Estimating the Poverty Status Among Ginger Women Farmers in Kaduna State, Nigeria

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ABSTRACT

This research estimated the poverty status among ginger women farmers in Kaduna State, Nigeria. Primary data were used based on a well-designed questionnaire. Data were analyzed using descriptive statistics, Foster, Greer and Thorbecke (FGT) poverty index, Tobit regression model, and principal component model. The outcome shows that the average age, years of farming experience, and educational level approximate 48 years, 9 years, and 11 years respectively. The poverty line is approximately 4, 172.06 Naira (1 USD = 1 104 Naira). The poverty incidence (P_0) approximately 0.5298, 95% CI [0.4575, 0.6021] this corresponds to 52.98% of ginger women farmers are poor, from the sampling population, this adds up to the fact that 63 ginger women farmers are poor, while 57 ginger women farmers were non-poor. Approximately 4.7 million of the entire population were poor, while 4.2 million were non-poor. The poverty depth (P_1) which explains that the gap between the poor ginger women farmers and the poverty line is calculated as 0.2876, 95% CI [0.2465, 0.3287] this implies that it will take the poor ginger women farmers (28.76% × 4, 172.06 Naira) the amount of 1, 199.88 Naira to cover up or make up for the poverty gap. The severity of poverty (P_2) which measures the squares of the poverty gap relative to the poverty line was calculated at 0.1967, 95% CI [0.1575, 0.2359], this means that 19.67% of the ginger women farmers were severely poor. The educational level, years of ginger farming, income from ginger farming, off-farm income, and membership of cooperative were different significantly from zero in influencing poverty status among ginger women producers. The major limitations were a lack of credit facilities, a lack of access to land, and a lack of farm inputs. The ginger women farmers should join cooperative associations as this will enable them to share ideas, and information on new farm techniques and access credit at single digit interest rates to increase productivity and reduce poverty.

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INTRODUCTION

Ginger (*Zingiber officinale*) has a medicinal value and significant valuable export commodity in Nigeria with 90% of what is produced being exported and 10% is consumed locally (Nextzon, 2018). Ginger is produced in 6 states in Nigeria, but Kaduna State stands out as the main ginger-producing state (Nextzon, 2018). Ginger is cultivated for its rhizome, and dried ginger is more desirable for export. Ginger from Nigeria is progressively sought because of its oil and pungency.

Ginger is useful in the following industries; food processing, pharmaceuticals, confectionaries, and beverages. The most ginger producing-countries are India, China, Nepal, Indonesia, and Nigeria(Nextzon, 2018). The main importing countries include the United States Saudi Arabia, Russia, Netherlands, Germany, France, Italy, Denmark, Belgium, Switzerland, and Greece (Nextzon, 2018). According to FAO (2024), in 2021 and 2022, the production of ginger in Nigeria approximates 707,100 tonnes and

743,527,47 tonnes respectively. In 2021 and 2022, the area harvested for ginger approximates 102320 ha and 96120 ha respectively (FAO, 2024). In 2021 and 2022 the world production of ginger approximates 4855031.84 tonnes and 4874216.17 tonnes respectively (FAO, 2024). This estimate corresponds that Nigeria produces 14.56% and 15.25% of world ginger production in 2021 and 2022 respectively. The world area harvested for ginger in 2021 and 2022 approximates 465,821ha and 450,647ha respectively.

