristics revealed that the majority (78.1%) of the respondents' age was between 31 and 50 years old, which indicated that economically active respondents were involved in artisanal fishing in the study area. The study indicated that improved fishing technologies were available in the study area. However, not all the improved fishing technologies were adopted by the respondents. The result revealed constraints of high cost (87.6%), lack of capital (85.7%), lack of infrastructures (82.9%), lack of government incentives (70%), and fear and anxiety due to insurgency (46.2%).

Gutu (2015) in his study on Economics of Work Motivation: Empirical Study of Agricultural Extension Workers in Western Ethiopia, has the opinion that in the agricultural sector, the success of the extension services' delivery is directly proportional to extension agents' level of commitment and work motivation. This article analyzed factors determining the level of development agents' work motivation in the western part of Ethiopia. Respondents were selected randomly and work motivation; which is the dependent variable was ordered from lower level of motivation to higher level of motivation. The ordered logistic regression result revealed that interpersonal relationships, work itself, distance from residence, salary sufficiency, career opportunity, recognitions, personal life, and job security were the most important factors in determining work motivation.

Committee on Doubling Farmers Income (2017) examined empowering the farmers through Extension and Knowledge Dissemination in India using descriptive statistics. The

nation's livestock population counts at more than 512 million. Results equally showed that economic indicators do not show equitable and egalitarian growth in the income of the farmers. The human factor behind agriculture, the farmers remain in frequent distress, despite higher productivity and production. The demand for income growth from farming activity has also translated into a demand for the government to procure and provide suitable returns.

Gap in Literature

Having examined available literature in the area of study, it was observed that there is a limited empirical study on agricultural extension services on the performance of women members' cooperative societies. Most of the literature examined were studies investigated outside the shores of Nigeria. None of the studies were carried out to examine the effect of Socioeconomic characteristics on women's agricultural cooperatives and Agricultural Extension Services in Anambra State, Nigeria(AES). Thus, warranting an empirical probe to investigate agricultural extension services on the performance of women members 'cooperative societies in Anambra State, Nigeria.

THEORETICAL REVIEW

Diffusion of Innovations Theory

Diffusion Theory was propounded by Rogers (1995) This theory explains that disciplines ranging from agriculture to marketing have used diffusion theory to increase the adoption of innovative products and ideas. The discussion focuses on how instructional technologists are using the theory of innovation diffusion in hopes of increasing the implementation and utilization of innovative instructional products and practices. Diffusion is the process by which an innovation is adopted by members of a certain community. Diffusion of innovation is a theory that seeks to explain how, why, and at what rate new ideas and technologies spread. Diffusion of innovation is a theory that seeks to

explain how, why, and at what rate new ideas and technology spread. In this regard, this study is determined to explain the need for innovative agricultural technologies and the extent to which these innovative agricultural technologies and ideas are disseminated among the women-based agricultural cooperative society's members. The innovation must be widely adopted by the cooperative members to enhance their economic goals.

MATERIALS AND METHODS

The survey research design was chosen because there is a need to examine a cross-section of people to generate the needed data. The area of the study is Anambra State, Nigeria. Anambra state has the largest commercial and industrial city in South Eastern Nigeria, making it possible for agricultural products to be marketed. Onitsha and Nnewi are the biggest commercial and industrial cities respectively. A multistage random sampling technique was adopted to select 399 respondents of the women agricultural cooperative members. After data sorting and filtering only 379 were found usable. Data were collected from basically primary sources. The primary data employed pretested and relevant secondary information was elicited from texts, journals, learned articles, and websites of reputable institutions.

PRESENTATION OF DATA AND ANALYSIS

Descriptive statistics and multiple regression models were used to analyze the objectives while inferential statistics were used to test the hypotheses. The hypothesis was tested using Analysis of Variance (ANOVA) due to the multiple dependence of income and output performance indices on the use of agricultural extension services in the study area. The hypothesis was tested at a 0.05 level of significance and the analysis was done using a combination of statistical software such as SPSS version 22 and Excel.

Table 1: Distribution of Women Agricultural Cooperative Members in Anambra State of Nigeria according to their Socio-economic Characteristics (n = 379).

S/n	Variables	Frequency	Percentage (100%)	Mean (x)	Standard Deviation
1	**Age (Years)**				
	20 - 29	36	9.5		
	30 - 39	108	28.50		
	40-49	143	37.70	**42.60**	**10.00**
	50 - 59	76	20.10		
	60 years and above	16	4.20		
2	**Educational Qualification**				
	No Formal Education	20	5.30		
	First School Living Certificate	51	13.50		
	Senior Secondary Certificate	156	41.20		
	ON D/NCE	79	20.80		
	B Sc/HND	61	16.10		
	Masters of Science and above	10	2.60		
	Mass Education	2	0.50		
3	**Marital Status**				
	Married	272	71.8		
	Single	67	17.7		
	Widow	36	9.5		
	Single Mother	4	1.1		

Source: Computed from Field Survey Data, December 2023.

