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Decomposition Analysis of Political Inequality among Rural Households in Nigeria

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Abstract

This study profiled and decomposed political inequality among rural households in Nigeria. Core welfare indicator questionnaire survey data conducted by National Bureau of Statistics in 2006 was used. The data was analyzed using Generalized Entropy and Shapley decomposition. Result revealed that 90.8% of the respondents have low participatory ratio in politics and decision making and the level of dispersion across the mean of the population share is 0.196. South East and North Central zone have the highest (0.217) and the least (0.195) level of dynamics. Shapley decomposition shows that political inequality is more as a result of dynamics within the various socio-economic groups contributing between 94.8% and 98.2% of the total political inequality. Furthermore, households that are headed by male, have household size consisting of 6-10 members, 31-60 years. Low level of participation in politics and decision making therefore calls for political reform by all stakeholders and development partners to remove violence, corruption and rigging from the political system and also to sensitize households on the importance of participation in politics and decision making in the policy formulation and implementation processes.

Keywords: *Decision making, Inequality, Political participation and Shapley decomposition*

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Introduction

A good governance system is defined by its relationship to some key prerequisites, including accountability, transparency, participation, and predictability (Natufe 2006). Literature has shown that participation is a very important component of the elements of

governance. It is imperative that citizens participate at all levels of their government's decision making process. For effective participation in public policy, it is essential for citizens to organize themselves into credible interest groups (professional associations, academic unions, students' unions, labour unions, non-governmental organizations,

etc) that constantly review government policies, articulate the positions of the general population, and engage elected officials in public debates regarding the rationale and impact of their policies and programmes on the population (Natufe 2006).

However, Nigeria's political system is plagued by a number of problems: they range from gross mismanagement of government and the entronement of corruption as a national culture to the neglect of genuine socioeconomic development which has a negative implication on the level of political participation in the country. They also range from the monopoly of power by a few to the repression and oppression of the majority, especially in the Niger Delta which has led to inequality in the political structure especially in terms of political participation.

Political inequality is a distinct dimension of social stratification and a form of power inequality whose domain is all things related to political processes. It is a multidimensional concept – comprised of voice, response, and policy that occurs in all types of governance structures (Dubrow 2010). Inequality among a group of people has often been measured in terms of income (e.g. Awoyemi 2004, Oyekale *et al* 2006). High levels of inequality may create barriers that prevent the poor from equal political participation as the rich and consequently, from voicing their demands in equal weight to the rich high, it perpetrates high rates of social and political unrest, including political instability which, in turn, tend to hinder economic growth. Political inequality may comprise such phenomena as legal discrimination and limitation of citizenship rights, but the latter refers more precisely to the fact that, while in legal and formal terms political equality is a widespread fact, the effective use of

the political right to take part in politics is stratified in a way that closely corresponds to lines of social stratification such as gender, income, or education.

Gacitúa and Sojo (2000) further argued that democracy failures (in particular, clientism and corruption) have resulted in the exclusion of large sectors of the poor population from involvement in political life. Despite the commitment shown by many developing countries towards reducing inequality and poverty, there is lack of sufficient knowledge on how to design a holistic approach for addressing the issues (Clarke 2003). Unless distributional elements are included in developmental programmes and reforms, it will be difficult to solve human development crisis, which might also deter the development of the economy. Different aspects related to the social position of individuals, such as education, gender, or age, are elements present in any standard model to explain political participation. The fact that those from advantaged backgrounds participate to a larger extent in politics is indeed one of the most consistent findings of empirical research (Dalton 2002; Norris 2002; Parry *et al* 1992; Rosenstone and Hansen 1993; Verba, Schlozman and Brady 1995).

Political inequality dimension is thus important but it is often overlooked. Political and social policy decisions in developing countries are frequently determined by the interest of powerful families and large enterprises, which have considerable influence on government policies. This study therefore sets out to examine the extent of which individuals from different households participates in politics and decision making, the level of dispersion in participating in politics and decision making and the marginal contribution of within and between

political inequality to total political inequality.

