



## *Original Research Article*

# **Comparative Assessment of Rural Women Farmers' Poverty Status in Suleja and Gurara Local Government Areas of Niger State, Nigeria**

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## **Abstract**

Poverty is pervasive in rural areas of Niger State. Women living in rural households are more vulnerable to poverty than men. Thus, this study seeks to assess rural women farmers' poverty status in Suleja and Gurara local government areas (LGAs) of Niger state, Nigeria. Interview schedules complimented with a questionnaire were used to obtain information from a total of 142 respondents. Data were analysed using descriptive statistics, Foster-Greer-Thorbecke (FGT) and Probit regression models. The results revealed that majority of the women were married (70.0%) and (78.5%) at mean ages of 38 and 40 years respectively. The result also showed that 85.7% and 93.7% of the women farmers identified processing of farm produce as their major source of farm income in Suleja and Gurara LGAs respectively. FGT analysis showed that 41% and 24%, of women in Suleja and Gurara LGAs of the State were poor at a Poverty line of ₦19,102.29 and ₦19,931.08 per month, respectively. The Probit regression results revealed that age, marital status, level of education, farming experience, number of extension visits, farm income and access to credit were the major factors influencing poverty among the rural women of Suleja and Gurara LGAs of Niger State. The study concluded that there was a higher level of poverty among the rural women farmers of Gurara compared to Suleja LGA, hence efforts should be made to diversify the livelihood portfolios of rural women in the study areas to enhance sustainability through the various women empowerment programs, extension services and credit facilities.

**Keywords:** Poverty, rural households, rural women, poverty line

## **Introduction**

Poverty, which remains a topic of despair, is a stark reality in this world. Poverty has remained a threat and a challenge to humanity in all ramifications; it is complex, multidimensional and multifaceted with manifestations in the economic, social, political, environmental and, indeed,

every realm of human existence (Abdullahi *et al.*, 2015). The conceptualization of poverty over the years is changing, with emerging perspectives in different contexts. Poverty is the concept of social exclusion as an emerging phenomenon in both developed and developing countries (Adesanoye and Okunmadewa, 2007).

The Human Development Report of the United Nation Development Programme (UNDP, 2005) indicated that Nigeria was rated as one of the most financially constrained countries in the world, with a poverty index of 38.8%. The country also ranked 75<sup>th</sup> of 103 developing countries in the world (Ahmed *et al.*, 2018). Equally, the poverty rate in Nigeria is on the increase and had hit its highest point of 72% in 2016 (NBS, 2016). Past research reports have asserted that women are at the centre of poverty (Babatunde and Qaim, 2009; Balogun, 2011) and that it is more difficult, if not impossible, for a woman to get a loan from a financial institution where her male counterpart can easily get the same support. Thus, this explains the unsettling global trend with regards to the feminization of poverty.

Women are traditionally considered poorer than men when the criterion used to measure people's poverty is their level of well-being or status (Etim, 2007). In developing countries such as Nigeria, this situation is even worse.

Agriculture can be an important growth engine for poverty eradication (FAO, 2010). However, in many countries this sector does not function efficiently. In part, this is because women, often the most important resource in agriculture and rural economies, face constraints that reduce productivity (Busari *et al.*, 2019). According to FAO (2010), women make up about 43% of the agricultural workforce globally and in developing countries. Literature have shown that estimates of women's contribution to agricultural activity in Africa are as high as 60-80% in some countries (FAO, 2010; Abdullahi *et al.*, 2015). In general, rural women's labour burden exceeds that of men, and the proportion of unpaid housework related to cooking, fuel and water collection is higher (Mukaiila *et al.*, 2016). This makes them most vulnerable in the region.

