GENDER DIMENSION OF POVERTY AMONG RICE FARMERS IN KOGI STATE, NIGERIA

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ABSTRACT

This study analyzed the gender dimension of poverty among rice farmers in Lokoja Local Government area of Kogi State, Nigeria. It had specific objectives of describing the socioeconomic characteristics of farming households, examined input access among the respondents, assessed gender dimension of poverty in the study area and examined the determinants of poverty among the respondents. Primary data was used in this study. The data was collected through structured questionnaire. 120 farmers were selected with multistage random sampling techniques. Analysis of data was carried out using simple descriptive statistics, Foster Greer and Thorbecke poverty model (FGT) and Logit regression analytical tools. The result of the study revealed that 90% of the respondents are in their middle age, 61.67% of the respondents are male while 38.33% are female. Majority (68.92% of male and 76.09% of females) were smallholders' farmer with farm size of between less than one and two hectares. Also male farmer had access to major farm inputs like credit, agrochemicals, improved variety, etc than their female counterparts. The result also shows the poverty status of male headed and female headed rice farming households in the study area; among the male, 43.2% were income poor while 56.8% are non-income poor. Among the female category 58.7 % were income poor while 41.3% are non-poor. And the major determinants of poverty among the male rice farmers in the study area are the years of farming experience and farm size. And the major determinant of poverty among the female rice farmers in the study area was farm size. Based on the finding of this study the following recommendation was made. Rice farmers should be encouraged to increase production and income by creating a more innovative ways of using improve varieties and other production resources with their available farm land as this will reduce their poverty level. Also that government, individuals/NGOs should not be bias but rather ensure appropriate distributions and access to farm inputs among male and female rice farmers in the study area to help them improve their rice production and reduce their poverty level.

Keywords: Gender, Poverty, Rice Production, Farm Size

INTRODUCTION

Across sub-Sahara Africa agriculture is considered to be a major answer to the issue of extreme poverty among both male and female gender. To achieve this, gender inequality that inhibits the productivity of female farmers must be addressed. There are 450 million women and men working as agricultural laborers worldwide who do not own or rent the land on which they do work nor the tools and equipment they use. These workers comprise over 40% of the world's agricultural labor force often living below the poverty line and forming part of the majority of the rural population in many parts of the world (FAOILO-IUF 2005). The role by men and women in agriculture varies according to the structure, needs, customs, and attitudes of the societies in which they live (Adebija, 2009).

Gender analysis focuses on the different role and responsibilities of women and men and how these affect society, culture, the economy and politics. For example, there is an important difference between women and men in their quality of life, in the amount, kind and recognition of work, health, literacy levels and in their economic, political and social standing. According to Spieldoch (2007), women comprise the majority of the world's population in both the urban and rural sectors and the majority of those working in the informal sector. According to the United Nations (2006), women are responsible for over half of the world's rice production. In developing countries, rural women produce between 60-80% of the rice. The Food and Agricultural Organization (FAO) indicates that women produce as much as 80% of the basic foodstuffs for household consumption and sale in Nigeria. These agricultural activities employs both gender with women playing vital roles in food production, processing and marketing in Nigeria; producing about 60-80 percent of total output (Rahman,2004) and contributing about 60-80 percent of agricultural labor force (Mgbada,2000).They also contribute more than two-thirds of their produce towards household subsistence (Ayoola, 1999; Rahman, 2004).

Poverty deals with the welfare of individuals. Poverty is a reflection of economic development and at a time when Nigeria is experiencing bad economy it is essential to discuss the concept of poverty. In Nigeria today, most people subsist on a mere ₦306 (slightly more than $1) a day (World Bank, 2019). A large proportion of Nigerians lack adequate health care, shelter and remunerative jobs. According to Nigeria Poverty Profile (NPP) in 2010 released by NBS (2012), food poverty in Kogi State was 50.1%, absolute poverty 67.1%, dollar per day 67.3% and per capita expenditure was 73.5%. While based on derived subjective poverty measure, 58.7% were core poor, 38.0 moderate poor, and 3.3% non-poor.

Nigerian women are the most affected being marginalized in decision-making process, employment, economic opportunities and access to credit. Most of them suffer from illiteracy, high maternal mortality; low income and poverty (CBN/World Bank, 2019).

