Original Research Article

Poverty Status and Scale Economies of Maize-based Farmers in Southwest, Nigeria

Abstract

The study examines the relationshipbetween poverty status and scale economies of maize-based farmers in Southwest, Nigeria. Primary data were sourced with the aid of a well-designed questionnaire and oral interview. A multistage sampling technique was used to randomly select 240 maize-based farmers in the area. The main data analysis used were Foster-Greer-Thorbecke (FGT) and the probit regression model. The FGT results showed that poverty incidence was prevalent among small-scale farmers across the cropping patterns. It further highlighted the potential of medium and large-scale farming operations in reducing poverty due to their capacity for higher income generation. Moreover, years of farming experience, access to credit, and larger farm sizes emerge as crucial factors in alleviating poverty among farmers using probit regression analysis. However, we noted the impact of certain variables, such as marital status and land acquisition, which can vary regionally and contextually. Therefore, by recognizing the role of farm scale and the various socio-economic factors at play, stakeholders can develop more effective strategies to improve the livelihoods of maize-based crop farmers and promote sustainable agricultural development.

Keywords:maize-based, production, poverty, scale economics, Nigeria

1. Introduction

Nigeria is a country richly endowed with diverse resources including agriculture, petroleum, human capital, and solid minerals, a paradox unfolds. Despite its abundance, Nigeria finds itself ranked among the world's poorest nations [1, 2]. Poverty, in its most fundamental sense, signifies the absence of essential resources—food, shelter, income, assets, education, and health—necessary to attain a minimal standard of living. Astonishingly, nearly 75% of poverty's grip in this nation is felt in rural areas [3].The pervasive scarcity of income in many households leaves them unable to meet their basic needs. Consequently, hunger, malnutrition, and poverty persist as formidable challenges. The harshest impact of poverty is endured by rural inhabitants, particularly those who depend primarily on agricultural activities for their sustenance, including maize farming [4].

Poverty, we understand, is a multifaceted plight. It encompasses not only material deprivation but also the psychological anguish of impoverishment, a sense of vulnerability, and a feeling of powerlessness in relation to societal institutions [5, 6]. Thus, poverty alleviation becomes the vital process of enhancing the quality of life for those afflicted by effectively reducing the proportion of households living below an acceptable minimum standard. As [7, 8]aptly describe, poverty alleviation endeavours to reduce poverty's detrimental impact on the lives of the less fortunate in a sustainable manner. Importantly, poverty has the potential to impede access to healthcare, education, agricultural assets, and the adoption of innovative

technologies. This, in turn, adversely affects agricultural productivity [9, 10], creating a vicious cycle where poverty becomes both a consequence and a cause of diminished agricultural output.

Strikingly, despite Nigeria's status as the world's sixth-largest oil exporter, poverty rates continue to escalate. Over recent decades, the nation's struggle with poverty has intensified [11], surpassing the rates found in most other countries [12, 13]. In response to this dire situation, successive governments in Nigeria have implemented various policies and programs aimed at boosting agricultural production [10, 14]. Globally, there has been substantial progress in reducing poverty over recent decades. Yet, the population living in extreme poverty remains unacceptably high. Moreover, progress has been unevenly distributed, with Sub-Saharan Africa, including Nigeria, experiencing an increase in poverty rates [12]. This underscores the urgent need to combat poverty, especially in Sub-Saharan Africa.

Consequently, robust poverty alleviation initiatives have become imperative for all developing countries grappling with poverty. In Nigeria, both the government and civil society, with support from non-governmental organizations, have dedicated substantial resources to poverty eradication through initiatives such as the Millennium Development Goals (MDGs), Farm input subsidies (E-wallet project), and more recently, the N-power program. Despite these efforts, the specter of poverty in Nigeria continues to loom large.

Agriculture remains the primary source of livelihood for a significant portion of the rural population in Nigeria, and maize production holds promise as a potential avenue for poverty alleviation. Maize, being a staple food in Nigeria, accounts for approximately two-thirds of the caloric intake of the country's population [15]. Studies conducted in various regions of Nigeria underscore the increasing significance of maize as a crop, not only for sustenance but also for commercial cultivation, income generation, and enhancement of the welfare of farming communities [16, 17, 10, 18].