The Socio-Economic Characteristics of the Women Agricultural Cooperative Members in Anambra state in table 1 include Age, Education, and Marital Status.

Age: the table showed that the majority (37.70%) of the women are within the age bracket of 40 –49 years, while the remaining 28.50%, 20.10%, 9.50%, and 4.20% are within the age bracket of 30 – 39 years, 50 – 59 years, 20 – 29 years, 60 years and above respectively. The mean age was found to be 42.60. The women farmers are in their active farm age and adoption of agricultural innovation will be easy in the study area.

Level of Education: the table showed that the majority (41.20%) of the women attended secondary school and have senior secondary certificates, while the remaining 20.80%, 16.10%, 13.50%, 5.30%, 2.60%, and 0.50% had Ordinary National Diploma/National College of Education, Bachelor of Science/Higher National Diploma, First School Living Certificate, No Formal Education, Masters of Science and above, and Mass Education respectively. From these results, it becomes very clear that women farmers in the study area are not without a formal education so, they can easily assimilate what they are being taught.

Marital Status: the table showed that the majority (71.80%) of the women are married, while the remaining 17.70%, 9.50%, and 1.10% are single, widows, and single mothers respectively.

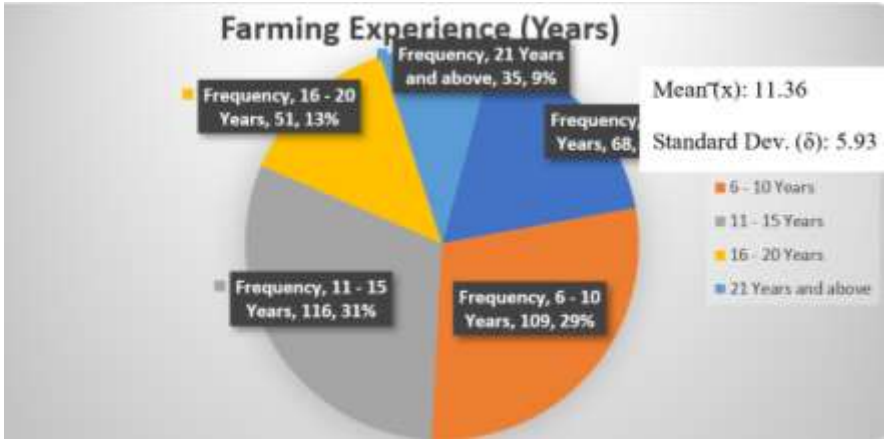


Figure 1 Farming Experience of Cooperative Women in Anambra State

Farming Experience: the figure 1 above clearly showed that majority (31.00%) of the women have had a farming experience in the bracket of 11 -15 years, while the remaining 29.00%, 18.00%, 13.00%, and 9.00% have a farming experience in the bracket of 6 – 10 years, 1 – 5 years, 16 – 20 years, 21 years and above respectively. The mean farming experience was found to be 11.36. This means that women farmers in the zone have better experience in agriculture, though this might pose a challenge to the use of extension services being preached to them.

