

INCOME INEQUALITY AND WELFARE AMONG FARMERS IN ENUGU STATE NIGERIA

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Abstract: The study analysed income inequalities and welfare of farmers in Enugu state Nigeria, where the occupation of majority is farming. Specifically, the study accessed the income inequalities of the farmers; determine the factors that influence welfare among the farmers in the study area; and made recommendations based on the findings. Multi-stage sampling technique was adopted for this study. First, two Local Government Areas were selected from each of the three agricultural zones. From these Local Government Areas, three communities were chosen. Finally, a random selection of twenty farmers was selected each from the three communities, bringing total of one hundred and eighty (180) farmers/respondents. Primary source of data was used for the study. This was actualized with questionnaire administered to the already selected respondents. The study employed Gini-coefficient and multiple regression in the analysis of the data collected. The Gini coefficient value was 0.67, showing that there was high income inequality in the study area. The regression result that determined the factors influencing farmer's welfare showed that marital status, farm size, access to credit, value of access, cost of labour, farming experience and household size were major determinants of farmers' welfare. The study recommended that government policies targeted at farmers should be strengthened, cost saving technologies should be introduced and farmer educated to adopt such measures, amongst others.

Keywords: income inequalities, farmers, Local Government Areas, Multi-stage sampling technique.

1. INTRODUCTION

The vagaries of income distribution have been a subject of immense concern to economists for a long, time. This is because high level of income inequality produces an unfavourable environment for economic growth and development (British Council, 2012). Previous studies have shown that income inequality has risen in many developing countries in the last two decades, creating pockets of poverty situation across the globe (Clarke et al, 2003; Addison and Cornia, 2001). Income distribution pattern over the years has been a major concern in the determination of the level of economic growth and development of any country.

Specifically, the 1990s witnessed resurgence in theoretical and empirical attention by economists to the distribution of income and wealth (Atkinson and Bourguignon, 2000). Income redistribution is an unequal distribution of the income of individual, household over the different participates in an economy. Income disparity is often expressed as the rate of income to rate of the populace. The reasons for income disparity can differ essentially by education, sex, religion and social status. In the perspective of Ilaboya and Ohonba, (2013) income disparity is address through an assortment of public policies, for example, social expenditure and taxation. In Nigeria, between 1965 and 1975 serious income disparity widened substantially (Malton, 1979; Aigbokhan, 1997 and Ipinnaiye, 2001).

This means that though the economy seemed to be performing strongly, the gap between the lower income households and the upper income households was growing, which was an indication that the rapid economic growth experienced had only resulted in further concentration of national income in the hands of few proportion of the population (Malton, 1979 and Clarke et al., 2003). The level of income inequality according to Aigbokhan (1999) had worsened after the Structural

Adjustment Programme (SAP) of 1986. The link between poverty status and poverty reduction among the farming households is indirect through the relationship between productivity, income growth and poverty (Norman 1975; Ajibefun 2000 b; Ajibefun 2002; Ater 2003; Ajibefun and Daramola 2003; Amalu 2005).

It is argued that in order to reduce poverty, it is fundamental that economic policies should aim at promoting rapid economic growth (Bigsten et al. 2003; Amalu 2005; Federal Republic of Nigeria 2005; Federal Republic of Nigeria 2007). Furthermore, many authors believe that an effective approach towards more comprehensive poverty reduction is to enhance economic growth (Ravallion 2001; Dollar and Karaay 2002). However, there is general agreement in the literature that growth is necessary but not sufficient for poverty reduction (Hoekman et al. 2001; Ravallion and Datt 2002). Poverty in all its forms has blighted Nigerian society for generations.

Although there have been a multiplicity of programmes and projects with poverty reduction mandate implemented over the years, it appears they were tinkering at the edges rather than the root causes of poverty since its incidence and severity had continued to deepen (Nwachukwu and Ezeh, 2007). Nigeria is a country with the largest population on the African continent, some 162.5 million people. Of this magnitude, 49% are female representing some 80.2 million while outstanding 51% are male. It is among the thirty most unequal countries in the world with respect to income distribution while the poorest half of the population holds only 10% of national income (British Council, 2012; Idowu et al., 2011).