Again, achieving poverty alleviation in agriculture is a complex task that demands a holistic approach, considering the significance of farm scale and the diverse socio-economic factors at play [5, 8]. Addressing poverty in maize-based farming requires tailored strategies that take into account contextual variations [11] and the specific needs of different farming communities [8, 9]. Therefore, as much as the scale economies matter, so do cropping patterns and socio-economic factors in the pursuit of poverty alleviation in agriculture.

In light of these challenges and opportunities, this study delves into the complex interplay between poverty and maize-based farming in Southwest Nigeria, with a particular focus on the influence of scale economies. The quest to understand this dynamic offers a potential path toward mitigating poverty, enhancing agricultural productivity, and improving the lives of those reliant on maize farming. Again, several studies have worked on maize production [19, 20, 10, 18]and poverty status [13, 21, 22, 8, 11]separately but research on the nexus between maize-based production and poverty status, especially disaggregating-based on the scale of economies is very scarce in the literature. In filling this gap, the study specifically assesses the poverty status of the maize-based farming households (large, medium, and small scale)in the study area; and determines the effect of scale economics on the poverty status of maize-based farmers.

2. Methodology

The study is conducted in the Southwest region of Nigeria, encompassing Ekiti, Lagos, Ondo, Ogun, Osun, and Oyo states (Figure 1). This region is chosen due to its significance in maize cultivation and its varying economic and agricultural landscapes, which provide an ideal setting for examining poverty dynamics and scale economies among maize-based farming households[18, 23]. Primary data were gathered through structured interviews and surveys conducted among maize-based farming households in the selected study areas. Information related to household demographics, income, expenditure, farming practices, and access to resources were collected.A multi-stage sampling procedure was used for data collection from maize-based farmers. In the first stage, two maize-based producing states were purposively selected. In the second stage of the sampling process, two LGAs with the highest proportion of maize-based farmers in each agricultural district will be purposively selected. Furthermore, in the third stage, two communities were randomly selected from each LGA to give a total of 24 communities. The last stage was the application of the simple random sampling technique using the ballot method to select ten maize-based cropping systems, each community giving rise to a total sample size of 240 respondents.

Figure 1: Map of Southwest, Nigeria

The main data analysis used were Foster-Greer-Thorbecke (FGT) and the probit regression model. FGT poverty analysis, a widely used methodology for measuring poverty and inequality, was employed to assess the poverty status of the sampled maize-based farming households. The FGT poverty measures include the Foster-Greer-Thorbecke (FGT) poverty index, which quantifies the extent, depth, and severity of poverty. This analysis provided a comprehensive understanding of poverty dynamics among different scales of maize farmers.

Relative poverty line analysis: The poverty line was defined based on the Mean Per Capita Income (MPCI) of the respondents. A relative approach [24, 11] in which a respondent is regarded as poor relative to other respondents within the maize-based production industry in the study area was used. The poverty line was used to dichotomize the respondents into poor and non-poor. The respondents with per capita income less than the MPCI will be classified

as poor while those with per capita income equal to and greater than the MPCI as non-poor. The estimate is expressed as:

Per Capital Income (PCI) = Total Household Income/Household size

Mean Per Capital Income (MPCI) = PCI/number of observations

The poverty line (Z) is the 2/3 of MPCI.

Poverty index analysis: The estimation of FGT indexes was determined(the incidence, depth, and severity) among maize-based farmers in the study area. This analysis was based on the p–alpha ($P\alpha$) poverty measure proposed by Foster Greer and Thorbecke[25] which is expressed as:

$$P_\alpha = \frac{1}{N}\sum_{i=1}^{q}\left(\frac{z-g_i}{z}\right)\alpha \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where: Z = Poverty line; gi = Per capita income of the ith farmer; q = Number of respondents below the poverty line; N = Sample size; α = 0, 1, and 2 which represent the incidence, depth, and severity of poverty, respectively.

Probit Regression Model: To determine the effects of scale economies on poverty status among maize-based farming households, a Probit regression model was employed. This model is suitable for analyzing binary outcomes, such as poverty status (poor/non-poor). The dependent variable (Y) (i.e., farmers' poverty status) is either 0 or 1. The probit regression model is specified [23] as follows:

$Y_i = \beta_o + \beta_i X_i + U$ ………………………………………………………. (3)

Y = poverty status (1 = poor and 0 = non-poor), X_i = Independent variable socio-economic characteristics and scale economies

β_o = Intercept parameters. β_i = Slope of estimated parameters U = error term.

$Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \ldots\ldots + \beta_{11} X_{11} + U$ ………………………………….. (4)

X_1 = Age of the Respondent (years), X_2 = Sex of the respondents (dummy 1=male, 0= female) X_3 = Marital status (dummy 1=married, 0= single), X_4 = small-scale (1= small-scale and 0, otherwise), X_5 = Farm size (hectares), X_6 = Farming experience (years), X_7 = Household size (number of persons) X_8 = labour (man-day), X_9 = medium-scale (1= medium-scale and 0, otherwise), X_{10} = Access to credit, X_{11} = large-scale (1=large-scale and 0, otherwise), U = Error term.

3.0 Results and Discussion

3.1.0 Estimates of the Poverty Line and the Status

3.1.1 Poverty Line of Sole Maize Farmers

The mean per capita income (MPCI) of sole maize farmers was calculated as follows: ₦43,366.12 for small-scale, ₦148,935.6 for medium-scale, and ₦90,865.08 for large-scale farms, respectively. The poverty line for this study is set at two-thirds of the mean per capita income, resulting in ₦28,910.75, ₦99,209.04, and ₦60,576.72 for small-scale, medium-scale,

and large-scale farms, respectively. Households earning less than these amounts annually are classified as poor, while those with incomes above the poverty line are considered non-poor.In small-scale farms, 25% of respondents earned less than the poverty line, while 75% earned at least the poverty line. In medium-scale farms, 55% of farmers were classified as poor, while 45% were non-poor. For large-scale farms, 17% of farmers earned below the poverty line, while 83% exceeded it. Notably, the majority of farmers fell below the poverty line in medium-scale farms, while the majority were non-poor in both small-scale and large-scale farms.These findings align with previous studies such as [26], which reported a poverty rate of 25% in Bayelsa State, and [11], who found approximately 64% of poor households in Southwest Nigeria.

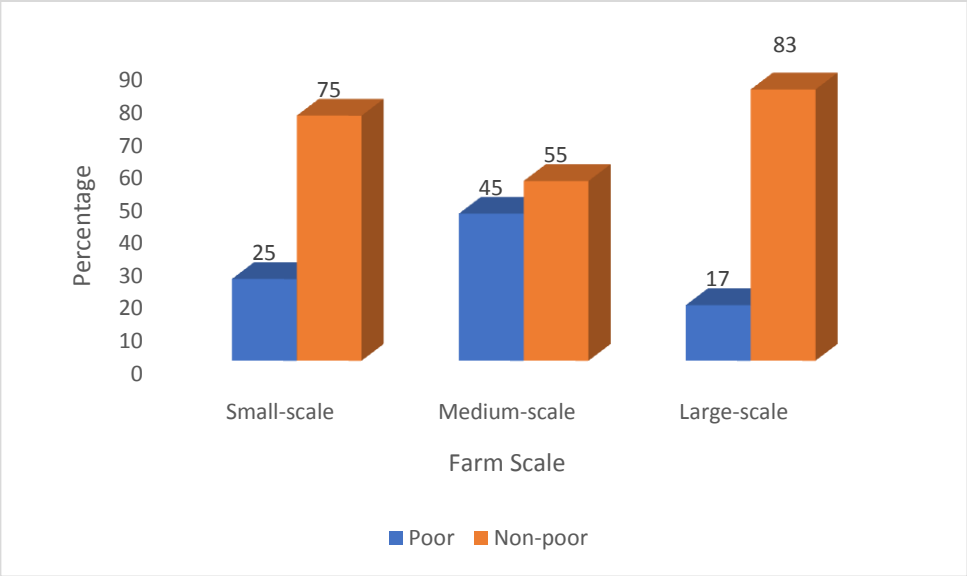

Figure 2: Poverty Status of Sole Maize Farmers

Source: Computed from field survey, 2023

3.1.2 Poverty Line of Maize – Cassava Farmers

For maize-cassava farmers, the relative poverty line was set at ₦41,137.75 for small-scale, ₦50,758.61 for medium-scale, and ₦92,504.41 for large-scale farms. The mean per capita income varied, with ₦61,706.62 for small-scale, ₦76,137.92 for medium-scale, and ₦138,756.6 for large-scale farms. In small-scale farms, 61% of respondents earned below the poverty line, while 39% exceeded it. Medium-scale farms saw 33% of farmers fall below the poverty line and 67% above it. In contrast, 11% of large-scale farmers earned below the poverty line, with 89% surpassing it. These results indicate that the majority of farmers were non-poor in both medium-scale and large-scale farms, while most small-scale farmers were classified as poor.