In sub-Saharan Africa, Nigeria inclusive, women accounted for 70% of agricultural labour, 60% of agricultural production, and 80% of food production (Alabi et al., 2021). There are no quantitative and qualitative data on the role of women in sub-Saharan agriculture and rural development (Lawal et al., 2017). There is an absence of statistical information on the performance and status of all farmers in Africa including women farmers (Lawal et al., 2017). All farmers including women farmers in Africa are poor, food insecure, no adequate nutrition, have no access to clean water, and lack basic needs of well-being. The illiteracy of women in Africa is two times higher than men which confirms their disadvantaged position (Lawal et al., 2017). Rural women in Nigeria faced poverty, food insecurity, and the right to survive was not assured. Food poverty is the inability to have access to food or afford food that makes up a healthy diet. Food insecurity is rooted in poverty and has long-term measures on the country's communities to develop prosper and grow or on the ability to farm (FAO, 2004). In rural areas in Nigeria, poverty is severe and this affects the farming households where social services and infrastructures are limited or non-existent. When discussing nutrition and food security in sub-Saharan Africa, rural women farmers are very significant (Lawal et al., 2017). Rural women producers had difficulty of access to agricultural information even with the advent of ICTs (Information and Communication Technologies). Agricultural information is needed by rural women producers on market prices, credit, early warning systems on flood, drought, pest infestations and diseases, new farming technologies, storage, marketing, processing, and financing (Ofuoku et al., 2008). Agricultural information is needed by rural women producers to obtain the highest agricultural yields, increase income, and reduce poverty. Women's performance is very vital to the overall success of work directed towards remote area development for enhanced agricultural productivity (Ali et al., 2017). If the income of women is enhanced they will have more access to resources and invest in healthcare, children's education, and nutrition (Ogunlela and Mukhtar, 2009). In Africa, women are excluded from inheriting farmland like their male counterparts due to traditional and cultural practices (Moore et al., 2015). Women are prone to have

lesser access to agricultural productive factors than men counterparts due to gender-specific limitations, they have less power, less control, and less decision-making power over productive agricultural resources than men (FAO, 2011). Women in Africa also have less access to extension services and lower access to credit, they use fewer inputs such as improved seeds, fertilizers, and mechanical equipment (Lawal et al., 2017). This disparity negatively influences the productivity of women farmers, researches have shown that women are efficient as men and significantly contribute to agricultural productivity (FAO 2010; World Bank, 2008; Deere and Doss, 2006). Conflict and insecurity have continued to be the drivers of food insecurity with an estimated 11% rise in poverty in 2018 (World Food Program, 2018). Farmersherdsmen conflict has remained the most significant resource – use conflict in Nigeria (Ajuwon, 2004., Fasona and Omojola,2005). The conflicts have demonstrated a high potential to increase the insecurity, food crisis, and poverty, particularly in rural communities where most of the conflicts are localized with devastating consequences nationwide (Adisa, 2012). Farmersherdsmen have contributed serious threats to the means of survival and livelihood which have resulted in large-scale destruction of lives and properties (Solomon, 2021). According to Ogunyemi (2019), the farmersherdsmen conflict has not only heightened the level of insecurity but has also demonstrated high potential to increase the food crisis in Nigeria due to the loss of farmers' lives, animals, crops, and valuable properties.

Folorunso et al. (2018) analyzed food security and poverty status among agro–pastoralists in Barkin Ladi local government area, Plateau State, Nigeria using the Foster, Greer, and Thorbecke (FGT) food security index. The poverty line was estimated at 7, 599.26 Naira. The poverty incidence (P_0), poverty depth (P_1), and poverty severity (P_2), were estimated at 0.50,0.39, and 0.15, respectively.

Omonona et al. (2006) in their report titled Urban People's Perception and Causes of Poverty in Nigeria documented that farming experience, off-farm income are significant factors influencing poverty status, while household size was not a significant factor influencing poverty status.

Omonona and Agoi (2007) analyzed the food security situation among Nigerian urban households, evidence from Lagos State, Nigeria. The food security index was employed. The food insecurity line was defined as two–thirds of the mean per capita food expenditure of the total households. The households whose per capita expenditure falls below 7,967.19 Naira are designated food insecure, while the households whose mean per capita food expenditure equals or is greater than 7, 967.19 Naira are food secure. The food insecurity incidence for the household is found to be 0.49.

Igbalajobi et al. (2013) determined poverty incidence among rural farmers in Ondo State, Nigeria. The data were analyzed using the Foster–Greer–Thorbecke (FGT) poverty measure. Approximately 59.3% of the respondents were actually poor, while 27.6% of the poverty line (580.42 USD) was needed to get out of poverty.