Although there have been several studies (Ojimba, 2012; Oyedepo, 2016), that seek to analyze rural women's poverty status in Nigeria, very few studies exist regarding their poverty status in Suleja and Gurara local government areas of Niger state, Nigeria. To this end, the specific objectives of this study were:

- i. to examine the socio-economic characteristic of the respondents in the study areas;
- ii. ascertain the income-generating activities of the rural women in the study areas;
- iii. determine the poverty status of rural women in the study areas; and
- iv. analyze the determinants of poverty status among rural women in the study areas.

## **Methodology**

This study was conducted in Suleja and Gurara Local Government Areas of Niger State. Niger state is in the North-central part of Nigeria, and lies ~~in~~ between longitudes 3<sup>o</sup> 30<sup>1</sup> and 7<sup>o</sup> 20<sup>1</sup> East of the Greenwich Meridian and latitudes 8<sup>o</sup> 20<sup>1</sup> and 11<sup>o</sup> 30<sup>1</sup> North of the equator (NBS, 2016). The total population of Niger State was projected to be 5,556,200 by the year 2016 at the annual population growth rate of 2.5 percentage (NBS, 2016). In order to obtain a sample frame for this

study, a list of registered women farmers was obtained from Niger State Agricultural Development Project (ADP) and using a multi-stage sampling technique and Yamanne’s formula for appropriate sample size selection, 142 rural women were selected. Data were collected using an unstructured questionnaire, and analyzed using descriptive statistics, Foster, Greer and Thorbecke (FGT) and Probit models.

**Model Specification**

**(i) Foster, Greer and Thorbecke (FGT) model**

The Foster-Greer-Thorbecke (FGT) model was used to achieve objective iii. The index allows us to measure the proportion of the poor in a population (the headcount ratio). Furthermore, it provides a measure of the depth of poverty (poverty gap), which provides information regarding how far rural women are from the poverty line, as well as a measure of the severity of poverty (squared poverty gap), which takes into account not only the distance separating the poor from the poverty line, but also the inequality among the poor.

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

Where,  $P_{\alpha}$  = Foster, Greer and Thorbecke index ( $0 \leq P_{\alpha} \leq 1$ ),  $N$  = total number of sampled rural women in the study area,  $Z$  = poverty per capita expenditure of the  $i^{th}$  household,  $\alpha$  = FGT parameter ( $\mu \geq 0$ ) = poverty aversion parameter,  $i$  = No. of rural female farmers,  $y_i$  = income for the  $i^{th}$  rural female farmer.

**Construction of the Poverty Line**

Basically, there is no official poverty line in Nigeria, and as such, many earlier studies have used poverty lines which are proportions of the average per capita expenditure. However, in this study, per capita expenditure which was considered more appropriate in past studies because it is consistent and does not change over a period of time when compared to income, was adopted. Therefore, the poverty line was defined as two-thirds (2/3) of the mean value per capita consumption expenditure in the study areas. The farm households were categorized into poor and non-poor groups using the two-thirds of the mean per capita expenditure (Olorunsanya and Omotesho, 2011) as the benchmark. Households whose mean consumption expenditure fell below the poverty line were regarded as being poor while those with their expenditure above the benchmark were non-poor.

$$PCE = TCE / HHS \dots \dots \dots (2)$$

$$MPCHE = THHE / TNR \dots \dots \dots (3)$$

$$PL = 2/3 * MPCHE \dots \dots \dots (4)$$

Where;

PCE = Per Capita Expenditure, TCE = Total Consumption Expenditure, HHS = Household Size, MPCHE = Mean Per Capita Household Expenditure, TNR = Total Number of Respondents, THHE = Total Households Expenditure, and PL = Poverty Line.

## (ii) Probit regression

The Probit regression model was used to achieve objective iv, which is to analyze the determinants of poverty status among rural women in the study areas.

The model was expressed as follows;

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + \dots + b_{11}X_{11} + U$$

Y = poverty status of rural women for the Probit model; Xs are the explanatory variables.