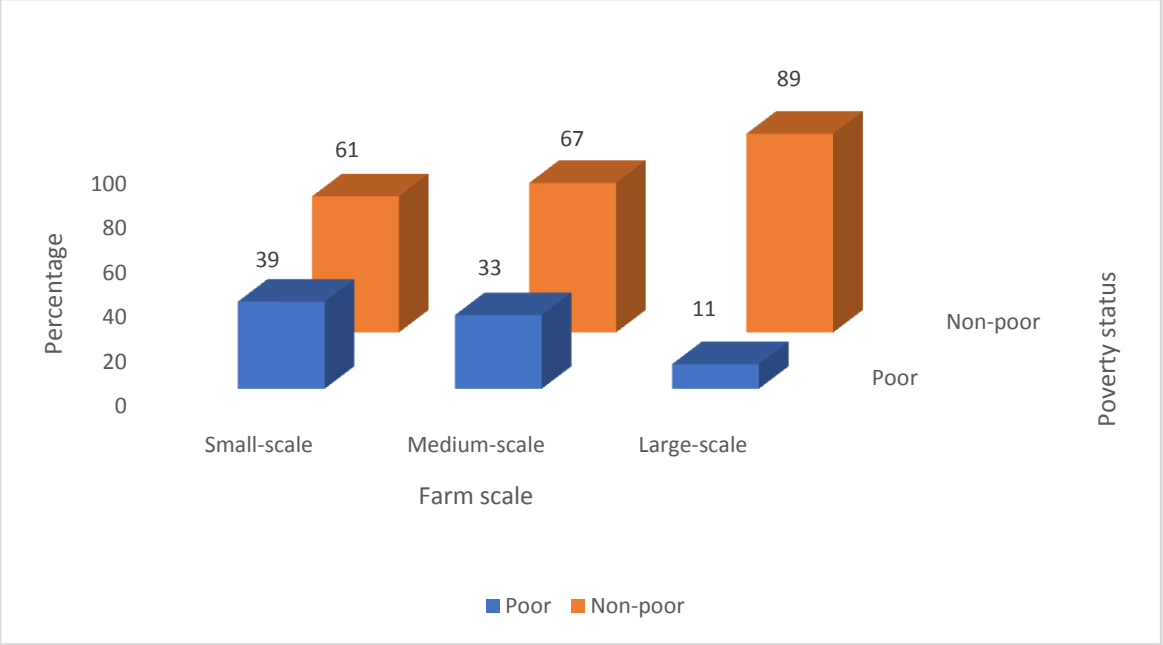

Figure 3: Poverty Status of Maize-Cassava Farmers

Source: Computed from field survey, 2023

3.1.3 Poverty Line of Maize–Yam Farmers

The mean per capita income for maize-yam farmers was ₦53,268.41 in small-scale farms and ₦81,634.35 in medium-scale farms. The corresponding poverty lines were ₦35,512.28 and ₦54,422.8 for small-scale and medium-scale farms, respectively. In small-scale farms, 27% of farmers earned below the poverty line, while 73% exceeded it. For medium-scale farms, 29% fell below the poverty line, with 71% above it. These findings indicate that the majority of farmers earned above the poverty line, suggesting that poverty was not prevalent among the sampled respondents.

