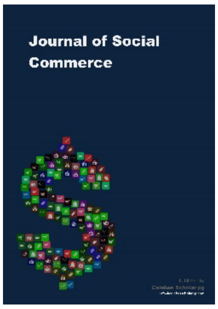

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Robustness of the Poverty Measures: Evidence from Farm Households in Akwa Ibom State, Nigeria

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Abstract

The use of a plethora of poverty indexes is sometimes fraught with difficulties. The purpose of this research was to quantitatively assess poverty and to examine the robustness of the poverty metrics. Selecting representative farm homes required a multistage sample technique, which was implemented. A total of 150 rural homes were surveyed using questionnaires. Stochastic dominance and the weighted poverty measures of Foster, Greer and Thorbecke were used in this work to examine the weighted poverty measures' resilience and sensitivity to changes in the poverty line. According to the findings, as people become older and their families get larger, the likelihood, severity, and depth of poverty increases. An asymptotic sampling distribution was utilized to infer whether poverty was larger across a variety of hypothetical poverty lines by stochastic dominance analysis. First-order stochastic dominance was found, with the Cumulative Distribution Function (CDF) of households headed by people over 60 years old lying totally above the other distribution functions (CDFs). The CDF of single families was lower than the CDF of married households, according to the findings. At any poverty level, the CDF of families with more than 10 household members stochastically dominated those with fewer family members. Many households will be lifted out of poverty if poverty-reduction initiatives are targeted at those over 60 and those with big families.

Introduction

Researchers and development stakeholders should be alarmed about the dire state of poverty in Nigeria. Despite its abundance of natural resources, the nation remains one of the world's

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poorest. (Etim and Edet, 2014; Etim and Patrick, 2010) There have been many studies linking agricultural to poverty (Canagarajah et al.,1995; FOS, 1999; Khan, 2001; Okunmadewa, 2001; Etim, 2007; Etim et al.,2017; Etim et al.,2019; Etim et al.,2021) and the bulk of Nigeria's poor reside in rural regions and depend on farming for their existence (Etim and Udoh, 2013; Etim et al.,2017; Etim and Ndaeyo, 2020). Poverty may be measured in a variety of ways, each with advantages and disadvantages, including by looking at things like family income, quality of living, spending, and access to essential services. Poverty has become a worldwide problem in recent years, but the need for international comparisons of poverty indicators in the framework of the 2030 Agenda for Sustainable Development is essential (United Nations Economic Commission for Europe, 2017).

Scientists are working around the clock to develop accurate, consistent, and comparable indicators of poverty that can be used by people throughout the globe (Kamanou, 2005). Using multiple poverty indices to examine welfare changes frequently results in a number of issues. Using stochastic dominance approaches, Madden (2000) and Garcia-Gomez et al., (2019) argued that the difficulties associated with the plurality of poverty indicators may be overcome. While other multidimensional distributions solely analyze marginal distributions, the stochastic dominance approach is appropriate since it takes into account the nexus between the many aspects of poverty. The stochastic dominance approach will be used to experimentally quantify changes in farm household welfare in this research. According to the research findings, quantitative poverty measurements are more resilient to shifting poverty thresholds than unweighted ones.

Conceptual Framework

In order to rank welfare distributions, the mechanics of ranking them must be understood in conjunction with the idea of stochastic dominance. As a result, stochastic dominance is nothing more than treating consumers as a continuum rather than dealing with the concept sure as the fraction of people whose consumption says is less than x, we assume x to be continuously distributed in the population with cumulative distribution function (CDF) F (x). It is possible to conduct a comparison of two welfare distributions whose CDFs are F1 (x) in order to determine one is superior than the other in some yet to be determined way.

The first definition is the first-order stochastic dominance. A distribution with CDF F1(x) stochastically dominates another distribution with CDF F2 (x) in the first order if and only if, for all monotone non-decreasing function f(x).

$$\int F(x)\, \delta F1\,(x) \geq \int f(x)\, \delta F2(x) \qquad \text{----------------} \quad 1$$

Where integral is taken over the whole range of x.