Nigeria has now taken over as the nation with the highest number of extremely poor people, a report by Brookings Institution has shown. Before now, India used to hold the position with a population of 1.324 billion people as against Nigeria's 200 million. According to the report, the number of Nigeria's in extreme poverty increases by six people every minute (Vanguard Report 2018). More disturbing is the fact that 54% of Nigerians still live in poverty and the proportion has doubled since 1980 (when about 28% were classified as poor). Human development indicators are also worse than those of comparable lower middle-income countries; 42% of Nigerian children are malnourished. The averages hide a context that is worse for women and girls. Nearly six million young women and men enter the labour market each year but only 10% are able to secure a job in the formal sector, and just one third of these are women (British Council, 2012). The average poverty incidence in Nigeria increased from 0.28 to 0.42 between 1980 and 1992 respectively and by 1996, the situation worsened to an average of 0.66. By implication, out of every 100 Nigerians, 66 were dwelling below the poverty line with great difficulties (NAPEP, 2006; Nwachukwu and Ezeh, 2007).

Complete eradication or alleviation of poverty is a key to development of a country like Nigeria. Unfortunately, poverty is largely situated in rural areas where the poorest people live. For this reason, efforts such as National Poverty Eradication Programme, Family Economic Advancement Programme, Directorate of Food, Roads and Rural Infrastructure (DFRRI) and among others, to reduce poverty have largely targeted rural areas. According to FAO, [5] rural infrastructure plays a crucial role in poverty reduction, economic growth and empowerment for the African rural poor. In many communities in Nigeria, inadequate and low quality infrastructure has been known to have serious implications for welfare and the persistence of poverty of rural farmers.

A high level of income inequality exists between Nigerian rural and urban area (Oyekale et al., 2006). There also exists variations in the level of income obtained by people in the rural areas is on the increase which could very much be linked to the growing dimension of poverty even among the rural households, as high level of income inequality produces and unfavourable environment for economic growth and development (Oluwatayo, 2008).

This differential between rural and urban incomes, most times, accounts for the rural-urban migration. The causes and implications of changes in inequality in many societies remain unclear (Sewanyana et al., 2004). The components that make up the acceptable standard of living can be represented as a composite whole by the real income expressed in currency values, in this case naira. Since, poverty can be linked to the income level of individuals of households and their standard of living is a measure of income obtained or received by them. It then becomes necessary to analyse income inequalities and welfare of farmers in Enugu State, Nigeria, where the occupation of majority is farming.

Specifically, the objectives of the study are to: access the income inequality of the farmers; determine the factors that influence welfare among the farmers in the study area; and make recommendations based on the findings.

2. MATERIAL AND METHODS

Study Area:

Enugu State is one of the states in the eastern part of Nigeria located at the foot of the Udi Plateau. The state shares borders with Abia State and Imo State to the south, Ebonyi State to the east, Benue State to the northeast, Kogi State to the northwest and Anambra State to the west. The name of the state derives from its capital city, Enugu. The word

"Enugu" (from Enu Ugwu) means "the top of the hill". The first European settlers arrived in the area in 1909, led by a British mining engineer named Albert Kitson. In his quest for silver, he discovered coal in the Udi Ridge.

Enugu, the capital city of Enugu State, is on the railroad from Port Harcourt, 150 miles (240 km) south-southwest, and at the intersection of roads from Aba, Onitsha, and Abakaliki. It is approximately 4 driving hours away from Port Harcourt, where coal shipments exited Nigeria. Enugu is also located within an hour's drive from Onitsha, one of the biggest commercial cities in Africa and two hours' drive from Aba, another very large commercial city, both of which are trading centres in Nigeria. The average temperature in this city is cooler to mild (60 degrees Fahrenheit) in its cooler months and gets warmer to hot in its warmer months (upper 80 degrees Fahrenheit) and very good for outdoor activities with family and friends or just for personal leisure.

