



FACTORS INFLUENCING SMALL SCALE FARMERS PARTICIPATION IN COOPERATIVE SOCIETIES IN GOMBE STATE, NIGERIA

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ABSTRACT

The study examined the factors influencing small scale farmers' participation in cooperative societies in Gombe State, Nigeria. Multistage sampling technique was employed in selecting 234 respondents. Primary data were collected using structured questionnaire and analyzed using descriptive statistics and logit regression analysis. The finding revealed that majority (50.7%, 74.4%, 80%, 64.3% and 53.3%) of the respondents were within the age bracket of (42-51 years) with a mean age of 44 years, male, married, had (5-12 persons) and a mean of 9 persons per household and had attended tertiary levels of education, respectively. The finding also showed that majority (76.2%, 53.3% and 52%) of the respondents had access to markets, extension service and had a mean yield of 94 bags of produce, respectively. The result also shows that respondents agree that cooperatives subsidizes farm input prices ($\bar{X}=4.4$), provides loans ($\bar{X}=4.3$), increase their access to market ($\bar{X}=3.5$) and extension ($\bar{X}=3.2$) among others. The logit regression analysis shows that quantity of farm produce harvested (0.0546378) and years of membership (0.6844786) were positive and significant ($P<0.05$) in influencing respondents' participation in cooperatives. On the other hand, inadequate sensitization, funding and bureaucratic bottleneck were the major constraints to cooperative participation which were ranked 1st, 2nd and 3rd respectively. The study concludes that quantity of produce harvested and years of membership had significant influence on farmers participation in cooperatives in the study area. The study recommended that cooperative societies should engaged in sensitizing farmers in order to increase their level of awareness, cooperative respondents should extend the skills and knowledge acquired to other farmers and government should employ extension agents, provide inputs and incentives to farmers to boost their production level.

Keywords: Farmers, Participation, Corporative, Small, Scale

INTRODUCTION

Agriculture is a major derivative sector of any economy; the impact of which can adequately contribute to national development. The feeding of the growing population of the world and Nigeria specifically; requires prompt attention to agriculture for satisfactory results (Ufiobor, 2017). Agriculture constitutes one of the most intractable aspects of economic development. It is not only a dominant and dynamic force for economic growth and food security requirements of the populace, also through it, the economic and industrial sector of a country can increase vehemently as raw materials can be obtained for key agro-based industries such as textiles, sugar and food processing units (Ibrahim *et al.*, 2017). In terms of employment, agriculture is by far the most important sector of Nigeria's economy engaging about 70% of the labor force (Adebayo and Olagunju, 2015). Except Africa, all developing regions of the world have achieved the Millennium Development Goal of reducing poverty by half between 1990 and 2015 (United Nation [UN] 2015). Over the past four decades, agricultural productivity growth in Sub-Saharan Africa (SSA) averaged only 2.4% while the productivity of the rest of the developing world improved by 4% (Dzanku *et al.*, 2015). Agriculture is the backbone of Nigerian economy and has persistently play substantial role in the national economy since then. Nigeria agricultural sector is regarded as the engine of Nigeria's economy, which contributes positively to alleviate rural poverty (Abiwon, 2017). It is a vehicle for reinforcing and fostering diverse economic development, foreign exchange earnings, sustainable food security, employment generation, social stability, land preservation, development of rural areas and has had a lasting impact over the past four decades (Kane, 2020).



Basically, poverty translate to low income, low access to production inputs, low productivity, illiteracy and lack of access to information or basic necessities of life. It describes a condition of low income that leads to low savings, resulting in low investment and as a consequence of that, productivity of farmers remain low. Unfortunately, the performance of cooperatives in Nigeria and other African has been far from satisfactory, the extent to which socioeconomic characteristics of farmers' influences their membership in those cooperatives is yet to be ascertained. It is against this backdrop that the study seeks to examine factors influencing small scale farmers' participation in cooperative societies in Gombe State, Nigeria. Previous findings showed that cooperative societies provides inputs at subsidized rates among its members hence the need to conduct this research in Gombe State where most of the rural and urban dwellers are farmers. The study will provide a guide to farmers, policy makers, cooperative societies and government agencies as it will provide adequate information on the nature of cooperatives their roles and activities targeted toward improving farmers' living standards and farmers' perception on roles of cooperatives in the study area. The research will also fill the gap and add to the body of existing literatures and serve as a guide for further research to students in the field of agriculture.