We may better understand the concept above if we consider f(x) to be a valuation function and monotonicity to denote that more is better in general (or at least no worse). The average value of f in distribution 1 is at least as big (if not greater) than the average value of f in distribution 2 according to equation I This is true regardless of how we evaluate x, as long as more is better (Deaton,1997). As a result, distribution 1 is superior than distribution 2 and stochastically dominates it in the sense that it contains more of x. Another alternate scenario including first order stochastic dominance yields a significant finding, which is discussed below. In the case of condition, I it is the same as the condition that for every x.

$$F_2\,(x) \geq F_1\,(x) \qquad \text{-------------} \; 2$$

As a result, the CDF of distribution 2 is often equal to or greater than that of distribution 1. That is, distribution 2 always has greater mass in the lower part of the distribution, implying that the reason of any monotone rising function ranking distribution 1 higher than distribution

2 is due to the higher mass in the lower portion of the distribution. The second definition is the second order stochastic dominance of the random variables. While this notion has more strength than the first order stochastic concept, it is less powerful than the second order stochastic concept since first order dominance always implies second order dominance, but not vice versa. For every monotone non-decreasing and concave functions f, if either of the inequality I or (ii) holds, the distribution (f1(x) stochastically dominates the distribution F2(x) at second order for all monotone non-decreasing functions f (x). Because the monotone non-decreasing and concave functions are both members of the class of monotone non-decreasing functions (Deaton, 1997), first order dominance implies second-order stochastic dominance in the case of the concave function. The function f(x) has a positive first derivative in the first order stochastic dominance, but it has a positive first derivative and a negative second derivative in the second order stochastic dominance.

It is possible to represent the second order stochastic dominance in a variety of ways, just as it is possible to express the first order stochastic dominance. F1(x) has a greater second-order dominance than F2(x) for all values of x, as seen in the table below (Deaton, 1997).

$$D_2(x) = \int_0^x F_2(t)dt \geq \int_0^x F_2(t)dt = D_1(X) \qquad \text{------------------ } 3$$

According to the preceding discussion, second order stochastic dominance is not tested by comparing the CDFs themselves, but rather by comparing the area under the CDFs. It should be noted that while considering poverty, a limited form of stochastic dominance is utilized in which Z0 x z1 is chosen as a starting point. According to Deaton (1997), more orders of stochastic dominance may be defined by continuing the sequence that has previously been established. Therefore, for third order stochastic dominance, the f(x) function has three derivatives: a positive first derivative, a negative second derivative, and a positive third derivative (see figure).

Application of Stochastic Dominance to Poverty

In addition to being helpful in examining the resilience of poverty to slight changes in the placement of poverty lines, dominance tests also enable us to broaden the scope of our investigation to include a larger variety of poverty lines (Assadzadeh and Paul, 2003). It is beneficial to employ stochastic dominance analysis in order to avoid arbitrarily selecting the poverty line. Starting with the incidence of poverty and considering what happens when the poverty line shifts, we have P0, which is the percentage of the population living below the poverty line, as the starting point.

$$P_0(ZiF) = F(z) \qquad \text{------------------ } 4$$

Because of its position to the left of the equation, it stresses not just that poverty incidence is a function of poverty line, but also that poverty incidence is a function of the distribution F. If we have two distributions F1 and F2 relating to different sub-groups and we want to know which distribution shows more poverty and to what extent the comparison is dependent on the choice of poverty lines, then (4) tells us that if for all poverty lines, the distribution F1 shows more poverty than the distribution F2.

$$F_1(z) > F_2(z)$$

The headcount for distribution 1 will always be greater than the headcount for distribution 2. In order to assess the robustness of poverty incidence, we just need to draw the cumulative distribution functions (CDFs) of the two different poverty incidence distributions. As long as one has a lower poverty level than another within a range of relevant poverty levels, the choice of poverty levels within that range will make no difference to the result.