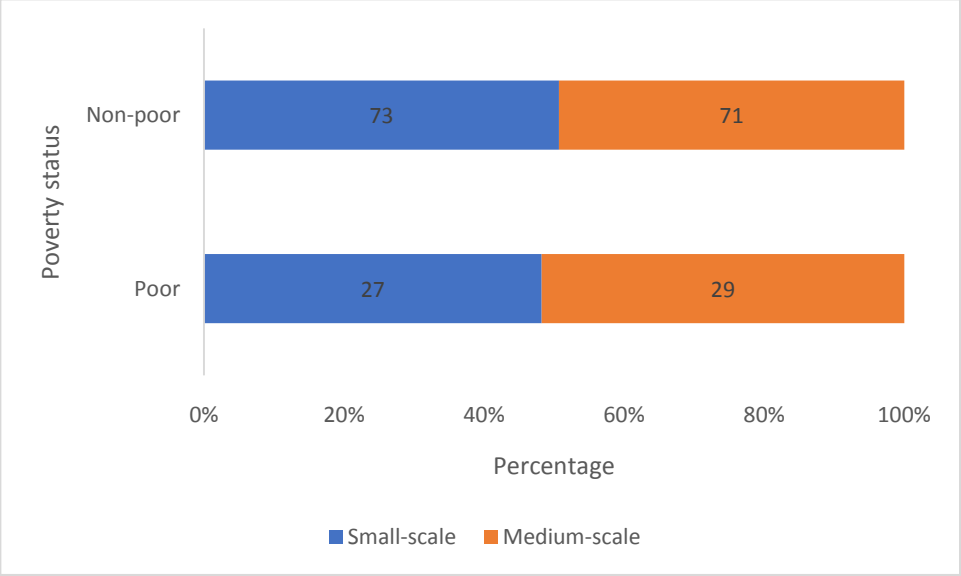

Figure 4: Poverty Status of Maize-Yam Farmers

Source: Computed from field survey, 2023

3.1.4: Poverty Line of Maize–Rice Farmers

For maize-rice farmers, the relative poverty line was set at ₦36,184.44 for small-scale, ₦46,609 for medium-scale, and ₦87,366.07 for large-scale farms. The mean per capita income was ₦54,276.27 for small-scale, ₦69,913.59 for medium-scale, and ₦131,049 for large-scale farms. In small-scale farms, 27% of respondents earned below the poverty line, while 73% exceeded it. Medium-scale farms saw 25% of farmers fall below the poverty line, with 75% above it. In contrast, 38% of large-scale farmers earned below the poverty line, while 62% surpassed it. These results suggest that the majority of farmers were non-poor in the maize-rice cropping pattern.