3. Methodology

3.1. Data

The study used data collected by the National Bureau of Statistics (NBS) in 2006 on National Core Welfare Indicator Questionnaire Survey. A two-stage cluster sample design was adopted by the NBS in selecting respondents from each of the Local Government Area (LGA). The first stage involves the Enumeration Areas (EAs), while Housing Units (HUs) constituted the second stage. In each LGA, a systematic selection of 10 EAs was made. Ten HUs were then systematically selected per EA and all households in the selected HUs were interviewed. The projected sample size was 100 HUs at the LGA level. Overall, 77,400 households were drawn at the national level. Sampling weights were constructed for each sample, thus making the data representative. This study further stratified the data into rural and urban areas of the country. The whole data for the rural areas of the country which comprises of 59,567 households then served as the sample size for the study.

3.2. Analytical techniques

Generalized entropy (GE) was used to analyze the political inequality profile among households. The use of the GE class of measure allows the examination of the stability of the welfare rankings for different weightings (Justino 2004). The value of GE ranges from 0 to 1, with zero representing an equal distribution and higher values representing higher levels of inequality. For lower values of α , GE is more sensitive to changes in the lower tail of the distribution, and for higher values of α GE is more sensitive to

changes that affect the upper tail. The commonest values of use are 0,1 and 2, hence a value of $\alpha = 0$ gives more weight to distances between welfare attributes in the lower tail, $\alpha = 1$ applies equal weights across the distribution, while a value of $\alpha = 2$ gives proportionately more weight to gaps in the upper tail. The General equation for the GE is given as follows

$$GE_{(\alpha)} = \frac{1}{\alpha - \alpha^2} \left[\frac{1}{n} \sum_{i=1}^n \left(\frac{y_i}{\bar{Y}} \right)^\alpha - 1 \right] \dots\dots (1)$$

Following Litchfield (1999) the generalized entropy for political inequality respectively will be derived using the following equation given by:

$$GE_{(0)} = \text{Mean log deviation} \\ = \frac{1}{n} \sum_{i=1}^n \log \frac{y_i}{\bar{Y}} \dots\dots\dots(2)$$

$$GE_{(1)} = \text{Theil Entropy index} \\ = \frac{1}{n} \sum_{i=1}^n \frac{y_i}{\bar{Y}} \log \frac{y_i}{\bar{Y}} \dots\dots\dots(3)$$

$$GE_{(2)} = \text{Coefficient of variation} \\ CV = \frac{1}{\bar{Y}} \left[\frac{1}{n} \sum_{i=1}^n (y_i - \bar{Y})^2 \right]^{\frac{1}{2}} \dots\dots\dots(4)$$

Where y_i is the ratio of household members participates in politics and decision making either at the national, state, local, community or household level. \bar{Y} is the arithmetic mean of the ratio of household members that participates in politics and decision making either at the national, state, local, community or at the household's level, n is the number of units or individuals in the sample level of participation in politics and decision making of household i . The ratio of members that participates in politics and decision making were categorized into low, medium (average) and high following Mahmud *et al.*,

(2005). Households with less than 0.33 were categorized as having low level of participation in politics and decision making; households with 0.34-0.66 were categorized as having average/medium access participatory ratio in politics and decision making while households having participatory ratio in politics and decision making that is greater than 0.66 were categorized as high.

Shapley decomposition was used to estimate the contribution of within and between political inequality to the total political inequality following Duclos and Araar, (2006). The application of Shapley decomposition value involves two steps where the basic rules followed to compute the marginal contributions of each of the factors are: Firstly, to eliminate the within-group inequality and to calculate between-group inequality. This is done by using the vector of ratio of household members that participates in politics and decision making in which each observation is assigned the average ratio of participation in politics and decision making activities $\mu(k)$ of the observation's group k ; Secondly, to eliminate between-group inequality and to calculate within-group inequality, use was made with a vector of political inequality where each observation has its level of participation in politics and decision making multiplied by the ratio $\mu(k)/\mu$ of its group k .