This means that if and only if one of the two distributions stochastically dominates the other at first order, the poverty ranking of the two distributions according to the head count ratio is resistant to all conceivable choices of poverty line. In other words, regardless of the poverty line picked within the range, sub-groups with lower CDF will have lower poverty incidence, depth and severity than sub-groups with higher CDF, regardless of the poverty line selected within the range.

When there is any intersection between the CDFs of the sub-groups, no ranking can be determined, necessitating the use of the second order stochastic dominance test, which is performed on the intersection. This test is carried out using the poverty deficit curve (PDC), which is defined as the area under the CDF up to a certain poverty level.

$$D\ (Z;\ F) = \int_0^2 F(x)d(x) \qquad \text{----------------------------} \quad 5$$

According to Deaton (1997), the utility of the poverty depth in assessing the second order stochastic dominance may be shown by integrating the right hand side of (ii) to yield

$$D(Z;F) = ZF(Z) - \int_0^2 F(x)xd(x)\ Zd(Z)\ (I\text{-}\mu^{\ p/z}\ Z = ZP_1(z;F)$$

Whenever µP is the mean wellbeing among the poor and P1(Z;F) is the measure of the poverty gap, Equation iii establishes that we can use the poverty deficit curve (PDC) to examine the robustness of the poverty gap measure to different choices of the poverty line in the same way that we can use the CDF to examine the robustness of the poverty incidence measure to different choices of the poverty line.

Overall, if the CDF of an individual is greater or lower than that of another individual throughout a variety of poverty lines, then the same would inevitably be true for the poverty deficit curves as well (Deaton, 1997; Omonona,2001). F1 and F2 are two distributions that might be considered informally.

$$F_1(x) \geq F_2(x),\ 0 \leq x \leq Z^+ \qquad \text{------------------------} \quad 6$$

then,

$$D\ (Z;\ F_1) = \int_0^2 F_2(x)dx \geq \int_0^2 F_2(x)dx = D(Z;F2),\ 0 \leq x \leq Z^+ \qquad \text{----------------}7$$

If the CDFs of two or more sub-groups do not cross, then the occurrence of poverty and its severity will be unaffected by the choice of the poverty line.

Alternatively, if the CDFs cross but not the PDCs cross, it indicates that poverty occurrence is sensitive to the choice of poverty line, whereas poverty depth and severity are not sensitive to the choice of poverty line for that sub-group.

Research Methods

Study Area

The research was carried out in the Nigerian state of Akwa Ibom. The state is located between the latitudes of 4 º33' and 5o53' North and the longitudes of 7 º25' and 8 º25' East and has a total land area of 7,246 square kilometers. Its capital is Albany. The state is bordered to the north by Abia State, to the east by Cross River State, to the west by River State, and to the south by the Atlantic Ocean, according to the National Population Commission (2006). Its estimated population is around 3.9 million. The state is organized into 31 local government units for administrative convenience, and there are six Agricultural Development Project (ADP) zones, which are as follows: Oron, Abak, Ikot Ekpene, Etinan, Eket, and Uyo. It is situated in the rain forest zone and has two different seasons, namely, the rainy season and the dry season, which are separated by a mountain range. The yearly precipitation is between 2000 and 3000 millimeters. The majority of the people who live in rural areas in the study region are farmers, and the crops that are most typically grown include cassava, oil palm, yam, cocoyam, fluted pumpkin, okra, waterleaf, and bitter-leaf (among others). Additionally, some micro-livestock is often produced on a small scale in the backyards of most homesteads.