The aim of the study is to examine the factors influencing small scale farmers' participation in cooperative societies in Gombe State, Nigeria. While the specific objectives were to;

- i. describe the socioeconomic characteristics of the farmers
- ii. identify the perceived benefits of cooperative societies in the study area
- iii. determine the factors influencing farmers' participation in cooperative societies
- iv. identify and describe the constraints to farmers' participation in cooperative societies in the study area

METHODOLOGY

The Study Area

The study was conducted in Gombe State Northeast, Nigeria. Gombe State was created on 1st October, 1996. The State has eleven Local Government Areas (LGAs) with its administrative headquarters in Gombe. The State shares common boundary with Adamawa, Bauchi, Borno and Yobe State to the south, west, east and north respectively. It is located in the northern guinea savannah agro-ecological zone of Nigeria (Gombe State Agricultural Development Project [GSADP], 2018).

Gombe State lies on latitude 10° 15' N and longitude 11° E⁰. It has a total population of 2,365,040 (National Population Commission [NPC], 2006); this was projected to be 3,941,193 at 4.03% population growth rate in 2024. About 60% of the population in Gombe engages in agriculture and the State covers land mass of about 20,266 square kilometer (Km²). The annual temperature ranges from 14.5°C in December and January to 39.7°C in April and August. The area experiences both dry and rainy seasons with a maximum rainfall of about 863.2 mm per annum.

Gombe State is mainly an agrarian State, and some of the major crops grown include food crop like sorghum, rice, millet, small scale, cowpea, sweet potatoes, cassava and a wide variety of vegetables such as tomato, pepper, onion, melon etc. Also, other crops; groundnut, soya beans, benny seed and cotton are also being produced. Other occupations of the peasants include hunting, fishing and carving. Livestock rearing including cattle, sheep, goats and poultry contribute immensely to the economy of the study area. The Area is gentle undulating plains both east and west of an encarpment, which is defined by localized sandstone hills. Soil type has an impact on determination of land suitability for suitable crop production. Because all types of soils are not suitable for vegetable production. The soils in Gombe State were classified according to soil classification methods from the FAO-UNESCO classification system. According to National *Fadama* Development Project (*Fadama* III AF II) study on soil fertility Bauchi, Gombe revealed that, Soil has been categorised into six broad groups (Luvisols, Fluvisols, Nitosols, Regosols, Vertisols, and Leptosols) and were spatially distributed across the state based on the prevailing physiographic factors. The map of the study area is depicted in Figure 1