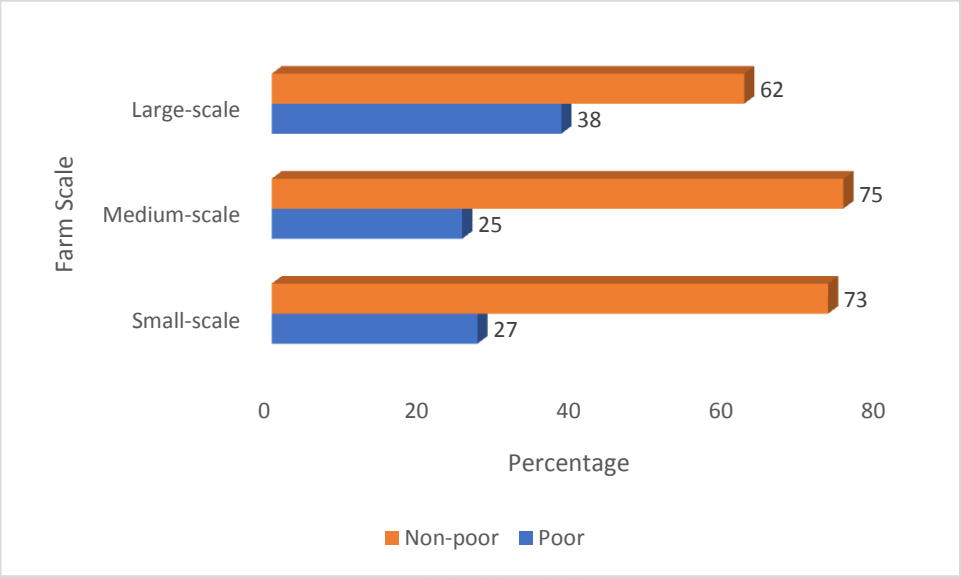

Figure 5: Poverty Status of Maize-Rice Farmers

Source: Computed from field survey, 2023

3.2 Results of Foster-Greer-Thorbeecke (FGT) Poverty Index Analysis

The results of the Foster-Greer-Thorbeecke (FGT)analysis revealed the incidence, depth, and severity of poverty among the sampled households. The result of the incidence of poverty among the sole maize respondents in the study area was 0.25, 0.55, and 0.17 for small-scale, medium-scale, and large-scale farms, respectively, indicating 25%, 55%, and 17% of the respondents were poor, that is, they fell below the poverty line in small-scale, medium-scale and large-scale, respectively. The depth of poverty was 0.41, 0.43, and 0.52 for small-scale farms, medium-scale farms, and large-scale farms, respectively, showing that the poor householdsneeded 41% for small-scale, 43% for medium-scale, and 52% for large-scale of the poverty line to get out of poverty. The severity of the poverty index was 0.16, 0.18, and 0.27 for small-scale, medium-scale, and large-scale respectively.Hence, poverty severity among the sole maize farming households was 16%, 18%, and 27% for small-scale, medium-scale, and large-scale farms, respectively.

For maize-cassava respondents, the poverty incidence was 0.61 for small-scale farms, 0.33 for medium-scale farms, and 0.11 for large-scale farms meaning that about 61% of the farmers were poor in small-scale farms, 33% for medium-scale farms, and 11% for large-

scale farms fell below the poverty line. The depth of poverty was 0.32, 0.21, and 0.09 for small-scale, medium-scale, and large-scale farms, respectivelyindicating that the poor maize-cassava households need 32%, 21 and 9% to move out of the poverty line in small-scale, medium-scale, and large-scale farms, respectively. The poverty severity was 0.10 for small-scale, 0.44 for medium-scale, and 0.008 for large-scale, indicating that poverty severity among sole-maize farming households was 10%, 44%, and 0.8% for small-scale, medium-scale, and large-scale farms, respectively.

For maize-yam farms, the incidence of poverty among sampled households was 0.27 and 0.29 for small-scale, and medium-scale farms, respectively, indicating 27% and 29% of the respondents were poor, that is, they fell below the poverty line. The depth of poverty was 0.32 and 0.72 for small-scale farms, and medium-scale farms, respectively, showing that the poor-constrained respondents need 32% and 72% of the poverty line to get out of poverty. The severity of poverty was 0.10 and 0.14 for small-scale, and medium-scale, respectively hence poverty severity among the sole-maize farming households was 10% and 14% for small-scale, and medium-scale farms, respectively.

For maize-rice farms, the poverty incidence was 0.27 for small-scale farms, 0.25 for medium-scale farms, and 0.38 for large-scale farms meaning that 27% of the farmers were poor in small-scale farms, 25% for medium-scale farms, and 38% of the farmers fell below the poverty line in large-scale farms. The depth of poverty was 0.31, 0.22, and 0.32 for small-scale, medium-scale, and large-scale, respectivelyindicating that the poor maize-cassava respondents need 31%, 22%, and 32% to move out of the poverty line in each category, respectively. The poverty severity was 0.096 for small-scale, 0.048 for medium-scale, and 0.102 for large-scale indicating that poverty severity among the sole-maize farming households was 9.6%, 4.8%, and 10.2% for each category farms, respectively.

Table 1: Incidence, Depth, and Severity of Poverty among Maize-Based Respondents

Cropping Pattern	Small Sale			Medium Scale			Large Scale		
	P_0	P_1	P_2	P_0	P_1	P_2	P_0	P_1	P_2
Sole Maize	0.25	0.41	0.16	0.55	0.43	0.18	0.17	0.52	0.27
Maize-Cassava	0.61	0.32	0.10	0.33	0.21	0.44	0.11	0.09	0.008
Maize Yam	0.27	0.32	0.10	0.29	0.72	0.144	-	-	-
Maize-Rice	0.27	0.31	0.096	0.25	0.22	0.048	0.38	0.32	0.102

Source: Computed from field survey, 2023

3.3Effects of Scale Economies on Poverty Status of Maize-Based Farmers in the Area

In an attempt to determine the effects of scale economies on the poverty status of the maize-based crop farmers, a probit regression model was adopted.As shown in Table 2, it was depicted that the value of R^2 was 0.780 and was strongly significant at 1% which indicated that 78% variation in dependent variable were accounted for by the explanatory variables. The coefficients of small-scale, medium-scale, and large-scale, age, gender, farming experience, marital status, educational status, farm size, access to credit, land acquisition, and source of labour are the main factors influencing poverty status in the area. In the sole maize cropping pattern, the coefficients of small-scale, medium-scale, and large-scale, age, farming experience, gender, and source of labour showed a positive relationship with poverty status.