Sampling and Data Collection Technique

The representative farm homes for this research were selected using a multistage sampling approach, which was used throughout the process. The first step included the selection of three Agricultural Development Project Zones in Akwa Ibom State at random from a pool of six. The random selection of 5 villages each ADP zone was used in the second stage sample, for a total of 15 villages in the final stage sampling. Furthermore, a total of 10 farm homes were picked at random, for a total of 150 farm households in total. The information in this research was derived from primary sources. The core cross-sectional data for the research came from a farm-level extensive itinerary survey that included 150 rural farm families in the study region. The information was gathered from the heads of agricultural households via the use of a well-structured questionnaire. Primary data contained information on household income and spending, socioeconomic characteristics of households and their heads, farm specific factors, and so on. Secondary data included information on household income and expenditure.

Analytical Technique

The weighted poverty index developed by Foster, Greer, and Thorbecke (FGT) (1984) was utilized for the quantitative measurement of poverty. The rationale for this selection is due to the fact that it is decomposable among the subgroups.

The FGT measure for the ith subgroup ($P\alpha i$) is given as:

$$P\alpha i = n^{-I} \sum_{j=1}^{qi} \left[\frac{z - Yji}{z,\ O\ max}\right]^{\propto} \quad \text{---------------------------------} \; 8$$

For each subgroup, Pi is the weighted poverty index; ni is the total number of families in that group that are poor; Yj is the per adult equivalent spending of household j in subgroup I z is the poverty line, and the degree of worry for the depth of the poverty is indicated by the letter i. (IFAD, 1993).

The descriptive statistics employed in this research include graphical analysis and frequency distribution, amongst other things. The stochastic dominance analysis was carried by using graphical representations. For the stochastic dominance analysis to be effective, the cumulative distribution function and poverty lines must be used in conjunction with the poverty threshold in order to determine if the P measure is sensitive or not to changes in the poverty threshold. A frequency distribution was used to illustrate the frequency of occurrence of a specific sample among a set of samples.

As established by the World Bank (1996), the poverty line utilized in this research is defined as two-thirds of the mean household spending (adult equivalent). However, according to Simler et al (2004), since children's food needs are lower than those of adults (and the converse may be true for other commodities and services, such as education), consumption is often represented in adult equivalent units (AEU) (AEU). Accordingly, adult equivalents for this investigation were constructed in accordance with Nathan and Lawrence (2005) in the following ways:

$AE = 1 + 0.7(N_1 - 1) + 0.5N_2$ -------------- 9

Where AE = Adult equivalent
N_1 = Number of adults aged 15 and above
N_2 = Number of children aged less than 15

When ∝ is equal to zero in equation 8, it indicates that there is no cause for worry, and equation 8 provides the head count ratio for the incidence of poverty in the population (the proportion of the farming households that is poor). That is

$P\propto i = ni-1$ -------------------- 10

When ∝ is equal to 1, it shows uniform concern and equation 8 becomes

$P1i = ni-1$ -------------------- 11

The depth of poverty is determined by the equation (10) above (the proportion of expenditure shortfall from the poverty line). It is sometimes referred to as the poverty gap, which is defined as the average difference between the income of the poor and the poverty line. Hall and Patrinos (2005) developed a formalized formalized formalized formalized formalized formalized formalized (Hall and Patrinos, 2005).

It is possible to distinguish between the poor and the poorest when ∝ is equal to 2 or more (Foster et al., 1984, Assadzadeh and Paul, 2003). Equation 8 become

$P2i = ni-1$ ---------------------- 12

Equation 11 yields a distribution sensitive FGT index, which is referred to as the severity of poverty in the United States. It provides information on the degree to which spending is distributed among the poor.

The FGT measure for the whole group or population was calculated using the following formula:

$P_\propto =$ ----------------------- 13

For example, P is the weighted poverty index for the whole group, m is the number of sub-groups present, and ni is the total number of households present in the entire group as well as the ith sub-group.

The contribution (Ci) of each sub-weighted group's poverty measure to the overall group's weighted poverty measure was calculated using the method of least squares regression.

