AMERICAN JOURNALS
Open Access, Peer Reviewed Journals

American Journal of Research in Humanities and Social Sciences
ISSN (E): 2832-8019 Volume 1, | June, 2022

INCIDENCE, DEPTH, AND SEVERITY OF POVERTY AMONG RURAL AND PERI-URBAN FARMING HOUSEHOLDS OF KWARA STATE, NIGERIA- A META ANALYSIS

Kamoru Bello1, Amos omofaiye1, and Ezekiel Ojediran1

1 Department of Agricultural Economics and Farm Management, Faculty of Agriculture, Univeristy of Ilorin, P.M.B 1515 Ilorin, Nigeria.

2Al-Hikmah University, Adewole Estate, Adeta Road, P. M. B. 1601, Ilorin, Kwara State.

Corresponding E mail Address: bellokamoru9@gmail.com

ABSTRACT

The worrying increase in peri-urban population and the decreasing rural farming population necessitated an inquiry into poverty indices of the communities. The usefulness of dependable information on the rural and peri-urban farming populace must be underscored. The study examined the poverty levels of the rural and peri-urban households. Samples were selected through the use of a four-stage random sampling approach.Cross-sectional data from the one-hundred and twenty farming households sampled were collected using a structured interview schedule administered on the households in a round-table format. Data were analyzed using the FGT measures, Sen and Watts index on the mean, medial and modal income of the households. Results show that in terms of poverty depth, severity, Sen index, and Watts index, peri-urban farming households fared better than rural farming households. It is therefore recommended that farming households be discouraged from migrating to peri-urban (and urban) areas at the expense of agriculture and that farming be made more favourable in the rural areas.

KEYWORDS

Farming households, peri-urban, poverty indices, Kwara State.

INTRODUCTION

In 2001, 1.1 billion people had consumption level below US$ 1 a day and 2.7 billion lived on less than US $ 2 a day (World Bank, 2011). In 2007, increase in the price of grains led to food riots in some countries. World Bank thereafter warned that 100 million people were at risk of sinking deeper into poverty. True to prediction, Zwanniken (2010) reported that worldwide, 1.02 billion

people do not have enough to eat. World Bank (2011) also found that one-third of deaths (some 18 million people per year or 50,000 people per day) are due to poverty related causes.

Available statistics indicate that the poverty rate of the Nigerian populace increased from 27% in 1980 to about 70% by 1996. By 1999, it was estimated that more than 70% of Nigerians lived in poverty (i.e. more than 7 people out of every 10 people randomly sampled) (DTA, 2007). Poverty has given rise to classes and as a result countries differ in their poverty rates. Within Nigerians, states have been found to differ from one another in terms of their poverty level (NBS, 2012). In one of such recent classifications, Kwara state was among the lowest quartile on the log. Salimonu, Atoyebi, and Sanusi (2006) reported that poverty indices significantly differ between Lagos and Osun states with the former having an enviable poverty status compared to the latter. This has shifted attention to the location being partly responsible for poverty. The depth and severity of poverty in one location may differ from what obtains in another location between and within states, local government areas and even wards. The discrepancy in poverty status may also occur within states following the conventional wisdom that rural populace is more deprived than their urban counterparts. To prevent the civil unrest that may result from this internal poverty class (especially absolute poverty), state government must make policies within their reach that will meet the needs of the differing classes with a special attention to the absolutely poor. These policies are in turn dependent on a dependable knowledge or information on the poverty indices of the communities within the state. Such literatures are not available for the study area.

For this study, the following definitions were adopted. **Peri-Urban** means 'around' urban. Peri-Urban towns and villages (communities) are those communities that are located around, about or very close to urban centres. (Concise, 2004). They are not as densely populated as urban areas. Even if they are remote from urban areas, they have urban consciousness. **Rural Communities** are areas or communities that are distant form urban areas. They are mainly characterized (especially/ in Nigeria) by lack of tarred road, availability of public transport majorly on market days, weak or no mobile communication network signal etc. **An Household** is a group of people living under the same dwelling place, who eat meals together and acknowledge the authority of a man or woman who is the head of the household (Beaman and Dillon, 2009). A farming household by extension is a group of people that satisfy not only the foregoing definition but also derives income from farming activities.