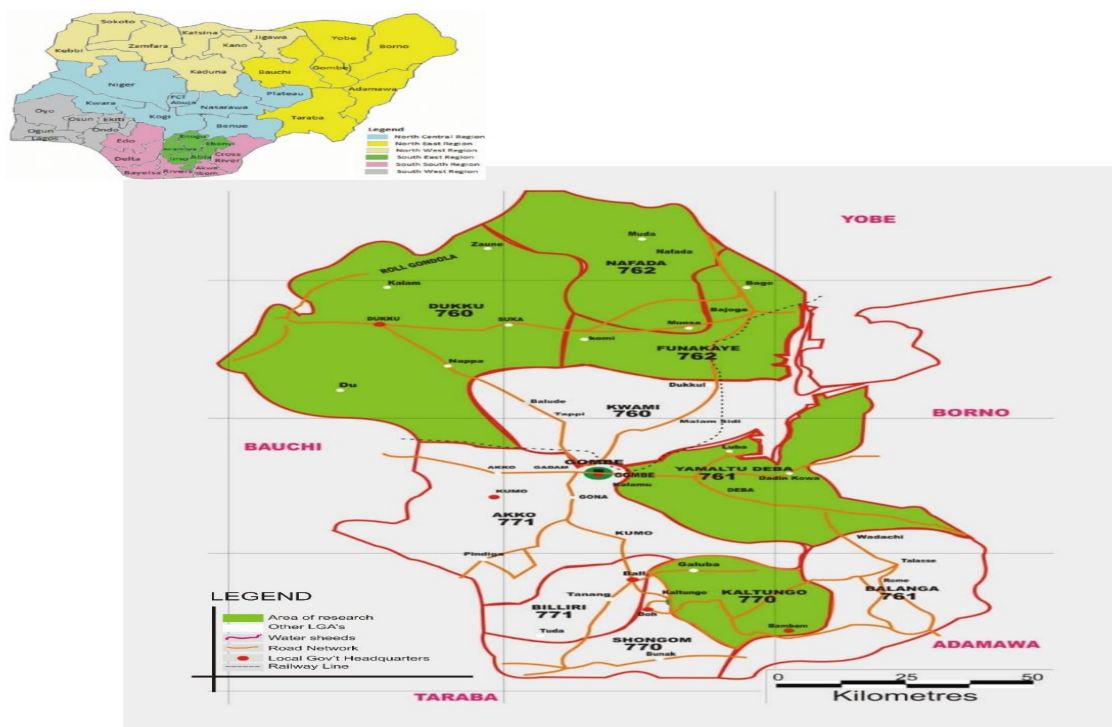


Figure 1: Map of the study area

Sampling Technique and Sample Size

A multi-stage sampling procedure was used in the selection of respondents for the study. The first stage involves systematic selection of three (3) LGAs from the State. The LGAs are; Funakaye, Balanga and Yamaltu-Deba. In the second stage simple random sampling technique was used to select two (2) villages from each of the selected LGAs making a total of six (6) villages, including; Funakaye; Bajoga and Tongo, Balanga; Talasse and Balanga while Yamaltu Deba; Kanawa and Wajari. In the third stage simple random sampling technique was used in selecting one cooperative society from each of the selected villages making a total of six (6) cooperative societies for the study. In the final stage 234 respondents were randomly and proportionally (42%) selected from the study area as depicted in Table 1. Slovin's formula was used for calculating sample size based on the assumption of 5% expected margin of error, 95% confidence interval and applying the finite population correction factor. Expressed as

$$S = \frac{N}{1+N(e)^2} \quad \dots (1)$$

where;

N = sample frame

e = level of significance desired

1 = constant

S = sample size

$$232/555 * 100 = 42\%$$



Table 1: Sampling Frame and Sampling Size

LGAs	Villages	Cooperatives	Sampling frame	Sample size (42%)
Funakaye	Bajoga	Yamu	119	50
	Tongo	Ashaka	85	36
Balanga	Talasse	Kindiyo Tomato Farmers	70	29
	Balanga	Jigawa Loluba	80	34
Yamaltu Deba	Kanawa	Liji Vision Women	125	53
	Wajari	Kwadon Community	76	32
Total			555	234

Source: Author's Computation

Data Collection

Primary data were collected through administration 234 well-structured questionnaires to the respondents and 227 questionnaires were retrieved for the study. The questionnaire administered comprise both close and open ended questions from March to August 2024.

Methods of Data Analysis

The study used both descriptive and inferential statistics in achieving the stated objectives. Descriptive statistics such as frequency, mean and percentage and inferential statistics using logit regression analysis.

Descriptive statistics

Descriptive statistics was used to achieve objectives i, ii and iv. This tool was employed to give a summary description of the data collected. It involved the use of percentages, frequency, tables and mean.