The explanatory variables that were used to determine the poverty status of the rural women were:

X<sub>1</sub> = Age of household head (years), X<sub>2</sub> = Gender (male or female), X<sub>3</sub> = Level of education (years), X<sub>4</sub> = Household size (number of people), X<sub>5</sub> = Monthly income (Nigerian naira), X<sub>6</sub> = Land ownership (1 = self-owned, 0 = otherwise), X<sub>7</sub> = Size of farmland (hectares), X<sub>8</sub> = Extension services (numbers of visit), X<sub>9</sub> = Farming experience (years), X<sub>10</sub> = Level of awareness (yes = 1, otherwise = 0), X<sub>11</sub> = Farming System (specify).

## Results and Discussion

### *Socio-economic characteristics of rural women*

The result in the Table 1 shows that majority (61.9%) and close to half (49.4%) of the respondents in Suleja and Gurara were within the age range of 40 years and below with an average age of 38 and 40 years respectively. This implies that, the respondents were in their productive ages to participate on various farming and other related activities. The finding agrees with the result of Ojimba (2012)) which revealed that people in this age grade are often productive, economically active and innovative in agricultural production.

Equally, majority (70.0%) and (78.5%) of the sample of rural women in Suleja and Gurara were married, and had mean household sizes of 7 and 6 people respectively. The predominance of married people in the study areas may be attributed to the prevalence of early marriages or the ideals of the customs and traditions that are held in high esteem. This is in line with the work of Olawepo (2010) that early marriages and large household size in Nigeria might be as a result of some cultural practices which support early marriages.

Furthermore, the result in Table 1 revealed that majority (85.7% and 86.1%) of the respondents in Suleja and Gurara respectively earned ₦200,000 and below as farm income while majority (82.5% and 78.4%) of the respondents in Suleja and Gurara respectively earned ₦400,000 and below from their non-farm income.

Their mean total annual incomes were ₦264,651 and ₦287,240 respectively. This result also agrees with the result of Ahmed *et al.* (2018) who reported that most rural people are financially constrained, thus affecting agricultural livelihood.

**Table 1:** Socioeconomic characteristics of the rural women

Variables	Suleja			Gurara		
	Frequency	Percentage	Mean	Frequency	percentage	Mean
<b>Age (years)</b>						
Below 31 years	26	41.3	38	26	32.9	40
31-40 years	13	20.6		19	16.5	
41-50 years	8	12.7		19	24.1	
Above 50 years	16	25.4		21	26.6	
<b>Marital status</b>						
Single	4	6.3		5	6.3	
Married	46	73.0		62	78.5	
Divorce	1	1.6		1	1.3	
Widow	12	19.0		11	13.9	
<b>Household size</b>						
1-5 people	33	52.4	7	38	48.1	6
6-10 people	20	31.7		38	48.1	
Above 10 people	10	15.9		3	3.8	
<b>Farm income</b>						
200,000-below	54	85.7	79190.48	68	86.1	71518.99
200,001-400,000	6	9.5		9	11.4	
Above 400,000	3	4.8		2	2.5	
<b>Off-farm income</b>						
200,000-below	31	49.2		31	39.2	
200,001-400,000	21	33.3		31	39.2	
Above 400,000	11	17.5		17	21.5	
<b>Total income</b>						
200,000-below	22	34.9	264650.79	17	21.5	287240.51
200,001-400,000	20	31.7		33	41.8	
Above 400,000	21	33.3		29	36.7	

Source: Field Survey, 2021

### ***Income-generating activities of the rural women***

The results in Table 2 shows the various income-generating activities performed by the women in supporting their household food security. Majority (85.7% and 93.7%) of the women in Suleja and Gurara respectively identified *processing of farm produce* as their major source of farm income, while 96.8% and 98.7% of them identified *trading* as their major source of non-farm income.