Materials and Methods

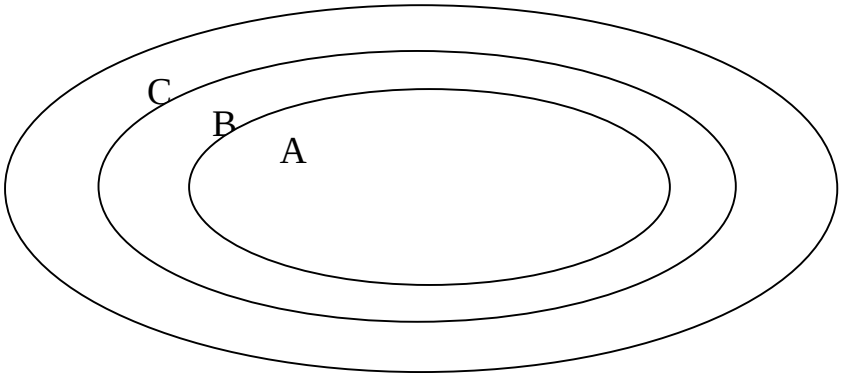
Study Area

The study area was Kwara state of Nigeria. Geographically, the state is situated between the parallels 7.45^{o} and 9.30^{o} north of the equator and longitude 2.30^{o} and 6.25^{o}east of the Greenwich meridian (Lawal, 2006). Ethnically, the state has a predominant Yoruba speaking population with some Nupe and Baruba minority. Only Ilorin (the state capital), Offa, Omu-Aran, and Oro can truly be classified as Urban (Nigeria people and population, NPP, 2003). These urban areas have about 30 percent of the state's population. The major towns (semi-urban) in the state are Jebba, Patigi, Erin-Ile, Iloffa, Adeleke, Igbewere, Ejidongari, Osi, Lafiagi, Gure, Afon, Kaiama, Isanlu-Isin, Igbaja ("About Kwara", 2012). The remaining towns or settlement are either peri-

urban, rural or semi-rural. The non-urban dwellers in Kwara state are predominantly farmers with a few artisans.

Sampling Technique

From the definition of peri-urban adopted for the study, the peri-urban communities from which samples were drawn were situated around (close to) urban areas. Because (i) the flow of goods (farm produce) to the urban market is from both the rural and peri-urban farms, (ii) in order to create a continuum for the movement of goods and (iii) for convenience, the rural communities from which samples were drawn were also situated not too far from the peri-urban areas. Figure three (1) shows the sample perimeter adopted for the study.



A= Urban Communities; **B**= Peri-Urban Communities;**C**= Rural Communities
Fig.1 Sample Perimeter, Source: Developed by the Researcher, 2017.

As a result, peri-urban and rural communities around Offa, Omu-Aran, Oro, and Ilorin were sampled. A four stage sampling approach was used. In the first stage, all the rural and Peri-Urban communities around the urban areas were divided into two, namely those near to Ilorin were divided into peri-urban and rural. This was also done to those near to Offa, Omu-Aran, and Oro. In the third stage three communities were randomly drawn from each of the four sub-divisions making a total of twelve communities of which six was rural and six peri-urban. At the fourth stage, ten farminghouseholds were randomly drawn from each of the chosen communities from the farming household sample frame provided by the community head. This made an aggregated total of one hundred and twenty farming households, of which sixty were rural and the remaining sixty were peri-urban farming households. For each rural farming household, there was a peri-urban counterpart. The principal instrument for data collection was a structured interview schedule. The instrument was tested for reliability. Other instrument such as unstructured interview (discussion), observation etc. were also employed. The principal instrument was administered on the whole household in a round table format. The research dwelled majorly on the use of primary data.

Data Analysis

Data from the rural farming households were separately analyzed, and this was also done to the data from the peri-urban farming households. The Relative Poverty was measured through the

use of mean, median and modal income approaches. The relative poverty threshold was set at 70 percent of the mean, median, and modal income for the particular locality (i.e. peri-urban or rural) in each case. The depth and severity of poverty were arrived at through the use of the H, PGI, PGI $_{squared,}$ P_{SEN} and W. The equations used for estimation are as started below.