Enugu has good soil-land and climatic conditions all year round, sitting at about 223 metres (732 ft) above sea level, and the soil is well drained during its rainy seasons. The mean temperature in Enugu State in the hottest month of February is about 87.16 °F (30.64 °C), while the lowest temperatures occur in the month of November, reaching 60.54 °F (15.86 °C). The lowest rainfall of about 0.16 cubic centimetres (0.0098 cu in) is normal in February, while the highest is about 35.7 cubic centimetres (2.18 cu in) in July.

Selection of Respondents:

Multi-stage sampling technique was adopted for this study. First, two Local Government Areas were selected from each of the three agricultural zones. From these Local Government Areas, three communities were chosen. Finally, a random selection of twenty farmers was selected each from the three communities, bringing a total of one hundred and eighty (180) farmers/respondents.

Method of Data Collection:

Primary source of data was used for the study. This was actualized with questionnaire administered to the already selected respondents. Enumerators who had already been trained assisted in the distribution and collection of data.

Method of Data Analysis

Objective (i) was realized using Gini coefficient while objective (ii) was achieved using multiple regression.

Model Specification

The model for the Gini-coefficient is specified thus:

$$Lgin(y) = \frac{2}{n^2 \mu} \sum_{i=1}^n i \left[-\frac{n+1}{2} \right] y_i$$

Where: n = number of observation

μ = mean of the distribution

- y_i = income of the jth household

Igini = Income Gini

This model has been used in the past by Oluwatayo (2008). The implicit function of the regression is given

as:

$$Q = f(X_1, \dots, X_n, e)$$

Q = expenditure on food and non food

X_1, \dots, X_n = explanatory variables

e = error term

The four functional forms of the model, linear, Semi-log, double log and exponential were tried and the one that gave the best fit based on econometric considerations was chosen.

3. RESULTS AND DISCUSSION

Assessment of the Income Inequality among the Respondents The Gini-coefficient has been used in the past to measure the level of inequalities in many other contexts besides income, including wealth, education, energy consumption, etc (Jacobson et al., 2007). However, this study was based on income inequalities. Inequality decomposition is a standard technique for examining the contributions of inequality of particular characteristics and can be used to assess income recipient characteristics and income package influences (Oyekale, et al., 2006). According to Babatunde (2008), inequality can be conceptualized as the dispersion of a distribution, whether one is considering income, consumption or some other welfare indicators. In this study the Gini coefficient obtained using the formula as specified above was 0.67. This result means that there is a high income inequality in the study area. According to Dillon and Hardaker (1993); Gini coefficient higher than 0.35 indicates higher inequality. Poverty and income inequality are closely related and it has been argued that income inequality is a manifestation as well as strong cause of poverty (UNU/WIDER, 2000). Furthermore, Kolenikov and Shorrocks (2003) found that a high level of poverty in the late 1990s in Russia was due more to the rise in income inequality. Thus as income inequality increases, the incidence of poverty also increases. The result of the present study is in line with Adejare (1999) and World Bank (2003).

TABLE 01: Estimate of the Factors that Influence Farmers Welfare in Enugu State.

Variables	Linear	Semi-log	Double log	Exponential
constant	28793.839 (2.235)**	-80310.492 (-0.113)	9.110 (2.749)***	10.052 (9.122)***
Age	-2125.915 (-0.513)	-64108.609 (-0.394)	0.068 (0.089)	-0.005 (-0.250)
Marital status	184458.97 (2.553)***	148229.06 (1.975)*	0.812 (2.317)**	1.164 (3.087)
Farm Type	-144128.2 (-1.923)*	-169595.2 (-1.875)	-0.969 (-4.365)***	-0.208 (-0.532)
Educational level	9141.056 (6.389)***	122180.31 (1.133)	0.485 (0.963)	0.014 (0.293)
Farm Size	20179.445 (1.932)*	26854.498 (0.582)	0.644 (2.995)***	0.134 (2.473)***
Access to Credit	222107.51 (3.150)***	2873.439 (0.038)	-0.226 (-0.645)	-0.799 (-3.027)***
Income of Farmers	-0.024 (-0.526)	-4282.615 (-0.192)	-0.058 (-0.553)	8.421 (3.624)***
Cost of Labour	-0.086 (-1.034)	25444.570 (0.981)	0.093 (0.768)	-8.651 (-3.716)***
Farming Experience	7517.484 (1.547)	942777.709 (3.331)***	0.810 (3.584)***	0.912 (7.297)***
Household size	9928.057 (0.664)	-434701.2 (-5.178)***	0.427 (1.090)	0.155 (2.003)***
R ²	0.676	0.416	0.574	0.705
F-Ratio	5.834***	3.305***	2.273**	6.541***