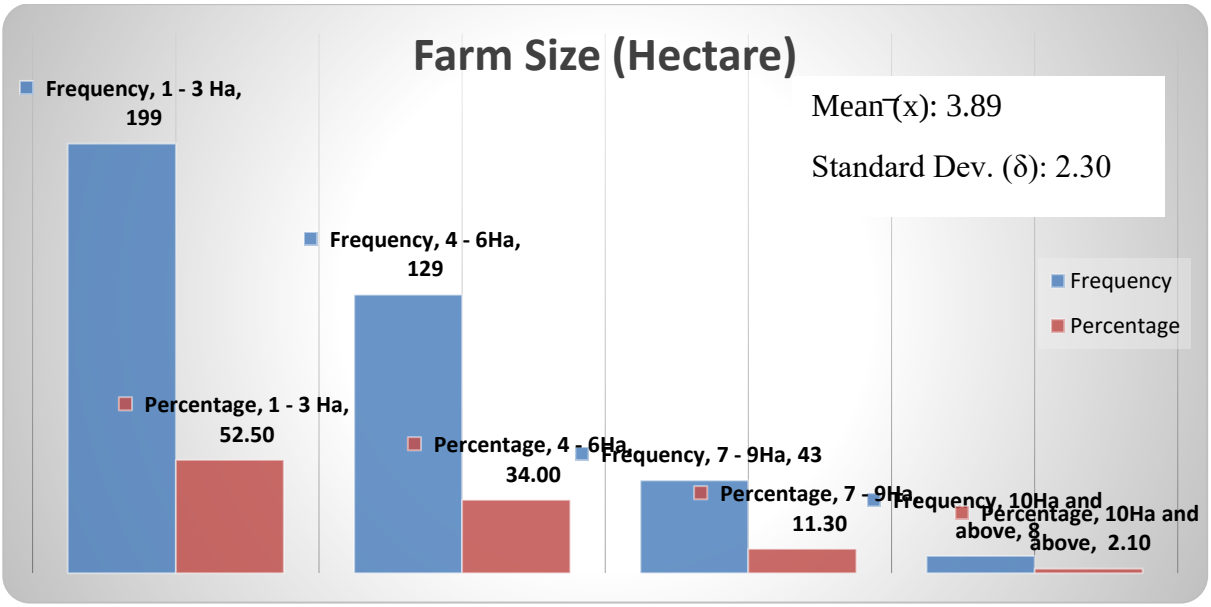


Figure 2: Farm Size of Cooperative Women in Anambra State, Nigeria.

Farm size: the figure 2 above showed that majority (52.50%) of the women have a farm size in the bracket of 1 – 3ha, while the remaining 34.00%, 11.30%, and 2.10% have a farm size in the bracket of 4 – 6ha, 7 – 9ha, 10ha and above respectively. The mean farm size was found to be 3.89ha. This is justifiable as most agricultural programmes encourage the farmer to have contiguous land through the land development scheme. Agricultural mechanization is easier to adopt for practice on contiguous land.

Table2: Socioeconomic characteristic effect on extension use in Anambra State.

Variable	Linear	Exponential	Semi Log	Double Log
Intercept		4.92742	1.37358	1.59206
	3.98931	(3.98)	(16.32)	(4.77)
	(12.71)			
Age (X_1)		0.33003	0.00147	0.08686
	0.00551	(1.39)	(0.88)	(1.36)
	(0.88)			
Level of education (X_2)		0.08906	0.02620	0.02455
	0.09574	(2.49)*	(2.65)*	(2.55)*
	(2.60)			
Marital status (X_3)		0.01848	-0.00135	0.00293
	0.01503	(0.31)	(0.08)	(0.18)
	(0.23)			
Farming experience (X_8)		0.34306	-0.00553	0.09304
	0.02018	(3.32)**	(2.93)*	(3.34)**
	(2.87)**			
Farm size (X_9)		0.07756	0.00426	0.02755
	0.01286	(0.61)	(0.89)	(0.80)
	(0.72)			
R^2	0.3710	0.4082	0.3648	0.3967
F-Stat.	5.31	6.21**	5.17**	5.92**
N	91	91	91	91

Source: Computed from Field Survey Data, December 2023.

Figures in parenthesis are t – ratios, * significant at 5%, ** significant at 1%.

The exponential function with the highest R^2 (0.4082), the highest number of variable significance and in conformity with the a priori expectation was chosen as the lead equation.

Thus; Y = 4.92742 + 0.33003LnX1 + 0.08906LnX2 + 0.01848LnX3 + 0.07189LnX4 + 0.26626LnX5 + 0.10412LnX6 + 0.13418LnX7 + 0.34306LnX8 + 0.07756LnX9 + 0.5918

The coefficient of multiple determinant R^2 (0.4082) indicated that 40.82% of the variation in the use of agricultural extension services (technology, advisory and facilitation) were explained by the joint action of the women farmer's socioeconomic characteristics in Anambra State, while the remaining 59.18% unexplained was due to error beyond the control of the women farmers. The F-statistics of 6.21** indicated that the result was normally distributed.

The coefficient of Age (0.33003) was positive and statistically not significant at either 5% or 1% level of probability indicating that a unit increase in the age of women farmers in Anambra State will not significantly affect the use of agricultural extension service in the area.

The coefficient of Level of education (0.08906) was positive and statistically significant at a 5% level of probability indicating that as the women farmers in Anambra state make a step advancement in their level of education, there will be to a greater extent 8.91% increase in their use of agricultural extension services. This is in agreement with Ajayi & Gunn (2009) but not in line with Ajah(2013).

The coefficient of marital status (0.01848) was positive and statistically not significant at either a 5% or 1% level of probability in the area. This means that a 100% change in the marital status of women in Anambra State probably from single to married will not affect the use of agricultural extension services in the study area.