H= (q/N)*100…… (i)

H is usually reported as 'P_o' in most literature. It is also the incidence of poverty.

$$PGI= \frac{1}{N}\left(\sum_{J=1}^{q}\frac{(z-yj)}{Z}\right) \text{ …….. (ii)}$$

PGI is a percentage between 0 and 100and is sometimes reported as a fraction, between 0 and 1.

A Theoretical value of zero (0) implies that no one in the population is below the poverty line while a value of 100% implies that everyone in the population has zero (0) income. The PGI is reported as 'P_1' in some literature (The World Bank, 2005).

$$PGI_{squared}= \frac{1}{N}\left(\sum_{J=1}^{q}\frac{(z-yj)^2}{Z}\right) \text{ …….. (iii)}$$

$$P_{SEN}= H* G_Z+PGI* (1-G_Z) \text{……. (iv)}$$

$$W= \frac{1}{N}\left(\sum_{J=1}^{q} (In \frac{(z}{yj}) \right)\frac{}{Z} \text{……..(v)}$$

Where: H=head count ration

N=total population

Q=total population of the poor who are living below the poverty line.

Z=the poverty line

Y_i= the income of the poor household J;PGI, and $PGI_{squared.}$

G_z= income Gini coefficient of only the people below the poverty line.

In=natural logarithm

Modal Income

All papers reviewed measured relative poverty through the use of mean income. Only an insignificant few attests to the possible use of median income. But the mean is greatly influenced by other observations (that are surprising, or far from the rest of the points), inappropriate for highly skewed data (observations in which the values on one side of the mean are much further from the mean than those on the other side). The other two important limitations of the mean are in the data on rates and averages (mean).While most would argue that the last two limitations are not relevant to households income, few would disagree that household income distribution in a given environment can be highly skewed and replete with outliers especially in a society where the middle income class is approximately non-existent. Added to these limitations is the knowledge that the mean may not represent the income of a single household in the society. Solutions such as omitting the outlier would be unfair to the respondents whilst biasing the results while the inclusion of the outlier would result in a mean that is far from being representative of the population.The mode on the other hand would most likely represent the income of many household in the society. With the grouping of income, the modal group would

be more representative of the population than the mean. The estimate of the mode can thereafter be gotten. The mode of a grouped data is estimated as:

$$\text{MODE} = L + \left(\frac{F_1 - F_0}{2F_1 - F_0 - F_2}\right) * h \quad \text{(vi)}$$

Where, L=lower class limit of the modal class

F_1=frequency of the modal class

F_0=frequency of the class before the modal class

F_2=frequency of the class after the modal class

h=class internal of the modal class

Although income is measured on a continuous scale it is not always the practice to approximate household income and as such treating them as it is would be better than approximating the reported income. The main argument for the modal income lies in a deep study of Maslow's (1943) Theory of Motivation, Self-Presentation (Impression Management, Tedeschi, James, Riess, Marc, (1984), Schelenker, 1980), Abraham's (1988) Self- Evaluation Maintenance theory, and self-esteem theory (Smith and Mackie, 2007). Individuals would tend to aspire towards the modal income group (especially if the upper income group was unattainable). Some of these tools have been used by various researchers (Salimonu et al, 2006; Ike and Oboh, 2009; Awotide, 2012; NBS, 2012; etc) to achieve objectives similar to those of this study and as a result this author adopted the tools in achieving the research objectives.

Results and Discussion

Incidence, Depth, and Severity of Poverty

The relative poverty was derived through the use of three (3) different approaches (the mean, modal and median income). Although the 70% threshold was used in the three approaches, their results differ. The results are as presented in table 1, 2, and 3.