$Ci = niP\propto i/nP\propto$ --------------14

Since the FGT measures were estimated on the basis of sample observation, we tested whether the observed differences in their values are statistically significant or not.

The test of significance of P∝I (subgroup poverty measure) relative to the P∝ (whole group poverty measure) is given according to Kakwani (1993) by

$t = (P\propto I - P\propto)/SE(P\propto i)$ ---------------15

where standard error of P∝I, denoted by SE (P∝i) is $\sigma(P\propto i)\sqrt{ni}$ for large samples ($ni \geq 30$) and according to Spiegel (1975) $\sigma(P\propto i)\sqrt{ni}$ for small samples ($ni < 30$) with $ni - 1$ degree of freedom.

The descriptive statistics employed in this research include graphical analysis and frequency distribution, amongst other things. The stochastic dominance analysis was carried by using graphical representations. The stochastic dominance analysis makes use of the Cumulative

Distribution Function (CDF) and poverty lines in order to determine whether or not a variable is sensitive to changes in the distribution. If we want to know whether or not a relationship of stochastic dominance exists between two distributions, we must first describe the distributions using their cumulative distribution functions, or CDFs, and then compare them. According to Davidson (2006),

Results and Discussion

Poverty profile of farm households

The poverty of agricultural families in Akwa Ibom State was broken down into sub-groups based on age, marital status, and household size in order to better understand how poverty differs across sub-groups.

Three age groups were utilized to characterize poverty among farm households: those aged 21 to 40 years, those aged 41 to 60 years, and those aged 61 to 80 years. The frequency of poverty among agricultural families, on the other hand, rises with the age of the household's head. The results of Dercon and Krishnan (1998) showing poverty incidence, depth, and severity are lower in families led by people under the age of 45 are confirmed by the findings of Dercon and Krishnan (1998). The findings are likewise consistent with those of the Federal Office of Statistics (FOS) (1999), which found that older farm family heads had a higher prevalence of poverty than younger farm household heads. According to Table 2, 31 percent of heads whose heads' ages range between 21 and 40 years are poor, 52 percent of heads whose heads' ages range between 41 and 60 years are poor, and 69 percent of heads whose heads' ages range between 61 and 80 years are in poverty, respectively. All other age sub-groups are significantly different (p> 0.10) from the overall poverty incidence of the group, with the exception of those with household heads aged 41 to 60 years. The poverty incidence in the two sub-groups, ages 21 to 40 and 61 to 80, is statistically significant at (P0.10). The findings are identical to a previous empirical result obtained by Omonona (2001).

All of the potential pairings of age groups, as indicated in Table 3, exhibit substantially different poverty incidence rates when compared to one another (P 0.01). In other words, the age of the head of the home has an impact on the amount of poverty occurrence.

According to Table 3, farm families with heads aged 21-40 years, 41-60 years, and 61-80 years make up 15, 73, and 12 percent of the whole group's poverty incidence, respectively.

The age of the household head has a positive relationship with the amount of poverty in the home. This is due to the fact that as one's age grows, one's capacity to do tough tasks diminishes as well. Because children and younger household members are receiving education and training, the number of members of the household who are available to work on the farm diminishes as the age of the head of the family increases. As a result, the farm's size and cultivable land area are reduced, and the farm's revenue is reduced as a result. (Etim,2007). Although the findings do not contradict Dercon and Krishnan (1998) or FOS (1999), they do confirm that the amount of poverty is inversely proportional to the age of the family head.

One-fifth of married farm families live in poverty, according to the Census Bureau. Unmarried household heads, on the other hand, accounted for 15% of the impoverished. The t-values indicate that the occurrences of poverty in the two sub-groups are statistically significant. The p-values were calculated in order to determine if there was a statistically significant difference between the poverty occurrences of the two sub-groups. A result of -9.75 indicates that there is a statistically significant difference (p 0.01). Consequently, the marital status of the heads has an impact on the occurrence of poverty. The contribution of married homes to the overall poverty of the group is 96 percent, while the contribution of unmarried households is just 4 percent of the total. Following a similar pattern to poverty incidence, the depth and severity of poverty follow a similar pattern to poverty incidence as seen in table 4.