The objective of the study is to estimate the poverty status among ginger women farmers in Kaduna State, Nigeria. Specifically, the objectives include:

(i) estimate the poverty status of ginger women farmers,

(ii) evaluate the factors influencing the poverty status of ginger women farmers,

(iii) determine the constraints faced by ginger women farmers.

EMPIRICAL and LITERATURE REVIEWS

Oyekale et al. (2021) determined the poverty status among farming households in the Odogbolu local government area, Ogun State, Nigeria. The data were analyzed using descriptive statistics, Foster–Greer and Thorbecke (FGT), and the Tobit regression model. The outcome shows that 26.7% of the households were poor. The female-headed households were poorer (42%) than the male-headed households (21%). The Tobit regression model result shows that age, household size, and land size were significant factors influencing the poverty status of farming households.

Aguibiade and Oke (2019) examined the poverty status and factors influencing the poverty profile of cassava farming households in Osun State, Nigeria. Data were analyzed using the Foster–Greer–Thorbecke index and Tobit regression model. The result of FGT analysis reveals that poverty incidence was 28.9%, poverty depth was 5.3%, and poverty severity was 1.5%. The Tobit regression model result shows that household size, farming experience, and revenue generated from cassava farms were factors influencing the poverty profile of the farming households.

Ahmed et al. (2019) examined the poverty status of women in rural farming households in the Iwo local government area, Osun state, Nigeria. Data were analyzed using descriptive statistics, Foster–Greer–Thorbecke, and Logit regression analysis. The FGT analysis showed that the headcount index, poverty gap index, and poverty severity index were 0.580, 0.331 and 0.132, respectively. The Logit regression analysis revealed that age and household size had a negative influence on poverty status, while household expenditure and farming experience had a positive influence on poverty status.

Olorunsanya et al. (2012) evaluated the poverty status of rural farming households in Osun State, Southwestern, Nigeria. Data were analyzed using descriptive statistics, the Foster–Greer–Thorbecke

(FGT) index, and the Tobit regression model. The result of the poverty indices shows that 35% of the farmers' beneficiaries of the empowerment program were poor, while 55% of the non–beneficiaries of the program were non–poor. The Tobit regression result shows that household size, amount of credit utilized, and annual farm income were factors influencing the poverty status of rural farming households.

Alabi et al. (2021) evaluated smallholder rural women rice farmers' decision-making process, agricultural intensification, and poverty status in Abuja, Nigeria. Data were analyzed using descriptive statistics, Heckman–2–stage model, Foster–Greer–Thorbecke (FGT) poverty model, and Logit regression model. The FGT result shows that poverty incidence, poverty depth, and poverty severity were 0.5178, 0.2866, and 0.1956, respectively. The significant factors influencing poverty status include educational level, access to credit, membership of cooperatives, and farm income.

Hussaini et al. (2020) examined investment in rice-value addition activities among farmers in Kebbi state, Nigeria. Data were analyzed using the Foster–Greer–Thorbecke (FGT) index and Logit regression model. The result revealed that 58.3% of rice farmers were poor, while 42.7% were non–poor. The marginal effect of income from parboiling, winnowing, drying, destoning, and bagging value addition was negative and statistically significant in influencing poverty status.

MATERIALS and METHOD

This study was conducted in Kaduna State, Nigeria. The population of the entire state as of 2021 is 8.9 million (NPC, 2022). A multi-stage sampling design was used to select 120 ginger women producers. In the first stage, the purposive sampling method was used to select Kaduna State, the major producer of ginger in Nigeria. Second stage, two local government areas were randomly chosen. In the third stage, three villages in each local government area were randomly chosen making a total of six villages. In the fourth stage, a proportionate-random sampling method was used to select 120 ginger women farmers. The total sample frame of ginger women farmers was 171. Primary data were used based on a well-designed questionnaire. The sample number of ginger women producers was based on the established Yamane (1967) formula given as:

$$n = \frac{N}{1+N(e^2)} = \frac{171}{1+171\,(0.05)^2} = 120 \dots\dots\dots\dots\dots(1)$$