The mean income of the rural farming households sampled was N92, 683,33, while that of the peri-urban farming households was N71, 021.00. the relative poverty threshold of N49, 714.70 puts the peri-urban relatively poor at 30%. Based on the mean income approach some absolutely poor rural farming household, were also relatively poor. Of the initial 73.33% of the absolutely poor rural farming household, 51.52% were relatively non-poor. Of the 18.33% of the absolutely poor peri-urban farming households were relatively non-poor. These results are similar to those obtained by Salimonu et.al., (2006), Olubanjo et.al., (2007) and Awotide (2012).

With the use of the modal income, 40% of rural farming households were poor compared to 16.67% of their peri-urban counterpart.

The median income threshold put lesser peri-urban farming households below the poverty line. Only the mean approach finds that the peri-urban farming are slightly poorer than the rural farming households. Both the median and modal income approaches present rural farming households as being poorer than their peri-urban compatriots. The income inequality among the peri-urban farming households is higher than that of the rural farming households. This is similar to Salimonu et.al. (2006) which reports higher income inequality at Lagos state compared to Osun state. Although the three measures of relative poverty used consistently finds in favour of peri-urban farming households. The author wishes to strees the picture painted by

the modal income approach.The fields of Psychology and Sociology have churned out lots of studies to the end that people tend to compare themselves of the majority. It can be suggested that farmer would tend to be comfortable where they are in the majority (that is in the modal income group) compare to where they are below the modal income group. This may partly explains why farmers keep immigrating to the peri-urban and even urban areas despite the high probability of higher farm income in the rural areas. Invariably, it is worth migrating form where 40% are relatively poor to where only 16.67% are. The depth of poverty also known as the Poverty Gap Index (PGI) was computed for both rural and peri-urban farming households.

Based on the three approaches (the mean, modal and median income) the depth of poverty was higher for rural farming households than peri-urban farming households. Assuming perfect targeting of transfers, the product of the Poverty Gap Index and the total income gives what is needed (in Naira) to move the poor households out of poverty. This incremental income is equal to the total income deficit of the poor households.

Sen and Watts Indices

Sen Index (P_{SEN}) is unique in that it considers the extent of income inequality among the relatively poor. The higher the income inequality among the poor, the higher the index. For the rural farming households, the three measures consistently find a higher P_{SEN} value for rural farming households compared to peri-urban farming households. This corroborates the initial finding that rural farming households (though made more income from farming activities) were poorer than their peri-urban counterparts.

The Watts Index (W) puts more weight on poverty the further one's income is from the poverty threshold. The further one is, the higher the index. For Rural farming households, the index was consistently higher compared to that for the peri-urban farming households. While the modal income approach puts the index at 0.2293 for rural farming households, it puts that for the peri-urban farming households at 0.04.

Socio-economic Characteristics of poor peri-Urban and Rural Farming Households

Table 4 and 5 shows the socio-economic characteristics of poor peri-urban and rural farming households respectively. Although, three approaches were used in picturing relative poverty, the one that puts greater percentage of farming households below the poverty threshold was used as the basis for extracting the poor from the two classes of farming households. Of the poor peri-urban farming households, 89.47% were male.50% of the total number of female headed households in the sample was poor. 73% had household size in the range 6-10 persons. 89.47% cultivated farmland in the range 0.40-2.00 hectares, and 47.37% of the poor peri-urban farming households were headed by persons older than 60 years. 63.16% reported Agriculture as being their major source of income. Contrary to expectation that the bulk of poor farming households would consist of persons of no formal education, 78.95% of the poor peri-urban farming households have one form of formal education or the other. All the poor rural farming households were headed. This is mainly because the sample did not include female headed households. 45.83% had households size in the range 11-15 persons. Only 12.50% had households size of 1-5 persons. 95.83% cultivated farmlands in the range 0.40-4.00 hectares, and 50% of the poor rural farming households were headed by persons older than 60years. 75%

reported Agriculture as being their major source of income. 58.34% had one from of formal education or the other. Generally, both poor peri-urban and rural farming households have fairly large household size, are headed by fairly old people and cultivates farmlands lesser than the average for each class of samples. A substantial percentage of these households claim agriculture as their main source of income. It is highly unexpected that the bulk of these households were uneducated (no matter how little). These are suggestive of the views that large households size, old households heads, small farm size and having agriculture as the only (or major) source of income have a poverty-increasing effect.