Farm families led by married people tend to be poorer than farm households headed by unmarried people. This may be due to the fact that married farm households have large household sizes, which increase dependency and, as a result, have lower welfare status than farm households headed by unmarried people. Farm households were divided into three sub-groups: those with 1-5 members, those with 6-10 members, and those with 11-15 members, respectively. When compared to homes with fewer than 5 people, households with more than 10 members are more likely to be poor (28 percent compared to 28 percent).

The results of Table 5 reveal that the occurrence of poverty is statistically significant (P 0.10) in all of the sub-groups studied. This indicates that the prevalence of poverty in the three sub-groups differs from the prevalence of poverty in the whole group. Furthermore, according to the findings of the study in Table 6, there are statistically significant variations in the incidence of poverty across all conceivable pairs of household size (P 0.10). This means that the size of a household has an impact on the prevalence of poverty in that home. The contribution of the 1-5 members subgroup to the overall poverty incidence of the group is 4 percent, but the contributions of the 6-10- and 11-15-members subgroups to the overall poverty incidence are 41 and 55 percent, respectively.

Results reveal that when household size grows, both the level of poverty and the extent to which they contribute to the overall group's poverty increases, which is consistent with previous research. Another possible explanation is related to the fact that larger households have more dependents who make less contribution to the household's overall revenue. Findings, on the other hand, are identical with World Bank (1991), Lanjouw and Ravallion (1994), Schubert 1994, World Bank (1996), Dercon and Krishnan (1998), Etim and Udofia (1998), and others (2013).

Table 2. Comparison of Poverty by Age of Household Heads

Age of Household Head(years)	P_o	P_1	P_2	P_o	P_1	P_2
21 – 40	0.31 (-2.00)**	0.25 (0.26)	0.25 (-0.27)	0.15	0.13	0.12
41 - 60	0.52 (1.00)	0.48 (0.00)	0.51 (0.05)	0.73	0.73	0.72
61 - 80	0.69 (1.69)*	0.74 (1.88)*	0.86 (1.90)*	0.12	0.74	0.16
All	0.57	0.48	0.44	1.00	1.00	1.00

Figures in parentheses are t-values of Pα %, ** at 5%, * at 10%.

Table 3. Poverty by Age of Household Head (Years)

Age of Household Head	P_o	P_1	P_2
2- 40 vs. 41-60	-7.00***	-1.10	-1.44
2- 40 vs. 61-80	-7.60***	-0.84	-0.95
41-60 vs. 61-80	-2.13	-0.70	-0.76

*** Significant at 1% ** at 5%

Table 4. Comparison of Poverty by Marital Status of Household Heads

Marital status of Household Head	P_o	P_1	P_2	P_o	P_1	P_2
Married	0.54 (1.75)*	0.49 (0.11)	0.54 (-0.10)	0.96	0.94	0.91
Single	0.15 (-4.00)***	0.12 (-0.44)	0.12 (-0.44)	0.04	0.06	0.09
All	0.57	0.48	0.44	1.00	1.00	1.00

δ- value	-9.75***	-1.42	-1.91			

Figures in parentheses are t-values of Pα %, ** at 5%, * at 10%.