**Table 2:** Income generating activities of the rural women

Activities	Suleja		Gurara	
	Frequency	Percentage	Frequency	Percentage
<b>Farming</b>				
Processing farm produce				
No	9	14.3	5	6.3
Yes	54	85.7	74	93.7
Rearing of livestock				
No	50	79.4	60	75.9
Yes	13	20.6	19	24.1
<b>Non farming</b>				
Trading				
No	2	3.2	1	1.3
Yes	61	96.8	78	98.7
Civil service				
No	54	85.7	58	73.4
Yes	9	14.3	21	26.6
Handcraft				
Henna design				
No	54	84.7	76	96.2
Yes	9	14.3	3	3.8
Knitting				
No	53	84.9	62	78.5
Yes	10	15.1	17	21.5
Plaiting of hair				
No	52	82.5	69	87.3
Yes	11	17.5	10	12.7

Source: Field Survey, 2021

These results conform with the findings of Food and Agricultural Organization (2010) who reported that women play significant roles in sourcing additional income to complement household food security (Onyebu, 2016).

### ***Poverty status of the rural women***

The result in Table 3 gives a clear presentation of the estimation of the poverty line that was used to determine the poverty status of the rural women in the study areas. The value of poverty line was ₦19,102.29 for rural women in Suleja and ₦19,931.08 for women in Gurara. This result implies that any household with monthly expenditure below these values is classified as poor, while those with monthly expenditure above this values are classified as non-poor. Therefore, the table reveals that most (58.7% and 76.0%) of the rural women in Suleja and Gurara respectively were non-poor. Furthermore, with regards to poverty incidence (head count), the index shows the proportion of the rural women that were poor. Results in Table 3 indicated that the poverty incidence (head count) was 0.41 in Suleja and 0.24 in Gurara. This result implies that 41% and 24% of the rural women area were below the poverty line.

**Table 3:** Poverty status of the rural women in Suleja and Gurara

Variable	Suleja		Gurara	
	Frequency	Percentage	Frequency	Percentage
Poor	26	41.3	19	24.1
Non-poor	37	58.7	60	76.0
Total	63	100.0	79	100.0
Poverty line / month	₦19,102.29		₦19,931.08	
Poverty incidence	0.4127		0.2405	
Poverty gap ratio	0.5181		0.5004	
Poverty severity	0.0934		0.07170	

Source: Field Survey, 2021

The poverty gap measures the extent or depth of poverty. It measures how far the poor are below the poverty line. The poverty gap index for this study were 0.52 in Suleja and 0.50 in Gurara. This shows that, on average, every poor rural woman was ₦0.52 and ₦0.50 below the poverty line for the two locations respectively. The product of this index and poverty line determines how much is needed to escape poverty. For this study, it was  $₦0.52 * ₦19,102.29 = ₦9,933.2$  for Suleja and  $₦0.50 * ₦19,931.08 = ₦9,965.5$  for Gurara. This imply that every poor rural woman in the study area needed ₦9,933.2 and ₦9,965.5 in Suleja and Gurara respectively to escape poverty.

The poverty severity index measures the severity of poverty among the poor. It shows the poorer of the poor. The poverty severity indices for this study as shown in Table 3 were 0.934 and 0.0717 for Suleja and Gurara respectively. This result implies that each very poor rural woman was ₦0.934 and ₦0.0717 poorer than the poor rural woman above her in Suleja and Gurara respectively. This outcome corroborate with the findings of Olorunsanya and Omotesho (2011).

### ***Determinants of poverty status amongst rural women***

The Tobit Regression model was used to analyse the determinants of poverty status among rural women in the study areas. Age, marital status, level of education, farming experience, extension visit, farm income and access to credit were the only significant variables out of all the independent variables. The pseudo R<sup>2</sup> was 0.3635 for Suleja and 0.4654 for Gurara, thus implying that 36.35% and 46.54% of the variations in the model were explained by the stated explanatory variables.