Income Transfer

While the mean income approach puts the income transfer needed for rural farming households at N595, 583.10 equivalents to 10.71% of the total income, the mode puts it at a rate equivalent to 13.86% of the total income. The income transfer needed is shown in table 6.

For the peri-urban farming households the mean income approach puts the income transfer needed at N372, 434.12 representing 8.74% of the total income, while the modal income approach puts it at 3.36% of the total income. Invariably, the poverty Gap Index (if expressed percentages) give the percentage of total income needed to lift the relatively poor out of poverty provided the income transfers are perfectly targeted. The poverty gap for each farming household, if squared, gives the poverty severity index. This is also known as the $PGI_{squared}$ or P2. Findings revealed that for the three measures used, poverty is less severe at peri-urban areas compared to rural areas. This invariably means that those farming households that are far from the relative poverty threshold were minimal for peri-urban areas than rural areas. This agrees with literature that rural residents are more hit by poverty relative to urban residents.

Conclusion and Recommendation

From the research findings, it is plausible to conclude that poverty is not as severe in peri-urban areas compared to rural areas. The PGI, $PGI_{squared,}$ P_{SEN} and W indices are generally favourably for peri-urban farming households compared to rural farming households.

As farming households emigrate form rural to peri urban areas, their chance of being relatively and absolutely poor decreases, and consequently their farm income. The increase in the percentage of households with secondary occupation may have been due to decrease in farm income. Rural areas are best suited to farming in terms of farm income.

It is therefore recommended that farming households (and even farmers) should be discouraged from migrating to peir-urban areas. This can be done by providing what they seek at the peri-urban areas to the rural areas.

References

1. "About Kwara" (2012).http"//www.kwarastate.gov.ng/abat-kwara.htm.Retrieved: 03-07-2013
2. Awotide, B.A. (2012). Poverty and income Inequality among Fish Farming Households in Oyo State, Nigeria.AgriculturalJournal, 7(2): 111- 121
3. Beaman, K., and Dillon, A. (2009). Do Household Definitions Matter in SurveyDesign? Results from a Randomized Survey Experiment in Mali

http://sistersarces.worldbank.org/INTFR/Resources/75459-1259791405401/BeamanDillon_HHdef_Mali.pdf.Retrieved:11-05-2013.
4. Concise (2004) Concise Oxford English Dictionary 11th Edition. Oxford University Press U.S.A.
5. "Debate to Action" (2007). Development Knowledge Facilitators courseMaterials-pp 10-16. World bank, British Council and NYSS.
6. Maslow, A.H.(1943). A theory of Human Motivation. Psychological Review, 50 (4): 370-78
7. Maslow, A. (1954). Motivation and Personality. New York, NY. Harper. Pp 236.
8. Nigeria people and Population, NPP" (2003). http://www.onlineNigeria.com/links/kwaraadv.asp?Blwb=313.
9. "NBS" (2012) 112.519 Million Nigerians live in poverty. National Bureau of Statistics, Abuja, Nigeria.
10. Olubanjo, O.O.; Akinyele, S.O. and Soremikun, W.A. (2007). Poverty Determinants Among Farmers in Ogun State, Nigeria. AgriculturalJournal, 2(2), 275-280.
11. Salimonu, K.K., Atoyebi, J.O., and Sanusi, W.A. (2006). Income Inequality, Poverty and Social Welfare Among Government and Private Employees in Lagos and Osun States of Nigeria. Agricultural Journal, 1(4): 315-319.
12. Schlenker, R. (1980). Impression management: The Self-Concept, Social Identify, and Interpersonal Relations. Monterey, Californian, Brooks/Cole.
13. Smith,E.R, and Mackie, D.M(2007). Social Psychology (3rd Ed.). Hove: Psychology Press.
14. Tedeschi, T. and Riess, M. (1984) Identities, the Phenomenal Self and Laboratory Research in TEdeschi, J.T (Ed): ImpressionManagement theory and Social Psychological Research. Academic Press, New York.
15. Tesser, A.(1988). "Towards a self-evaluation Maintenance Model of Social Behavior" In Berkowitz, L. Advances in Experimental Social Psychology 21. New York: Academic Press.pp.181-227.
16. World bank (2011). World Development Indicators. The World bank. Washington DC.USA.
17. Zwanniken, F. (2010). Boosting Agricultural Production in the south: Time for Action. OFID Quarterly, July, 2010 pp 5-11