Table 5. Comparison of poverty by Household size

Household Size	P_o	P_1	P_2	P_o	P_1	P_2
1-5	0.28 (-3.81)***	0.08 (-2.51)**	0.06 (-2.91)**	0.04	0.04	0.06
6-10	0. 51 (2.11)**	0.25 (0.82)	0.28 (0.21)	0.41	0.41	0.38
11-15	0.72 (1.72)*	0.53 (0.13)	0.51 (3.21)***	0.55	0.55	0.56
All	0.57	0.48	0.44	1.00	1.00	1.00

Figures in parentheses are t-values of Pα ***significant at 1%,** at 5%, at 10%

Table 6. Poverty by Household Size

Household Size	P_o	P_1	P_2
1- 5 vs 6-10	-5.13***	-2.51	-2.62**
1- 5vs 10-15	-4.52***	-3.18	1.13
6-10 vs 11-15	-1.98	2.53	-2.69***

***Significant at 1%, ** at 5%, * at 10%.

Robustness of the weighted poverty measures

The findings of the study of the sensitivity of the weighted poverty P measures (Po, P1, and P2) to changes in the poverty line, which are dictated by a certain amount of subjectivity and arbitrariness, are described in the following section. The results of the stochastic dominance analysis are used to assess the robustness of the finding about the disparities in poverty between sub-groups. Specifically, given a certain range of poverty lines, say Z- to Z+, the condition of first order dominance may be described as follows: poverty incidence in a sub-group is indisputably lower if the CDF for the sub-group falls inside the range of poverty lines specified. Thus, a head count ratio is resilient to all feasible selections of poverty line within the stated range only when one CDF stochastically outperforms the other CDF. The poverty measure, on the other hand, is considered to be sensitive. Furthermore, once a distribution exhibits first order stochastic dominance, second order stochastic dominance follows as a natural consequence (Omonona, 2001).

In the course of the study of stochastic dominance, four additional poverty lines were identified, each of which is a multiple of the original poverty line. These are the multiples of 0.4, 0.6, 0, 1.0, and 1.2, respectively. The following is a summary of the findings of this investigation:

As seen in figure 1, the CDF of families with heads aged over 60 years is much higher than the other CDFs, and the CDF of households with heads aged 21 – 40 years is significantly higher than the CDF of households with heads aged 41 – 60 years, as well. The results reveal that there is first order stochastic dominance, and as a consequence, the incidence, depth, and severity of poverty will be greatest for the sub-groups older than 60 years and lowest for the sub-groups younger than 40 years over the whole range of the poverty lines.

As seen in figure 2, the CDF of households headed by unmarried people is much lower than that of families led by married people. Accordingly, families led by married individuals were much poorer than households headed by unmarried people, suggesting that first order stochastic dominance exists.

Figure 3 illustrates that the CDF of households with 6-10 members stochastically dominates the CDF of households with fewer than 6 members, which in turn is stochastically controlled by the CDF of households with more than 10 members (as shown in the previous paragraph).

As a result, for any given poverty threshold, large-sized families will have the greatest incidence, depth, and severity of poverty among all households. In accordance with Etim and Udoh (2015), who discovered that families with fewer members stochastically outperformed those with bigger members, this conclusion is also supported.