This implies that a unit increase in the value of any of these variables will increase (decrease) the chance of not being poor. The coefficients of small-scale, medium-scale, and large-scaleare significant at 10%, 5%, and 1%, respectively. It means that being involved in medium-scale and large-scale sole-maize farms will cause an increase in the probability of the farmer not being poor by 93.7%, and 3.1%, respectively whereas when a farmer engages in small-scale increases the probability of being poor by 4.8%, *ceteris paribus*. The finding is in line with [27 – 29] who stated that the larger the farm size the wealthier the farmer to adopt technology to promote production. Years of farming experience has a strong marginal increase and is strongly significant at 1% which implies that an upward movement in the year of farming experience will cause an increase in the chance of not being poor by 1463.5%. According to [30], experienced farmers have the likelihood of being knowledgeable and well-informed on changes in crop and farm management practices. This is because the farming experience is one of the crucial factors that increases the chance of adopting adaptation measures and this will make experienced farmers live above the specified minimum standard of living. On the other hand, the coefficients of marital status had a positive but significant relationship with the farmers' poverty status. Statistically, married households increase the chance of being poor by 320%. This outcome is contrary to the findings of [31] among rural farming households in Ondo State in which married households increased the probability of non-poor.Also,the acquisition of land through lease increases the chances of being poor by 412.4%.

In the Maize-cassava cropping pattern, the value of R^2 was 0.523 and was significant at 5% which means that 52% variation in poverty status of the farmers is accounted for by the explanatory variables. The coefficients of large-scale, and gender had a negative and significant relationship with the poverty status. The coefficient of the large-scale farm is significant at 1%, meaning involved in the large-scale farm will increase the chances of the farmer not being poor by 21.4%. It was also depicted from the table that male household heads will increase the probability of not being poor by 205%.This might be because male has the power and energy to engage in farm management practices than female.

In the maize-rice cropping pattern, the value of R^2 was 0.538 and strongly significant at 1% which means that 53.8% variation in the poverty status of the farmers was accounted for by explanatory variables. The coefficient of large-scale farms is significant at1% and has a negative relationship with the poverty status of the farmer. The coefficients of marital status and access to credit werenegative and statistically significant at 1% and 5%, respectively while coefficients of age and marital status were positive. The married household increases the probability of being poor by 38%. Similarly, access to credit facilities increases the chances of not being poor by 221.6%. In contrary to this, the coefficients of agehad a significant but positive association with the poverty status of the farmer, in other words increase in any of these variables increases the chances of the farmers being poor.

In the maize-yam cropping pattern, the value of R^2 was 0.907 and was significant at 1% which means that 90.7% variation in the poverty level of the farmers was accounted for by explanatory variables. The coefficients of large-scale, marital status, access to credit, and land acquisition had relationships with the poverty status of the farmers. The large-scale and medium-scale farms are significant at 1% and 5%, respectively and both will increase the chances of not being poor by 46.8% and 18.2%, respectively. A male household head increases the chances of not being poor by 616.5%, a married household increases the

chances of not being poor by 41.9%, an increase in years of education increases the chances of not being poor by 45.7%, and an increase in years of farming experience increases the chances of not been poor by 4.4%. Likewise, an increase in farm size increases the chances of not being poor by 205.7%, access to credit facilities increases the chances of not being poor by 169.1%, and acquisition of land through inheritance increases the chances of not been poor by 303.8%.

Table 2:Estimation of Factors Affecting Poverty Status of Maize-Based Farmers in the Study Area