Logit regression analysis

Binary Logit Regression Model was used to achieve objective iii. The objective determines the socio-economic factors influencing farmers' participation in cooperative society's objective v. The empirical model is specified as follows:

$$= \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9 + \beta_{10}X_{10} + \beta_{11}X_{11} + \beta_{12}X_{12} + \beta_{13}X_{13} + \beta_{14}X_{14} + \beta_{15}X_{15} + \dots + e \quad \dots(1)$$

Where;

Y = Participation in cooperative societies (Y= 1 when "yes", Y= 0 when "no")

β_0 = constant term

β_1 - β_{15} = regression coefficients

X_1 = Sex (male=1, female=2)

X_2 = Age of farmers agents (years)

X_3 = Marital Status (married =1, Otherwise=0)

X_4 = Educational level of the farmers (Years spent in school)

X_5 = Household size (Number)

X_6 = Years of experience in farming (Number of Years)

X_7 = Occupation (Farmer=1, Civil servant=2, Trader=3, Artist=4)

X_8 = Source of capital (Personal savings=1, Loan from bank=2, Friend and relatives=3, Others=4)

X_9 = Access to credit (Yes=1, No=0)

X_{10} = Estimated level of income (Naira)

X_{12} = Farm size (ha)

X_{13} = Quantity of harvest (bags)

X_{14} = Access to extension (Yes=1, No=0)

X_{15} = Number of extension contacts (1=Weekly, 2=Forthnightly, 3=Monthly, 4= Quarterly, 5=Annually)

X_{16} = Annual income (in Naira)

X_{17} = Access to market (Yes=1, No=0)

a=Constant term of intercept

$b_i(i=1 \dots 15)$ are regression coefficients.

e=Error term



RESULTS AND DISCUSSION

Socioeconomic Characteristics of the Respondents

The result from Table 2 describe the socio-economic characteristics of the respondents. The finding shows that majority (74.4%) of the respondents were male, while 25.6% of the respondents were female. This implies that most of the respondents were male which could be attributed to the facts that small scale farming involves tedious activities that prevents women participation in the study area due to religious and cultural believes hindering full participation of women in the study area. This is in line with Bhukuth *et al.* (2018) and Agusalim *et al.* (2019). Male are often targeted to receive any available training (Agbo and Isa, 2017; Doss, 2018). The result further shows that respondents had the mean age of 44 years. This implies that most of the respondents were within their active age of production in agriculture which provides an avenue for easy adoption and participation in cooperatives as most young people will be willing to create wealth and thus obtain higher yield/outputs in the study area. This agrees with Tefera *et al.* (2016) who found that most of the cooperative small scale farmers were within their active ages of production. The result also indicates that majority (80.0%) of the respondents were married, also 15.4% and 4.4% of the respondents were divorced and single, respectively. This finding implies that most of the respondents were married and had certain level of responsibilities which could be a potential factor that could influence respondents' participation in cooperatives. The result further shows that respondents had a mean household size of 9 persons in the study area.



Table 2: Distribution of Respondents according to their Socioeconomics Characteristics (n=227)

Variables	Frequency	Percentage	Mean
Sex			
Male	169	74.4	
Female	58	25.6	
Age			
22-31	24	10.6	
32-41	56	24.7	
42-51	115	50.7	44
52-61	5	2.2	
62 and Above	27	11.9	
Marital status			
Single	10	4.4	
Married	182	80.2	
Divorced	35	15.4	
Household size			
1-4	36	15.9	
5-8	60	26.4	
9-12	86	37.9	9
13-16	42	18.5	
17 and Above	3	1.3	
Educational level			
Qur'anic education	54	23.8	
Non-formal education	23	10.1	
Primary	2	0.9	
Secondary	27	11.9	
Tertiary	121	53.3	
Years of farming experience			
4-9	91	40.1	
10-15	62	27.3	15
16-21	42	18.5	
22-27	-	-	
28 and Above	32	14.1	
Farm size (ha)			
1.0-1.5	23	10.1	
1.6-2.1	110	48.5	2.8
2.2-2.7	1	.4	
2.8 and Above	93	41.0	

Source: Field Survey, 2024

This finding implies that most of the respondents had relatively large household size which is of great importance and cheap source of labor in small scale farming in the study area. This is in line with Akerele (2016) who examined the effects of cooperative credit on cassava production in yewa division, Ogun State. The result also shows that more than half (53.3%) of the respondents had attended tertiary levels of education. The result also revealed that 23.8%, 11.9% and 10.1% of the respondents had qur'anic, secondary and non-formal education, respectively. Only 0.9% of the respondents had primary education in the study area. This finding implies that most of the small scale farmers had attended one form of education or another especially tertiary levels of education. This is an important factor in participation into cooperatives as highly educated farmers tends to understand the concept of cooperatives and its activities more than farmers with low level of education in the study area. Educational attainment, literacy, primary, secondary, and above secondary education impact farm productivity (Awotide *et al.*, 2019). Interestingly, the higher the farmer's educational attainment, the more they are likely to adopt agriculture information systems, modern methods, or try agri-business technologies (Barnes *et al.*, 2018).