Table 1: Poverty indices (Mean income based)

Parameter	Rural	Peri-Urban
Mean Income (N)	92,683.33	71,021.00
Poverty Thresholds(N)	64,878.33	49,714.70
Headcount ration	0.30	0.32
PGI	0.1071	0.0874
$PGI_{squared}$	0.0633	0.0327
P_{SEN}	0.1550	0.1173
W	0.1810	0.1112
Gini coefficient of the poor	0.2483	0.1285

Source: Field Survey, 2017

Table 2: Poverty indices (Modal income based)

Parameter	Rural	Peri-Urban
Modal income (N)	106.454.54	52,428.57

Poverty Threshold (N)	74,518.18	36,699.99
Headcount ratio	0.40	0.1667
PGI	0.1385	0.0336
$PGI_{squared}$	0.0777	0.0096
P_{SEN}	0.1983	0.0452
W	0.2293	0.0400
Gini coenfficient of the Poor	0.2287	0.0870

Source: Field Survey, 2017

Table 3: Poverty indices (Median income based)

Parameter	Rural	Peri-Urban
Modal income (N)	95,000	63,000
Poverty Threshold (N)	66,500	44,100
Headcount ratio	0.3167	0.2333
PGI	0.1129	0.0614
$PGI_{squared}$	0.0657	0.0214
P_{SEN}	0.1625	0.0809
W	0.1887	0.0764
Gini coenfficient of the Poor	0.2436	0.1135

Source: Field Survey, 2017

Table 4: Socio-economic characteristics of poor peri-urban

Characteristic	Frequency	Percentage
Household Head Sex		
Male	17	89.47
Female	2	10.53
Total	19	100
Households Size		
1-5	4	21.05
6-10	14	73.68
11-15	1	5.26
Total	19	100
Household Head age (year)		
31-40	2	10.53
41-50	4	21.05
51-60	4	21.05
61-70	8	42.11
71-80	1	5.26
Total	19	100
Household Farm Size(Hectares)		
0.40-2.00	17	89.47
2.01-4.00	2	10.53
Total	19	100
Household Head Highest Education level		
No Formal Education	4	21.05
Adult Education	1	5.26
Quranic/Theological Education	1	5.26
Primary Education	6	31.58
Secondary Education	7	36.84

Total	19	100
Household Major Income Source		
Agriculture	12	63.16
Others (e.g Civil Service)	7	36.84
Total	19	100

Source: Field Survey, 2017

Table 5: Socio-economic characteristics of rural farming household

Characteristic	Frequency	Percentage
Households Size		
1-5	3	12.50
6-5	6	25.00
11-15	11	45.83
16-20	4	16.67
Total	24	100
Household Head age (years)		
31-40	2	8.33
41-50	5	20.83
51-60	5	20.83
61-70	5	20.83
71-80	6	25.00
>80	1	4.17
Total	24	100
Household Farm Size (Hectares)		
0.40-2.00	8	33.33
2.01-4.00	15	62.50
4.01-6.00	1	4.17
Total	24	100
Household Head Highest Education level		
No Formal Education	10	41.66
Adult Education	3	12.50
Quranic/Theological Education	4	16.67
Primary Education		
Secondary Education	4	16.67
Total	3	12.50
	60	100
Household Major Income Source		
Agriculture	18	75.00
Others(e.g Civil Service)	6	25.00
Total	24	100

Source: Field Survey, 2017

Table 6: Total Income Transfer needed for the poor in the Sample.

Income	Rural	Peri-Urban
Mean based	595, 583.10	372,434.12
Mode based	770,198.50	143,178.34
Median based	627,836.90	261,641,36

Source: Field Survey, 2017