Where,

n = The Sample Number

N = The Sample Frame of Ginger Women Producers

The data were analyzed using descriptive and inferential statistics as follows:

FGT (Foster, Greer and Thorbecke)

This follows Adekoya (2014) and it is expressed as:

$$P = \frac{1}{N}\sum_{i=1}^{q}\left[\frac{(Z-Y_i)}{Z}\right]^{\alpha} \dots\dots\dots\dots (2)$$

Where,

P = Foster, Greer, and Thorbecke Index ($0 \leq P \leq 1$)

N = Total Number of Ginger Women Farmers (Number)

q = Number of Ginger Women Farmers below the Poverty Line

Z = Poverty Line (Naira)

Y_i = Per Capital Household Expenditure of the Ginger Women Farmers

α = Non-Negativity Aversion Parameter (0, 1, or 2)

The estimation of poverty status can be decomposed to Prevalence of Poverty (P_0), Poverty Depth (P_1), and Severity of Poverty (P_2). The model is expressed as:

$$P_0 = \frac{q}{N} \ (if \ \alpha = 0) \dots\dots.. (3).$$

$$P_1 = \frac{1}{N}\sum_{i=1}^{q}\left[\frac{(Z-Y_i)}{Z}\right] \ (if \ \alpha = 1) \dots\dots\dots\dots (4)$$

$$P_2 = \frac{1}{N}\sum_{i=1}^{q}\left[\frac{(Z-Y_i)}{Z}\right]^2 \ (if \ \alpha = 2) \dots\dots\dots\dots (5)$$

The Construction of Poverty Line

The poverty line is defined as:

$$PL = \frac{2}{3} \times MPCHE \dots\dots\dots\dots\dots (6)$$

$$MPCHE = \frac{THPHE}{TNR} \dots\dots\dots\dots\dots (7)$$

Where,

$MPCHE$ = Mean Per Capital Household Expenditure (Naira)

TNR = Total Number of Respondents

$THPHE$ = Total Household Per Capital Expenditure (Naira)

PL = Poverty Line

Tobit Dichotomous Regression Model

The model is explicitly stated as:

$$Y_i = P_i^* = \beta_0 + \beta_1 P_1 + \beta_2 P_2 + \beta_3 P_3 + \beta_4 P_4 + \beta_5 P_5 + \beta_6 P_6 + \mu_i \dots\dots\dots\dots (8)$$

$$Yi = \begin{cases} P_i^*, if \ \ P_i^* > 0 \, ie\,(Z>I) \\ 0, if \ P_i^* \leq 0 \, ie\,(Z<I) \end{cases}$$

Where,

Y_i = The Dependent Variable, it is Discrete when the households are not Poor, and Continuous when they are Poor.

P_i^* = Poverty Depth defined as $\left[\frac{Z-I}{Z}\right]$

Z = Poverty Line

I = Mean Households Food Expenditure per Adult Equivalent

β_0 = Constant Term

β_1 - β_6 = Regression Coefficients

P_1 = Educational Level (Years)

P_2 = Age in Years

P_3 = Years of Ginger Farming

P_4 = Income from Ginger Farming (Naira)

P_5 = Off-Farm Income (Naira)

P_6 = Membership of Cooperatives (1, Member; 0, Otherwise)

μ_i = Noise Term

PCM (Principal Component Model)

The constraints faced by ginger women producers were submitted to PCM, the model will reduce many interrelated constraints to a few unrelated ones. The principal Component Analysis is stated thus:

$$x = (x_1, x_2, x_3, \dots, x_p) \quad (9)$$
$$\alpha_K = (\alpha_{1k}, \alpha_{2k}, \alpha_{3k}, \dots \alpha_{pk}) \quad (10)$$
$$\alpha_k^T X = \sum_{j=1}^{p} \alpha_{kj} X_j \quad (11)$$
$$Var = [\alpha_k^T X] \ is \ Maximum \quad (12)$$

Subject to:

$$\alpha_k \alpha_K = 1 \quad (13)$$
and
$$cov\,[\alpha_1^T X - \alpha_2^T X] = 0 \quad (14)$$