The coefficient of farming experience (0.34306) was positive and highly significant at a 1% level of probability indicating that with a unit increase in farming experience among women farmers in Anambra State, there will be a 34.31% increase or effect in the use of agricultural extension service in the area.

The coefficient of farm size (0.07756) was positive and statistically not significant at either 5% or 1% level of probability indicating that with a unit increase in farm size among women farmers in Anambra State, there will be no significant effect in the use of agricultural extension service

in the area. This is not in line with the a priori expectation. Ideally, the use of agricultural extension services is expected to increase with hectare increment.

Thus; the variables that significantly affect the use of agricultural extension services in Anambra State include; Level of education and Farming experience.

Test of Hypothesis

Table 3. Hypothesis (Ho_1): Socioeconomic Characteristics of Members of the Women's Agricultural Cooperatives have no significant effects on their use of Agricultural Extension Services (AES)

Table 3: Decision table of the Hypothesis

Variable	T – ratio	Decision
Age (X_1)	(2.07)*	Reject
Level of education (X_2)	(3.39)**	Reject
Marital status (X_3)	(1.76)	Accept
Primary occupation (X_4)	(-2.46)*	Reject
Family size (X_5)	(1.93)*	Accept
Income (X_6)	(-3.25)**	Reject
Farming experience (X_7)	(0.54)	Accept
Membership experience (X_8)	(0.76)	Accept
Farm size (X_9)	(0.96)	Accept
F – Stat.	45.03**	

Source: Computed from Field Survey Data, December 2023.

* Significant at 5% and ** Significant at 1% level of probability.

The hypothesis was tested from the t. ratio of regression result of objective.

Thus; hypothesis (Ho_1) was rejected based on the variables that had significant t-ratios and were accepted based on variables that were not significant at either 5% or 1% level of probability as shown in Table 3: above.

Summary of The Findings

The findings revealed that the majority (37.70%) of the women were within the age bracket of 40 - 49 years with a mean age of 42.60 which implies that the women were still in their active farm age, and 71.80% of the women are married, while the majority (41.20%) of them attended secondary school. Despite their level of education, the majority (44.60%) of the women were mainly farmers, the findings also revealed that the mean cooperative membership experience was 8.26 and the mean farming experience was 11.36, with an average of 3.89 hectares on a contiguous base.

Ho was rejected based on the variables that had significant t – ratios such as Age (2.07) *, Level of education (3.39) **, and Occupation (-2.46).

Conclusion

Conclusively; the findings revealed that socioeconomic characteristics of the women had a significant effect on their use of the extension services based on those variables that were significant (Level of education, Farm size, and Farming experience.

Recommendations

The following recommendations were made;

Women agricultural cooperative members need education and training for a better understanding of extension services and also training on financial inclusion so that they can use all available sources of credit for the enhancement of agricultural activities. The government and other implementing agencies should ensure that professionalism and competence are displayed by her extension agents in delivering the packages to the women, this will help to boost the confidence of the women in adopting the practice.

Contribution to Knowledge

This study contributes to the existing level of academic research and will help progressive policy makers design a development program that will encourage more women to venture into agriculture in Nigeria. It also will give the government an insight into solving the problem of women not having access to the agricultural productive assets needed in their farms.

REFERENCES

Agbamu, J. U. (2005) Problem and Prospects of Agricultural Extension Service in Development Countries in Agricultural Extension in Nigeria S. F. Afolayan (ed) Ilorin AESON, P. 159 – 169

Anyanwu, E.A. (2000). Cooperative Development Education in Schools, Institutions and Grassroots: Paper presented at the National Conference on Cooperatives in the National Development Plan of Nigeria.

Aphamu & Obikhhian (20008) Agricultural Extension Services Delivery and Adoption of Agricultural Technologies among Rural Women Cooperators in Ogbaru Local Government Area of Anambra State.

Asiabaka, C. C. & Owens, M. (2002); Determinants of Adoptive Behaviors of Rural Farmers in Nigeria. Proceedings of the 18th AIAEE Annual Conference Durban, South Africa.

Audu Y.P & Nwagbala, S.C., (2024) Blue Ocean Strategy and Customer Retention in Aluminum Firms in North-Central Nigeria. Journal of Public Administration, Policy and Governance Research (JPAPGR), 2(1)1-14

Banji, O.A & Okunade, E.O. (2005) Women in agricultural and rural development, *Journal of agricultural extension society of Nigeria*, AMTI, Ilorin.: 69-76. London, Benson Publishers Ltd.