Age of the rural women was found to be negatively significant at 1% in Gurara, which implies that the higher their age, the lower their poverty status and vice versa. This is nonetheless contrary to *a-priori* expectations. However, the average age of the respondents showed that they were in their economic active ages hence, the ability of the respondents to work in order to earn income which could be used to meet their basic needs. This result is in line with the findings of Busari *et al.* (2019), who stated that as women grow older, their poverty status decreases as a result of their ability to diversify and manage their household income and expenditure better than younger women.

The result further showed that, the coefficient of *Marital status* was negatively significant at 10% level in Gurara, which implies that married women tended to gain the support of their husbands with respect to the provision of food and other house hold items, unlike single women. This result

disagrees with the findings of Busari *et al.* (2019), who stated that unmarried women have less mouth to feed thus are free from such responsibilities accrued to family upkeep.

The coefficient of educational status was positive and significant at 1% and 10% levels in Suleja and Gurara respectively. These imply that rural women with lower levels of formal education were poorer than women with higher levels of formal education. This is affirmed by Abdullahi *et al.* (2015) who stated that an educated rural woman tends to respond to training and innovations that will improve their farm income and reduce their poverty level.

**Table 4.4:** Probit regression on determinant of poverty status among rural women

Variable	Suleja		Gurara	
	Coefficient	Z- value	Coefficient	Z-value
Age	-0.0014589	-0.92	-0.0048027	-2.65***
Gender	0.0268425	1.26	0.025598	0.12
Marital status	0.00418	0.28	-0.0222208	-1.93*
Level of education	0.2534662	3.91***	0.0067197	1.84*
Land ownership	-0.011771	-0.57	0.0015791	0.08
Farm size	0.0038326	1.10	-0.0017691	-0.46
Farming experience	0.0438907	3.24***	-0.0014715	-0.52
Household size	0.0142809	0.66	0.005903	0.92
Extension visit	0.0254634	2.43**	0.0099434	0.99
Cooperative membership	0.001424	0.48	0.0042888	1.23
Farm income	2.21e-08	0.80	2.37e-07	2.55**
Access to credit	0.0017321	3.21***	4.34e-07	3.29***
Constant	4.747758	2.86***	0.5894039	7.27***
No. of observations	63		79	
LR chi <sup>2</sup> (12)	40.80		53.02	
Prob >chi <sup>2</sup>	0.0001***		0.0000***	
Pseudo R <sup>2</sup>	0.3635		0.4654	

Note: \*, \*\*, and \*\*\* = significant at 10%, 5% and 1% respectively

Source: Field Survey, 2021

Farming experience was positively significant in Suleja, implying that rural woman with low farming experience tended to be poorer than the more experienced ones, and vice versa. This agrees with the findings of Oluwatayo (2009) who noted that women who have been farming for long are likely to have in store a vast wealth of knowledge about farming to the extent that they are more food-secured than those who have lesser experience in farming.

Access to extension visits was positively significant at 5% in Suleja, meaning that those who had access to extension agents have higher knowledge of farming practice and new innovations used in diversifying their farming, thereby increasing their income or livelihood status. This corroborates with the findings of Busari *et al.* (2019), who stated that extension agents provide information to the farmers and brings about new innovation or technologies to the farmers.

Farm income was positively significant at 5% in Gurara, while access to credit was positively significant at 1% in Suleja and Gurara. Access to credit provides loans or grant to farmers in order to diversify their farming activities thus increasing their farm income and reducing poverty. This



result corroborates the findings of Babatunde and Qaim (2009) who reported that access to credit has a positive influence on income diversification.

## **Conclusion and Recommendation**

From the findings, majority of rural women were in their active ages which enabled them to engage in various income-generating activities. The rural women in the study areas were also slightly above the poverty line as a result of factors such as age, marital status, level of education, farming experience, extension visits, farm income and access to credit which were the significant determinants of poverty status among rural women in the study areas. Sequel to these findings, this study recommends that rural development stakeholders should empower rural women farmers with additional credit, education, training and extension services.

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