The variance of each of the principal components are:
$$Var[\alpha_k^T X] = \lambda_k \quad (15)$$
$$S = \frac{1}{n-1}(X-X)(X-\overline{X})^T \quad (16)$$
$$S = \frac{1}{n-1}\sum_{i=1}^{n}(X_i - \overline{X_i}\,(X_i - \overline{X_i})^T \quad (17)$$

Where,

X = Vector of p Random Variables

α_k = Vector p Components

λ_K = Eigen Value

T = Transpose

S = Covariance Matrix

RESULTS and DISCUSSION

Summary Information of Factors of Interest

The summary estimates of variables of interest are presented in Table 1. The mean age, years of ginger farming experience, and educational level approximates 48 years, 9 years, and 11 years respectively. Similarly, 98% of respondents are married, 58% are members of cooperative organizations, while 45% have access to credit. In addition, the respondents have an average household

size of 9 persons, and they are smallholder farmers with an average farm size of 0.95ha. This communicates that the ginger women farmers are young, energetic, and resourceful. They are smallholder farmers with less than 5 hectares of ginger farms. About 0.02% of ginger women farmers are not married while 55% of them have no access to credit. In addition, 42% of ginger women farmers do not belong to any cooperative organizations. This outcome is in accord with the result of Nwaiwu et al. (2022) who documented that the average age of vegetable rural women farmers is 44 years, and 75.56% of them had no access to credit in Imo State, Nigeria.

Table 1. Summary estimates of variables of interest

Variables	Unit of Measurement	$\bar{X}_i$	SD
Age	Years	48	14.56
Household Size	Number	9	2.72
Marital Status	1, Married; 0, Others	0.98	0.73
Cooperative Members	1, Member; 0, Others	0.58	0.47
Years of Farming Experience	Years	9	4.36
Farm Size	Hectares	0.95	0.27
Access to Credit	1, Access; 0, Others	0.45	0.17
Educational Level	Years	11	4.07

Source: Field Survey (2024)

Poverty Status of Ginger Women Farmers

The poverty status of ginger women farmers is presented in Table 2 and Table 3. The poverty line is estimated from $MPCHE$. Two-thirds (4, 172. 06 Naira) $MPCHE$ is used as the poverty line as documented by Omonona et al. (2007). The poverty incidence (P_0), poverty depth (P_1), and severity of poverty (P_2) were calculated using the Foster, Greer, and Thorbecke (FGT) index approximation $(0 \leq P \leq 1)$. The (P_0) is estimated as 0.5298, 95% CI[0.4575, 0.6021] this represents that 52.98% of ginger women farmers are poor, from the sampling population, approximately 63 ginger women farmers are poor while 57 ginger women farmers were non–poor. The entire population reveals that 4.7 million people were poor, while 4.2 million people were non–poor. The (P_1) which estimates the depth of an average poor ginger women farmer from the poverty line is calculated as 0.2876, 95% [0.2465, 0.3287]. This implies that an average ginger woman farmer would require 28.76% of the poverty line [(28.76% × 4,172.06 Naira)] which was estimated at 1,199.88 Naira to get out of poverty. The (P_2) which measures the squares of the poverty gaps relative to the poverty line was calculated at 0.1967, 95% CI[0.1575, 0.2359] this expresses that 19.67% of the ginger women farmers were severely poor. The PCE is calculated at 11, 205.22 Naira (1 USD = 1, 104 Naira) for non-poor, and 1, 884.64 Naira for poor ginger women farmers. This outcome is in consensus with Folorunso et al. (2014) who estimated the poverty line of 7, 599.26 Naira among respondents in Plateau State, Nigeria.