Variables	Cropping Pattern							
	Sole Maize		Maize-Cassava		Maize-Rice		Maize-Yam	
	Coefficients	P Value	Coefficients	P Value	Coefficients	P Value	Coefficients	P Value
Large-scale	-0.937***	0.000	-0.214***	0.001	-0.151***	0.000	-0.468***	0.000
Medium-scale	-0.031**	0.012	-0.021	0.763	-0.382***	0.000	-0.182**	0.029
Small-scale	0.048*	0.080	0.019	0.487	0.050	1.519	0.003	0.244
Age	0.286	0.175	-0.103	0.75	2.041**	0.012	-0.036	0.734
Gender	0.667	0.713	2.054**	0.013	-32.751***	0.000	6.165***	0.000
Marital status	3.200***	0.004	-0.247	0.864	15.591***	0.009	0.419	0.829
Educational Status	-0.630	0.312	0.154	0.108	-97.827***	0.008	0.457	0.101
Farming experience	-14.635***	0.000	-0.001	0.982	1.550	0.999	0.044	0.537
Access to Credit	-1.232	0.566	0.456	0.755	-2.216**	0.030	-1.691*	0.088
Land acquisition	-4.124***	0.002	-0.206	0.686	19.721	0.999	3.038***	0.000
Labour source	0.169	0.884	0.417	0.521	34.725	1.000	-1.506	0.488
Cox&Smell R^2	0.584		0.384		0.369		0.623	
-2Log Likelihood	19.732[a]		42.676[a]		2.773[a]		20.967[a]	
Nagelkerke R^2	0.780***		0.523**		0.538***		0.907***	

Note: *,**,* indicated significant levels at 1%, 5% and 10% respectively. Dependent variable (poor = 1 and Non poor = 0)**

Source: Field Survey, 2023

3.4 Hypothesis Testing between Scale Economies and Poverty Status of the Farmers

The result showed that in small-scale farms, the alternate hypothesis was rejected in favour of the null hypothesis while in both medium-scale and large-scale farms the null hypothesis was rejected in favour of alternate hypotheses. This is because farm size to some extent determines the income of a farmer, income generated from small farm size cannot be compared with income generated from medium and large farm size. Furthermore, farmers are able to diversify and cultivate more expanse of land in large-scale farms than in small-scale farms. This will invariably lead to agricultural commercialization and an increase in food security and their level of income. This result agrees with [32] which states that smallholders' ability to expand the scale of their activities could contribute substantially to growth in farm productivity, agricultural commercialization, and increase in food security in Nigeria.

Table 3: Relationship between Scale Economy and Poverty Status of the Farmers

Poverty Status	**Sole Maize**			**Maize-Cassava**			**Maize-Yam**			**Maize-Rice**		
	t	Df	sig	T	df	Sig	T	df	sig	t	df	Sig
Small Scale	1.279*	65	0.053	2.039*	106	0.192	3.269*	35	0.503	2.978*	18	0.001
Medium Scale	4.404*	65	0.0264	4.115*	106	0.000	2.215*	35	0.044	4.201*	18	0.016
Large Scale	49.702*	65	0.011	24.848*	106	0.005	6.085*	35	0.000	0.760*	18	0.016

Source: Computed from field survey, 2023

Conclusion and Recommendations

In conclusion, our study sheds light on the intricate relationship between scale economies and the poverty status of maize-based crop farmers. It becomes evident that farm scale, alongside various socio-economic factors, significantly influences poverty status in the agricultural landscape. While this study focused on four different cropping patterns, key takeaways can be generalized to various agricultural settings.The results highlight the potential of medium and large-scale farming operations in reducing poverty due to their capacity for higher income generation. Moreover, years of farming experience, access to credit, and larger farm sizes emerge as crucial factors in alleviating poverty among farmers. However, it is essential to recognize that the impact of certain variables, such as marital status and land acquisition, can vary regionally and contextually. Lastly, addressing poverty in agriculture is a complex task that requires a multi-faceted approach. By recognizing the role of farm scale and the various socio-economic factors at play, stakeholders can develop more effective strategies to improve the livelihoods of maize-based crop farmers and promote sustainable agricultural development.Based on these findings, we offer the following recommendations:

1. Encourage and support farmers in transitioning to medium and large-scale farming operations as this has a significant impact in alleviating poverty. This can be achieved through targeted investment, access to credit, and agricultural extension services.

2. Facilitate easier access to credit facilities for farmers, particularly smallholders, to enable them to expand their farming activities, invest in technology, and increase productivity. This will invariably increase farmer's income vis-à-vis alleviate poverty in the area.

3. Provide farmers with opportunities for education and training in modern farming techniques and management practices. This can empower them to make more informed decisions that would boost farmer's income, thereby alleviating poverty in the area.

4. Recognizing the gender disparities in farming and implementing policies that empower women farmers through training, access to resources, and financial support will go a long way in addressing poverty-related problems.

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