Rice is a major crop for poverty reduction: a staple food which many families cannot do without in Nigeria today. Rice has become a strategic commodity in the Nigeria economy. Since the mid-1970s, rice consumption in Nigeria has risen tremendously, at about 10% per annum. According to Akande (2003), increasing population growth, increase income level, changing consumer preference and associated change in family occupational structures as factors responsible for the growing of rice. However, the cultivation of rice is not a practice confined to a sex category. Fakoya *et al*. (2010) reported that poor rural women play important roles in rice based farming systems as unpaid family workers, hired laborers, income earners and major caretakers of family health and nutrition, the role which has been overshadowed by gender insensitivity by policy makers (Kandiwa, 2013).

Poverty analysis and studies in Nigeria reveals that men, women, boys and girls experience poverty in similar yet different ways (Ajani, 2008). A gender perspective of poverty needs to be assessed since previous efforts at measuring poverty in Kogi State have always focused on assessment of poverty alleviation programs, multidimensional study of poverty among others. For instance, in agriculture as a strategy pathway towards sustainable and effective rice production implementation program in Kogi State, Nigeria. Previous efforts at measuring poverty in Kogi State have always focused on assessment of poverty alleviation programs, multidimensional study of poverty among others. Measurement of poverty in Kogi State has rarely focused on the gender dimension indicators as the objective of policy programme. For example of previous efforts in analyzing poverty in Kogi State include, Adebayo (2013), Salifu (2010), Omonona and Okunmadewa (2009) and Mohammed and Awoyemi (2017). It is against this background that this study seeks to examine gender dimension of poverty in the study area. The specific objectives of this study are to:

i. describe the socio-economic characteristics of the rice farmers in the study area;
ii. identify if rice farmers have access to the same kind of inputs
iii. examine the gender dimension of poverty status of rice farmers in the study area; and
iv. identify determinants of poverty among the respondents in the study area.

METHODOLOGY

This study was carried out in Lokoja Local Government Area of Kogi state, Nigeria. It lies at the confluence of the Niger and Benue rivers and is the capital of Kogi State. It is a confluence town and is contiguous to a lot of water bodies and wetland areas. The rainy season lasts from April to October. The dry season, which lasts from November to March, is very dusty of cold as a result of the northeasterly winds, which brings in the harmattan. The main vegetation type in Lokoja is Guinea savannah or parkland savannah belt with tall grasses and some trees. These are green in the rainy season with fresh leaves and tall grasses, but the land is open during the dry season, showing charred trees and the remains of burnt grasses. Lokoja has a population of about 77,516 in 1991which has increased to 195,261 in 2006, with 100,573 males and 94,688 female (National Population Commission, 2006). Agriculture serves as the main occupation of the people. Wetland areas have great advantages for farmers because they provide opportunities for planting different crops such as, rice, sugar cane, corn, vegetables, among others throughout the year. There are 10 wards in Lokoja local government area of Kogi State, they include: Eggan, Kakanda, Kupa north east, Kupa south west, Lokoja A, Lokoja B, Lokoja C, Lokoja D, Lokoja E, Oworo.

In carrying out this study, primary data was used. The data were obtained from a field survey through the use of questionnaires. The target population is the male and female rice farmers. A Multistage sampling technique was used in the selection of the respondents. First stage includes the purposive selection of five wards which was randomly selected from the 10 wards in Lokoja Local government Area that are known for rice production. Secondly, two communities were selected from the five wards and then 12 respondents were also randomly selected from each of the communities. A total of 120 respondents were selected for this study.

Simple frequency tables and percentages were used to analyze the socio-economic characteristics and identify if rice farmers have the same access to the same kind of inputs.

Foster, Greer and Thorbecke (1984) poverty measure (Income approach) was used to determine the gender dimension of poverty status of rice farmers as used by Abur (2014). The Headcount Ratio is expressed as:

$H = Q/N$

Where, H = Headcount ratio with values ranging from O to 1. The closer the value to 1, means the higher the proportion of people below the poverty line. Q = Number of households below the poverty line. N = Total number of household in the studied population. The poverty gap is measured as follows:

$$P_\alpha = 1/n \Sigma \frac{(Z - Y)}{Z}$$

Where, P_α = Poverty gap, Z = Poverty line, Yi = Income of the i th household in poor population, α = The FGT parameter with values from 0, 1, and 2. n = Total numbers of population studied, α represent less than or equal to 1 for each. That is $\alpha \geq 0$. If $\alpha = 0$, then Po is simply the Headcount Ratio which is also called incidence of poverty and if $\alpha = 1$, P1 is renormalization of the income – gap measure which is also refer to as poverty gap. Finally, the sensitive measure P2 is obtained by setting $\alpha = 2$ and is called severity of poverty. Finally, the research arguments Gini coefficient to measure income distribution among the population; The Gini coefficient can be calculated using the method below:

$$G = \frac{N + 1}{N - 1} - \frac{2}{N(N-1)u} (\Sigma_{i-1} P_i X_i)$$

Where u is the mean income of the population, P_i is the income rank of P of individual i, with income X, such that the richest individual receives a rank of 1 and the poorest a rank of N, this effectively gives higher weight to poorer people in the income distribution, which allows the Gini to meet the transfer formula.

Logit Regression Model was used to identify determinants of poverty among the respondents. The respondents were classified into poor and non-poor using the poverty line. The relative poverty line of 2/3 of mean per capita income was used. Farmers that have per capital income below the poverty line were classified as poor and non-poor otherwise. The response variable was binary taking values of one if the farmer is poor and zero otherwise.

The general logit regression model is mathematically expressed as

$$Logit\left(\frac{p}{1-p}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots\ldots\ldots \beta_n X_n + e$$

Where;

P= probability that a farmer will fall below the poverty line or not given as Y; (0 = Non-poor; 1 = poor)

X_1= education level (number of years spent in school)
X_2= farming experience (years)
X_3= farm size (hectares)
X_4= household size
X_5= access to credit
α = constant
β_1- β_5 = regression coefficients
e= error term

Results and Discussion

Socio-economic Characteristics of the Respondents

The distribution of respondents according to age as presented in Table 1 shows a mean age 46 years which implies that most farmers involved in rice production were in their active age. According to Sofoluwe *et.al* (2011), younger famers have been found to be more knowledgeable about better practice and maybe more willing to bear risk. The age factor is very important for resilience purpose. It facilitates farmers' susceptibility to innovation. The younger farmers have the ability to adopt innovation and to retain changes more than the old. The distribution by education shows that the level of education of the respondents was low when compared to other region in the south eastern and northern part of Nigeria (Akinsanmi and Doppler, 2005). This relatively low level of education may likely increase the level of poverty among male and female rice farmers in the study area. The mean number of persons per household was 8 persons. The result also reveals that majority of the respondents were smallholder rice farmers. This finding corresponds with Mgbenka and Mbah (2016) who reported that over 80% of farmers in Nigeria were small scale farmers. A great number of the respondents have been practicing agriculture long enough. The income distribution of respondents suggests that many male rice farmers are likely to be less poor than the female farmers. Many male rice farmers in study area are beneficiary of training, credits, agricultural input, necessary information etc. because they belong to at least one cooperative society than the female farmers. Membership of association will likely decrease the poverty level of the male respondents than their female counterpart in the study area.

Table 1. Distribution of Respondents According to their Socioeconomics Characteristic

Socioeconomic characteristics	Men (%)	Women (%)	All (%)	Mean
Age (years)				
<25	5(6.76)	3(6.52)	8(6.67)	
25-60	67(90.54)	41(89.13)	108(90.00)	46
>60	2(2.70)	2(4.35)	4(3.33)	
Educational Level				
No formal Education	14(18.92)	10(21.74)	24(20.00)	
Primary education	25(33.78)	22(47.83)	47(39.17)	
Secondary education	19(25.68)	11(23.91)	30(25.00)	
Tertiary	16(21.62)	3(6.52)	19(15.83)	
Household size				
1-5	23(31.08)	17(36.96)	40(33.33)	
6-10	20(27.03)	17(36.96)	37(30.83)	8
11-15	16(21.62)	11(23.91)	27(22.50)	
>16	15(20.27)	1(2.17)	16(13.33)	
Farm size (Hectare)				
≤1	24(32.43)	3(6.52)	27(22.5)	
1.1-2.0	27(36.49)	32(69.57)	49(49.17)	
2.1-3.0	15(20.27)	7(15.21)	22(18.33)	
>3.0	8(10.81)	4(8.70)	12(10.00)	
Farming Experience				
1-10	26(35.14)	23(50.00)	49(40.83)	
11-20	19(25.68)	11(23.91)	30(25.00)	19.52
21-30	11(14.86)	5(10.87)	16(13.33)	
>30	18(24.32)	7(15.22)	25(20.84)	
Annual income (N)				
≤100,000	0(0.00)	2(4.35)	2(1.67)	
₦100,001-N200,000	34(45.95)	15(32.61)	49(40.83)	
₦200,001-N300,000	16(21.62)	11(23.91)	27(22.50)	₦*464,462:50*
₦300,001-N400,000	8(10.81)	4(8.70)	12(10.00)	
>N400,000	16(21.42)	14(30.43)	30(25.00)	
Mem. of Association				
Yes	58(78.38)	12(26.01)	70(58.33)	
No	16(21.62)	34(73.91)	50(41.66)	