The result further revealed that 40.1% and 27.3% of the respondents had 4-9 years and 10-15 years of farming experience, respectively. The finding also shows that 18.5% and 14.1% of the



respondents had farming experience of 16-21 years and 28 years and above, respectively. This translates that respondents had a good number of years in farming which helps in adoption of technologies and high level of participation into cooperatives by the respondents who over the years had witness the tremendous impact of cooperatives on themselves and other farmers in the study area. The result in Table 2 further shows that 48.5% and 41% of the respondents had a farm size of 1.6-2.1ha and 2.8ha and above. The result also shows that 10.1% and 0.4% of the respondents had a farm size of 1.0-1.5ha and 2.2-2.7ha of land, respectively. This finding infer that most of the respondents had relatively small farm size. This is expected to encourage participation in cooperatives as respondents will be in need of inputs at subsidized rates from cooperatives. This agrees with Anigbogu *et al.* (2015), who investigated the influence of socio-economic characteristics of the cooperative farmers on agricultural production in Anambra State.

Perceived Benefits of Cooperatives by the Respondents

The result from Table 3 depicts the perceived benefits of cooperatives by the respondents in the study area. The finding shows that the respondents agrees that cooperatives encourages farmers savings ($\bar{X}=4.7$), subsidizes farm input prices ($\bar{X}=4.4$), provides loans to farmers ($\bar{X}=4.3$) and help improve farmers living standards ($\bar{X}=4.3$) as indicated by the mean scores above the threshold value of 3.0.

Table 3: Distribution of Respondents according to the Perceived Benefits of Cooperatives (n=227)
Source: Field Survey, 2024

Variables	Mean	Remark
Cooperatives encourage farmers savings	4.7	Agree
Cooperatives help to subsidized farm input prices	4.4	Agree
Cooperatives provides loan to farmers	4.3	Agree
Cooperatives help improve farmers living standards	4.3	Agree
Cooperatives increase farmers access to market	3.5	Agree
Cooperatives increase farmers access to extension	3.2	Agree
Cooperatives facilitates adoption of modern technologies	3.1	Agree

The result further shows that respondents also agrees that cooperatives increases respondents access to market ($\bar{X}=3.5$), increases farmers access to extension ($\bar{X}=3.2$) and facilitates adoption of modern technologies ($\bar{X}=3.1$) as indicated by the mean scores above the threshold value of 3.0 in the study area. This implies that cooperatives plays a significant roles in small scale production through provision of extension services, farm inputs, access to market and savings among respondents in the study area. Interests in cooperatives have significantly increased due to the additional benefits it offers like improved market participation by small-holders, as well as in income generation and poverty reduction (Sentime, 2019; Wanyama *et al.*, 2015).

Factors Influencing Respondents Participation in Cooperatives

The result from Table 4 depicts the logit regression of the socio-economic factors influencing respondents' participation in cooperative societies. The finding revealed that quantity of farm produce harvested (0.0546378) and years of membership into cooperatives (0.6844786) were positive and statistically significant ($P<0.05$) in influencing respondents participation in cooperative societies. This finding implies that a unit increase in quantity of farm produce harvested and years of cooperative membership increases will lead to increase in cooperative society participation among respondents in the study area. This could not be unconnected to the fact that the aim of every farmer is to obtain high yield after harvest to sustain his livelihood and improve his living standards and income level. On the other hand years of membership increases position and rank of members' in cooperative which in turn comes with increase benefits, hence as the years of membership increases participation also increases in the study area.