Table 2. Poverty Status of Ginger Women Farmers

Poverty Status	Per Capital Household Expenditure			Total Household Expenditure		
	Non-Poor	Poor	Total	Non-Poor	Poor	Total
Mean	11, 205.22	1, 884.64	6, 258.09	81 440.79	19, 840.71	52, 176.76
Min	4,222,23	195	195	17, 150	1, 950	1 950
Maximum	30, 807.78	3,844	30, 807.78	433, 860	111 860	433, 860
Poverty Line = 4, 172.06 Naira						
FGT			CI Upper Bound	CI Lower Bound		
Poverty Incidence (P_0) = 0.5298			0.4575	0.6021		
Poverty Depth (P_1) = 0.2876			0.2465	0.3287		
Poverty Severity (P_2) = 0.1967			0.1575	0.2359		

Source: Field Survey (2024)   1 USD = 1, 104 Naira, CI = Confidence Interval

Table 3. Distributions of Poverty Indices

Producers	Frequency	Percentage
Poor (Per Capital Income< 4, 172.06 Naira)	63	52
Non–Poor (Per Capital Income ≥4, 172.06 Naira)	57	48
Total	120	100.00

Source: Field Survey (2024)   1 USD = 1, 104 Naira

Factors Influencing Poverty Status among Ginger Women Farmers

The MLEs of the factors influencing poverty status among ginger women producers using the Tobit regression model are presented in Table 4. About five (5) factors were included in the model, and all the factors have negative coefficients and this is in conformity with a priori expectations. The education level and membership of the cooperative are different significantly from zero at p =0.000 probability level, respectively. In addition, the years of ginger farming, income from ginger farming, and off-farm income are different significantly from zero at p=0.038 probability level respectively. The coefficient of income from ginger farming is -0.2713, 95% CI[-0.2523, -0.2903] and the marginal effect is -0.3043, this shows that a 1%

increase in income keeping all other factors fixed will give rise to 30.43% decrease in poverty status among ginger women farmers. Similarly, the coefficient of off-farm income is -0.1621, 95% CI [-0.1501, -0.1741] and the marginal effect is -0.1708, this approximates that a 1% increase in off-farm income keeping all other stimuli fixed will give rise to 17.08% decrease in poverty status among ginger women farmers. The Pseudu R square value is 0.8709, this denotes that 87.09% of the poverty status is explained by the stimulus included in the model. The LLF (The Likelihood Function) (-142.72) is different significantly from zero at the p=0.000 probability level. This is evidence that the data and model are of good fit. This outcome is in accord with Omonona and Agoi (2007) and Igbalajobi et al. (2013).

Table 4. The MLEs (Maximum Likelihood Estimates) of the Factors Influencing Poverty Status among Ginger Women Producers using Tobit Dichotomous Regression Model

Variables	Parameters	Coefficient	Standard Error	t-Value	ME
Constant	β_0	-0.7216***	0.1449	-4.98	-0.0736
Educational Level	β_1	-0.3851***	0.0557	-6.91	-0.2903
Years of Ginger Farming	β_2	-0.1472**	0.0593	-2.48	-0.2412
Income from Ginger Farming	β_3	-0.2713**	0.1076	-2.52	-0.3043
Off Farm Income	β_4	-0.1621**	0.0672	-2.41	-0.1708
Membership of Cooperatives	β_5	-0.2101***	0.0334	-6.28	-0.2704
Diagnostic Statistics					
Sigma	0.19743				
LR_{χ^2} (5)	96.45***				
Pseudo R^2	0.8709				
LLF (Log Likelihood)	-142.72				
Prob $>_{\chi^2}$	0.00000***				

Source: Field Survey (2024), ME=Marginal Effect
*Significant at ($P < 0.10$)., **Significant at ($P < 0.05$), ***Significant at ($P < 0.01$).