Source: Field Survey, 2019

Respondents' access to farm inputs

Table 2 shows the respondents access to farm inputs. Most (37.5%) of the male respondents had access to credit while only 23.3% of the women had access. Also, 55.0% of the male farmers had access to agro-chemicals while 35.8% women had access. 60.0% of the male rice farmers had access to improved varieties while the result shows 35.8% of the female rice farmers had access improved varieties. 45.8% of the male farmers claimed ownership of farming equipment, while the result indicates that 28.3% of the female farmers claimed ownership of farming equipment. 26.7% of the male farmers had access to mechanized farm implement, while the result indicates that 9.2% of the female farmers had access to mechanized farm implement. Only 29.2% have farmland of their own, while only 18.3% of the female farmers had land of their own. This result obviously shows that men had more access to all the inputs than women. Access to some farm inputs by male respondents may promote their productive and income generating capacities as well as decrease their poverty level than their female counterpart in the study area.

Table 2: Respondents access to farm inputs

INPUT TYPE	Male %	Female %
Access to Credit	37.5	23.3
Access to Agro-chemicals	55.0	35.8
Access to improved variety of seeds	60.0	35.8
Ownership of farming equipment	45.8	28.3
Access to mechanized farm implement	26.7	9.2
Ownership of farmland	29.2	18.3

Source: Field Survey, 2019

Poverty Profile and Average Annual Income of the Respondents

From Table 3, the income level of moderate poor rice farmers fall below the poverty line of ₦25,803.40. Similarly, for core poor, their income was below the poverty line of ₦12,901.70. The result suggest if the moderately poor were assisted to meet whatever is their shortfall from the threshold of ₦ 25,803.40, they will become non-poor. This means that a core – poor rice farmers needed addition to their income in order to be moderately poor or to become non-poor. The result furthers shows the average per capita income of the respondents is ₦ 234.22. Furthermore, the result showed 59 of the rice farmers were moderately poor representing 49.17% while 61 of the farmers were non-poor representing 50.83%. The income level of moderate poor rice farmers fall below the poverty line of ₦ 25,803.40 by 17 % amounting to N52,638.94 annually in addition to their income in order to be non- poor as it is shown in Table 3.

That amount is needed annually in addition to a rice farmer average annual income to move one from the level of moderate poverty status to non-poor. The headcount ratio shows that only 49 % of the individuals in the study area were poor and that 51% were non-poor. The implication of this shows that targeted effort aimed at increasing the income of farmers in an attempt to alleviating poverty among rural farming household would help reduce income poverty considerably. This position is in consonance with the report of the World Bank that the poverty profile of Nigeria dropped by 2% in 2013 according to World Bank 2013 as reported by Ajewole *et al.*, (2016).

Table 3: Poverty Profile and Average Annual Income of the Respondents

Distribution of Responses	**Amount of income ₦**
2/ 3 of the mean income	25,803:40
1/ 3 of the mean income	12,901:70
Average per capita income	234:22
Head Count Ratio	0.49
Moderately Poor	59
Moderately Non-poor	61
Moderately poverty gap index	0.17
Moderately poverty severity index	0.03
Chronic poverty	13

Source: field survey, 2019

FGT Gender distribution of Poverty Status among the Rice farming Households

Table 4 shows the poverty status of male and female headed rice farming households in the study area. Among the male, 43.2% were income poor while 56.8% are non-income poor. Among the female category, 58.7 % are income poor while 41.3% are non-poor