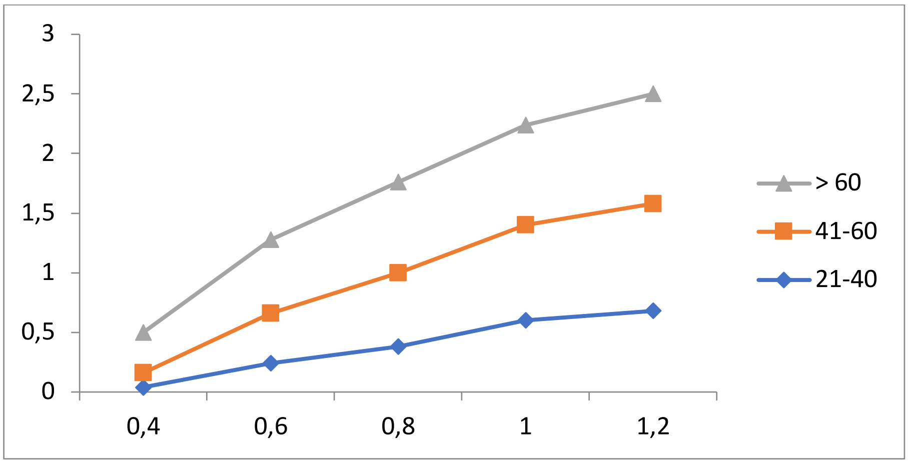

Figure 1. CDFs of Individual Per capita Adult Equivalent Expenditure by Age

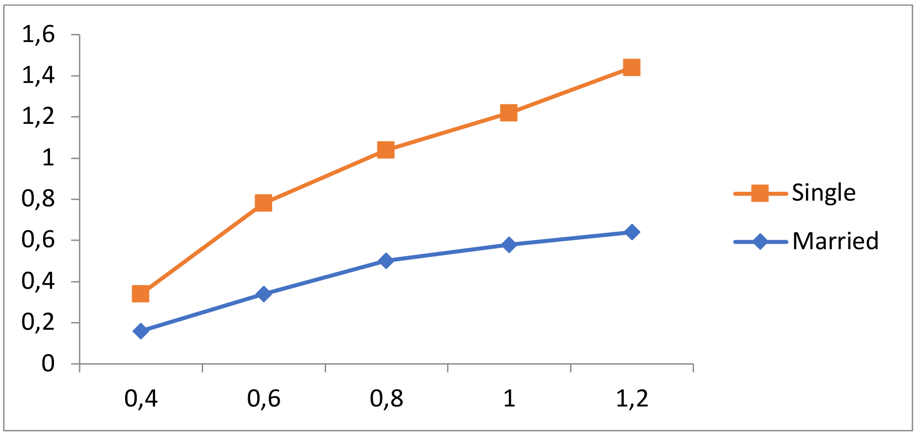

Figure 2. CDFs of Individual Per capita Adult Equivalent Expenditure by Marital Status

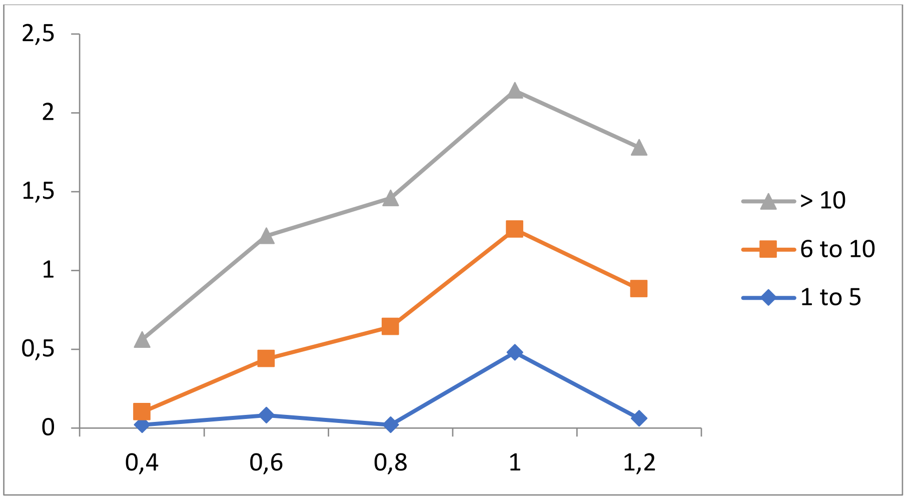

Figure 3. CDFs of Individual Per capita Adult Equivalent Expenditure by Household Size

Conclusion

The quantitative assessment of poverty and the evaluation of the robustness of the poverty measures to changes in the poverty line were carried out using the FGT weighted poverty measure and stochastic dominance analysis, respectively. The findings found that the frequency of poverty was greater in households with members over the age of 60 and lower in families between the ages of 20 and 40. The prevalence of poverty was greater in married households than in unmarried ones. Among addition, the findings found that the frequency of poverty was greater in households with more than one child. Policies and initiatives for poverty reduction should be focused towards the elderly population as well as households with multiple members.

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