Table 4: Logit Regression Showing Factors Influencing Respondents Participation in Cooperatives

Variables	Coef.	Std. Error	z	P z
Sex	-0.6224105	0.8083648	-0.77	0.441
Age	-0.0287566	0.0301602	-0.95	0.340
Marital status	0.0476733	0.6987803	0.07	0.946
Household size	-0.070204	0.0640812	-1.10	0.273
Educational level	-0.114069	0.1534126	-0.74	0.457
Years of farming experience	-0.1892062	0.0836213	-2.26	0.024**
Farm size	-1.218579	0.9747848	-1.25	0.211
Quantity of farm produce harvested	0.0546378	0.0253046	2.16	0.031**
Annual income	-0.0000201	8.64e-06	-2.32	0.020**
Access to market	-0.4194425	0.3977291	-1.05	0.292
Other occupation	0.0129684	0.2879138	0.05	0.964
Sources of capital	0.3804178	0.4133624	0.92	0.357
Access to credit	0.7657376	0.5937613	1.29	0.197
Type of cooperative	-0.2811595	0.1379896	-2.04	0.042**
Years of membership	0.6844786	0.3190148	2.15	0.032**
Access to extension	1.352287	0.8056695	1.68	0.093
Frequency of extension contact	-0.4585612	0.3332973	-1.38	0.169
cons	5.967079	2.360722	2.53	0.011

Source: Field Survey, 2024 **Significant at 5% ($P < 0.05$)

On the other hand the result shows that years of farming experience (-0.1892062), annual income (-0.0000201) and type of cooperatives (-0.2811595) were negative and statistically significant ($P < 0.05$) factors influencing respondents' cooperative society participation. This implies that increase in years of farming experience, annual income and type of cooperatives will lead to decrease in cooperatives participation among respondents. This could be attributed to the facts that as farmers farming experience increases he/she feels to be master of the profession and hence could be able to take decisions that are expected to enhance his welfare and thus may not participate in cooperatives. Annual income increase automatically reduces the number of crop farmers as most of them tends to relocate to urban areas for luxury thereby diverting to other sectors of the economy rather than farming in the study area. The type of cooperatives increase implies that there will be substandard cooperatives which reduces the number of participants in the study area. The finding agrees with Anigbogu *et al.* (2015), who investigated the influence of socio-economic characteristics of the cooperative farmers on agricultural production as proxied by the farmers' output levels in Anambra State. Findings revealed that age, educational qualification, farming experience, farm size, income, seedling obtain, fertilizer obtain and fertility of the land were significant factors influencing cooperative participation.

Constraints to Respondents' Participation in Cooperatives

The result from Table 5 shows the constraints faced by the respondents to participation in cooperative society. The findings reveals that the major constraints faced by respondents were inadequate sensitization, inadequate funding and bureaucratic bottleneck which were ranked 1st, 2nd and 3rd, respectively. However, poor record keeping and unfavorable government policies were ranked 4th and 5th, respectively as constraints to cooperative participation among the respondents. This finding implies that cooperatives roles in improving farmers' living standard cannot be over emphasized yet they are faced with a number of constraints.



Table 5: Distribution of Respondents According to their Constraints to Cooperative Participation (n=227)

Variables	Percentage*	Rank
Inadequate sensitization	100.0	1 st
Inadequate funding	90.7	2 nd
Bureaucratic bottleneck associated with coop.	85.9	3 rd
Poor record keeping	81.5	4 th
Unfavorable government policy	77.1	5 th

Source: Field Survey, 2024 *Multiple response

CONCLUSION AND RECOMMENDATION

Based on the findings, it can be concluded that quantity of farm produce harvested, years of membership, types of cooperative societies, annual income and years of farming experience were the significant factors influencing participation in cooperative societies in the State. Also

Based on the finding of the study the following recommendations were made;

- Cooperative societies should increase their level of awareness to farmers so as to increase small scale farmers participation in the study area
- Cooperative members should extend the skills and knowledge acquired to other farmers and invite them to participate in cooperative societies
- Cooperatives should provide a clear line of command to reduce bureaucratic bottleneck

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