Table 5. The Challenges Faced by Ginger Women Producers

Constraints	Eigen-Value	Difference	Proportion	Cumulative	Rank
Lack of Credit Facilities	9.4714	5.7570	0.3474	0.3474	1st
Lack of Access to Land	3.7144	0.7871	0.1196	0.4670	2nd
Lack of Farm Inputs	2.9273	0.4121	0.1022	0.5692	3rd
Farmers/ Herders Clash	2.5152	0.1810	0.1005	0.6697	4th
Poor Market Linkages	2.3342	0.2489	0.1002	0.7699	5th
Poor Prices of Commodity	2.0853	1.0981	0.0105	0.7804	6th
Bartlett Test of Sphericity					
X^2	3579.13***				
KMO	0.839				
Rho	1.00000				

Source: Field Survey (2024), KMO – Kaiser-Meyer-Olken

The Challenges Encountered by Ginger Women Producers

The challenges faced by ginger women farmers are put through analysis of PCM (Principal Component

Model). The PCM has the capacity to withhold unrelated limitations that have Eigenvalues of more than one, and discard limitations that have Eigenvalues of less than one. Approximate 6 limitations were reserved by the model. The criteria for

selecting those challenges that were retained are explicitly those with Eigenvalue greater than one (1). The first limitation is the lack of credit facilities with an Eigenvalue approximately 9.4714 which explains about 34.74% of all restraints included in the model. The second limitation is the lack of access to farmland with an Eigenvalue of approximately 3.7144 which explained 11.96% of all hindrances included in the model. The third limitation is the lack of farm input with Eigenvalue of approximately 2.9273 which explains about 10.22% of all impediments included in the model. All the limitations withheld by the model explained 78.04% of all the restraints identified by the ginger women farmers. The chi-square value (3579.13) is different significantly from zero at the p=0.000 probability level, this confirmed the use of the PCM for the estimation (Table 5).

CONCLUSION and RECOMMENDATIONS

The study estimated the poverty status among the ginger women producers in Kaduna State, Nigeria. A multi-stage sampling design was employed. Primary data were utilized based on a well-structured questionnaire. Descriptive and inferential statistics were employed for data analysis. The outcome of the research shows that the average age of ginger women farmers was 48 years. The mean years of farming experience was 9 years. On average, the ginger women farmers had 11 years of school education. Similarly, about 98% of ginger women farmers were married. Approximately 58% of respondents were members of cooperative organizations, while 45% had access to credit. The poverty line is approximately 4, 172.06 Naira (1 USD = 1 104 Naira). The poverty incidence (P_0), poverty depth (P_1), and severity of poverty (P_2) were estimated using Foster, Greer, and Thorbecke (FGT) index approximating $(0 \leq P \leq 1)$. The (P_0) is approximated at 0.5298, 95% CI [0.4575, 0.6021] this corresponds to 52.98% of ginger women farmers are poor, from the sampling populations, this adds up to the fact that 63 ginger women farmers are poor, while 57 ginger women farmers were non-poor. Approximately 4.7 million of the entire population were poor, while 4.2 million were non–poor. The (P_1) which explains that the gap between the poor ginger women farmers and the poverty line is 0.2876, 95% CI [0.2465, 0.3287], it will take the poor ginger women farmers [28.76% × 4, 172.06 Naira) the amount of 1, 199.88 Naira to cover up or make up for the poverty gap. The (P_2) which expresses the distance of each poor ginger women farmer to one another was calculated at 0.1967, 95% CI [0.1575, 0.2359] this stands for that 19.67% of the ginger women farmers were severely poor. The educational level, years of ginger farming, income from ginger farming, off-farm income, and membership of cooperative were different significantly

from zero in influencing poverty status among ginger women producers. The major limitations faced by ginger women producers were lack of credit facilities (1st), lack of access to land (2nd), and lack of farm inputs (3rd). Established on the outcomes of this research, the following recommendations were made:

(i)Credit (finance) at single digit interest rate, devoid of cumbersome administrative procedures should be made available to ginger women producers to purchase agrochemicals, fertilizers, and other farm inputs at appropriate times, this will increase productivity and reduce poverty.

(ii) The government should in terms of policy formulations allow ginger women farmers easy access to farmland, this will increase productivity and reduce the level of poverty.

(iii) Farm inputs such as improved varieties, fertilizers, and agrochemicals should be provided for ginger women farmers at subsidized prices to increase income and productivity.

(iv) Ginger women farmers should form themselves into cooperative organizations for easy access to farm inputs, credit, and bulk sales of produce.

(v)Access to market linkages is necessary for the ginger produce to be sold at appropriate prices.

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