Table 4: Gender distribution of Poverty Status among the Rice farming Households

	Male		Female	
Poverty Status	Freq.	%	Freq.	%
Non Poor	42	56.8	19	41.3
Poor	32	43.2	27	58.7
Total	74	100	46	100

Source: Field Survey, 2019

Determinants of Poverty among male and female rice farming households

Table 5 present the disaggregated poverty determinants of male and female rice farming households. The positive values of the coefficient implies that increasing the independent variables by one unit will increase the poverty level by the value of the coefficient while negative values of the coefficient implies that increasing the independent variable by one unit will reduce the poverty level by the value of the coefficient. The disaggregated model for the rice farmers in the study is significant at one per cent. The pseudo R-square shows that 42.5 per cent of the variable affect their poverty level for male while that of the female shows that the pseudo R-square indicates that 56.2 per cent of the variable affect their poverty level. This indicates that 42.5 per cent variation in poverty severity is explained by variations in the specified explanatory variables, suggesting that the model has fairly good explanatory power on the changes in poverty status among the respondents with 95% level of confidence.

The significant determinants of poverty among the male rice farmers in the study area are the years of farming experience and farm size. Both were statistically significant at 5 per cent and 1 per cent respectively. There was a negative but significant relationship between farming experience and poverty among male rice farmers in the study area. The probability of a male rice farmer being poor decrease with increase in the number of years involved farming rice. This implies a unit increase in farming experience will reduce the poverty by 37.1%. The reason for this result is that as farming experience increase the managerial skill in resource used in production also increases which will reduce their poverty level. There was a positive and highly significant relationship between farm size and poverty among male rice farmers in the study area. The probability of a male rice farmer being poor increase with increase in their farm size. This implies a unit increase in farm size will increases the poverty by 37.5%. This result is not consistent with that of Ajewole *et.al.* (2016) who reported that farm size was a major determinant among male household head. The significant determinant of poverty among the female rice farmers in the study area is farm size. The probability of a female rice farmer being poor increases with increase in their farm size. The variable was statistically significant at 1 per cent. The coefficient of household farm size also had significant and positive relationship with poverty status among the female respondents. This means that a unit increases in the size of farm holding would lead to an increase in the poverty by 38.2%. Ajewole *et.al.* (2016) suggested a more innovative ways in the use of rice variety and other farming methods with available land resources as a better option to increase productivity and income.

Table 4: Disaggregated Logistic Regression Analysis showing the Determinants of poverty status

Logistic regression Variables	Male			Female		
	Coefficient	Std. Err.	T-values	Coefficient	Std. Err.	T-values
Educational level	-0.0750804	0.053937	-1.39	0.43489	0.365022	-0.99
Farm Experience	-0.0086645**	0.003963	-2.19	0.922514	0.050589	-1.47
Household size	-0.007593	0.009558	-0.08	0.994014	0.145111	-0.04
Credit Access	0.1598583	0.1446767	-1.10	1.349222	1.878766	0.22
Farm size	0.02038778***	0.0411642	4.95	0.037014***	0.041553	-2.94
-const.	1.191897	0.1621571	7.35	0.459783	1.48272	0.01
No.of Observation	74			46		
Prob >F	0.0000			0.0000		
R-Squared	0.4247			0.5616		

Source: Computed from Survey Data, 2019 ***Significant at the 1 per cent level, ** Significant at the 5 per cent level

CONCLUSION AND RECOMMENDATIONS

This study assessed gender dimension of poverty among rice farmers in Lokoja LGA of Kogi State, and concluded that efforts targeted at reducing poverty among rice farming household in Nigeria was not targeted at both gender. Furthermore, the major determinants of poverty among the male rice farmers are the years of farming experience and farm size, while farm size was the major determinant of poverty among the female rice farmers. Based on findings from this study, the following recommendations are made:

1. Poverty reduction strategies in the study area should be gender specific and should focus mainly on variables that influence the poverty status of each category of household.

2. The rice farmers should be encouraged to increase production and income by creating a more innovative ways of using improved varieties and other production resources with their available farm land as this will reduce their poverty level.

3. Individuals/NGOs should not be bias but rather ensure appropriate distributions and access to farm inputs among male and female rice farmers in the study area to help them improve their rice production and reduce their poverty level.

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