Source: Survey Data from University of Nigeria Nsukka

Determinants or Factors Influencing:

Farmers Welfare in estimating the factors influencing farmer's welfare in the study area, four functional forms of regression model was tried, viz: linear, semi-log, double log and exponential. However, the exponential model was chosen as the lead equation based on some econometric considerations such as number of significant variables, the F-ratio, and the R² value. (Table 01) From the result in the Table 01, marital status, farm size, access to credit, value of access, cost of labour, farming experience and household size of the farmers were significant at various levels and signs.

The coefficient of married respondents was positive and significant at one percent level. This means that marriage tend to influence welfare of farmers positively. Oluwatayo (2008) had opined that expenditure increases with marriage, thus giving rise to a negative relationship in his study. The result of the present study seems plausible because of other livelihood activities embarked upon by couples outside farming which they also embark on together. Farm size was also positive and significant at five percent risk level. The implication is that the larger the size of farm, the more their welfare

status is improved. Given the fact that the larger the farm size, the greater the chances of increased farm income, the result is very plausible. This result is also in line with Oluwatayo (2008). The coefficient of access to credit was significant at one percent but had a negative sign. This means that there is a negative relationship between farmers' access to credit and their welfare.

It could be that because of the relatively high interest rate attached to credits, farmers usually resort to paying these interests at the expense of their welfare at least in the short run. The coefficient of farmers' income was positive and significant at one percent level. This means that as income increases, welfare of farmers also increases. This result is similar to previous studies like Avery and Kannicke (1991) and Ukoha et al., (2007). The cost of labour was significant at one percent risk level but with a negative sign. This meant that as cost of labour increases, farmer's welfare decreases. Farming experience has a positive sign and significant at one percent level. This means that as farming experience increases as a result of the number of years spent in farming, welfare also increases.

This result is consistent with Agwu (2009). The coefficient of household size which was represented by the number of persons in the household was also positive and significant at 10 percent level. This suggests that as household size increases, farmers welfare also increases. This result is in contrast with Ukoha et al., (2007). However, the possible reason could be that increased household size could be used for farm labour, thus reducing the cost of labour which is an additional expenditure and thus capable of reducing farmer's welfare. The R² value which is the coefficient of multiple determination was 0.705, meaning that 70.5 per cent of the variables were explained by the model. This is fairly high. The F-ratio was 6.541 and is significant at one per cent level.

4. CONCLUSION

The study accessed income inequalities and welfare status among farmers in Enugu State, Nigeria. The result has shown that there exist high income inequalities among the farmers in the study area. The study recommends that efforts should be made to narrow down or close the gap of income disparities. Non-credit policies should be emphasized more. This is against the backdrop that having access to credit had a negative relationship with farmers' welfare. Efforts should also be made to increase farmers' income.

To this end, government policies targeted at farmers should be strengthened. This will in no small way boost farmers' income and thus their welfare. Cost of labour which had a negative correlation with welfare should be reduced. To this end, cost saving technologies should be introduced and farmer educated to adopt such measures. It is also recommended that activities aimed at boosting farmers' income should be intensified. To this end, the much talked about access to roads, and markets should not only be talked about on commentaries and promises but should be practicalised. This will go a long way in boosting farmer's income.

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