Cobia D (2009) "Cooperatives in Agriculture" Prentice-Hall, Englewood Cliff NJ

Committee on Doubling Farmers' Income (2017) Empowering the farmers through extension and knowledge dissemination. Department of agriculture cooperation and farmers' welfare, ministry of agriculture and farmers' welfare India.

Duflo, E. (2012). Women's Empowerment and Economic Development. Journal of Economic Literature, 50(4), 1051-1079

Ebonyi, V. &J imoh,O. B., (2002) Cooperative Movements; A way out of Poverty. Lagos, Lonman Publishers. *International Journal of Education and Development using Information and Communication Technology(IJEDICT), 2013, Vol. 9, Issue 1, pp. 80-99.*

Egbe B.O &Eze, S.O. (2014). Farmers' Perception of Effectiveness of Agricultural Extension Delivery Towards Aquaculture Development in Ebonyi State International Research Volume No.3

Ezeanokwasa F.N, Nwagbala S.C., & Nwachukwu R, (2023) international journal on economics, finance and sustainable development. 5(9)109-120.

Fisher in Asiabaka C.C. (2002). Agricultural Extension. A handbook for Development Practitioners. Molsystem Ltd Services, Omoku Rivers State.

Gutu.T (2015) Economics of Work Motivation: Empirical Study of Agricultural Extension Workers in Western Ethiopia. *Asian Journal of Agricultural Extension, Economics& Sociology 8(4): 1-10, 2016*; Article no. AJAEES.22557 ISSN: 2320-7027

Ibrahim, A.A, Obetta, N. C., Mustapha, S. B. &Mustapha, A.A(2016) Assessment of Extension Service Delivery on Improved Fishing Technologies among Artisanal Fishermen in Baga Area of Lake Basin, Nigeria. *Nigerian Journal of Fisheries and Aquaculture 4(2):*18 – 24 September, 2016

IFPRI (2010) Gender and Governance in Rural Service: Insight from India, Ghana and Ethiopia. Agriculture and Rural Development: Washington DC, USA

Maas, B., & McLaren, M. (2015). Gender and Agricultural Extension in Malawi. Journal of International Agricultural and Extension Education, 22(3), 68-81.

National Agricultural Research Project (NARP), (2000) An assessment of the contribution of women to family farming in northern Nigeria, A research report conducted by NAERLS, Ahmadu Bello University, Zaria, Nigeria.

Nwosu, A.A. (2002). Inquiry Skill Acquisition for Enhancing Women's Participation in Sustainable Development – www.unn.edu.ng/internals/staff/viewProfile/NDA3/5

Obidike (2011). Agricultural Extension Services Delivery and Adoption of Agricultural

Okafor,I.P(2015).Agricultural Extension Services Delivery and Adoption of Agricultural Technologies among Rural Women Cooperators in Ogbaru Local Government Area of Anambra State.

Okechukwu E (2009) Agricultural Extension and its Impact on Agricultural Development. Unpublished Mimeograph, Department of Cooperative Economics and Management, Faculty of Management Sciences, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria.

Olorunnishola.E., Yusufu A, (2016). Use of Agricultural Information Sources and Services by Farmers for Improve Productivity in Kwara State. Library Philosophy and Practice (e-journal). 1456.

Omotosho,O(2008). Global Food Crisis and National Food Security: Strategic Options Nigeria.:Paper Presented at the 2008 Annual Conference Held at the Orchid Hotels, Delta State, Asaba.

Onugu C. U. &Abdulahi T.O. (2012). The Performance of Agricultural Cooperative Societies Under the National Programme on Food Security in Enugu State, Nigeria: *World Journal of Agricultural Sciences 8 (5): 537-539, 2012 ISSN 1817-3047*

Onwuka, F.N, Otaokpukpu J.N, &Okonkwo C. J(2017). Effectiveness of Extension Services in Inheriting the productivity, income, and welfare of women farmer's cooperatives in Kajuru Local Government Area of Kaduna State.

Oyewo, I.O., Adepogu, A.O., Oyewo, E.O. & Adigun, M.O. (2017). Perception of Cassava Farmers of Climate Change on Cassava Production in IDO Local Government of Oyo.

Ridley D., (2008) Social Enterprise as a Socially Rational Business: *International Journal of Entrepreneurial Behaviour& Research 14(5):291-31*

Rogers E.M. (1995). 'Diffusion of innovations.' (5th edition). The Free Press. New York.

Sherriff.,A(2018). History of Agricultural Extension in Nigerian.In S. F Adedoyin (ed) Agricultural Extension in Nigeria., Publication of Agricultural Extension Society of Nigeria.

Umar S. M. N, Olayemi Y. T &Suleman R., (2015). Awareness and use of information and communication technologies among extension agents in Kaduna State of Nigeria.