Precisely, let an inequality index I depend on the ratio of participation in politics and decision making of individuals, in $k = 1, \dots, K$ groups, each group with $n(k)$ individuals. Let $e(k)$, $h(k)$ and $p(k)$ be the $n(k)$ -vector of ratio of participation in politics and decision making activities of group k . Total inequality I can then be express total as a sum of between- and within- group inequality given by:

$$I(P) (1 \dots n(K)) = I_{\text{between}} + I_{\text{within}} \dots \dots \dots (5)$$

To compute the contribution of between-group inequality, we compute the fall of inequality observed when level of participation in political and decision making process of the group is equalized. This can be done either before or after within-group inequality has been removed. Hence, the Shapley contribution of between-group inequality for political inequality is given as:

$$I_{\text{between}} \text{ for Political inequality} = 0.5 \{ (I(1), \dots, p(K)) - I(\mu / \mu(1).p(1), \dots, \mu / \mu(k).p(K)) + I(\mu(1).1(1), \dots, \mu(K).1(K)) - 0 \} \dots \dots \dots (6)$$

Where $1(k)$ is a unit vector of size n_k . The within-group contribution is then given as:

$$I_{\text{within}} \text{ for political inequality} = 0.5 \{ (p(1), \dots, p(K)) - I(\mu / \mu(1).p(1), \dots, \mu / \mu(k).p(K)) + I(\mu(1).1(1), \dots, \mu(K).1(K)) - 0 \} \dots \dots (7)$$

The second step consists in decomposing total within-group inequality as a sum of within-group inequality across groups. To do this, we proceed by replacing the ratio of household members that participates in politics and decision making of those in a group k by $\mu(k)$ in order to eliminate group k 's contribution to total within-group inequality. The fall in inequality induced by this equalization of level of participation in politics and decision making is the contribution of group k to total within-group inequality. This was computed for each group. Given that this computation depends on the sequence ordering of the groups, the average contribution of a group k over all possible orderings of groups was computed. This gives the Shapley value of group k 's contribution to total within-group inequality of political inequality.

4. Results and discussion

4.1. Participatory ratio in politics and decision making

Table 1 presents the ratio of household members that participates in politics and decision making in the rural areas of the country. The result shows that the level of participation in politics and decision making in the country is generally low with majority (90.8%) of households in the rural households having low participatory ratio in politics and decision making either at home, community, local, state or national level ranging between 0-0.33 with the North

Central Zone having the least percentage (86.2%), and the South South Zone having the highest percentage (95.9%) of rural households with low level of participation in politics and decision making. High level of political participation in politics and decision making in the northern region of the country have been documented in by Mustapha (2004). His study showed that the dominance of the northern region in the political system has been based on the pre-colonial experience of the Sokoto Caliphate, while the Hausa-Fulani are said to be schooled in the art of managing power, and so tasked with the responsibility of political leadership.

Table 1: Ratio of participation in politics and decision making

Geo-political zones	0 – 0.33 (Low)	0.34 – 0.67 (Average)	> 0.67 (High)
North West	89.2	8.8	2.0
North Central	86.8	10.2	3.0
North East	88.9	10.7	0.4
South East	91.2	9.8	-
South West	92.9	7.1	-
South South	95.9	4.1	-
Total	90.8	8.4	0.8

4.2. Political inequality profile among rural households in Nigeria

Table 2 presents the result of the political inequality profile among rural households in Nigeria. The result shows that the level of dispersion in the ratio of households members that participates in politics and decision making across the

mean (Ge_1) of rural households in Nigeria is 0.1960. Across the geo-political zones, it is highest in the South East Zone and least in the North Central Zone with indices of 0.2173 and 0.1946 respectively. The Ge_0 shows that across the geo-political zones, political inequality is highest at the lower tail in the South East zone and lowest in the

Table 2: Political inequality profile among rural households in Nigeria

Geo-political Zones	Ge ₀	Ge ₁	Ge ₂
North West	0.2085	0.1957	0.0866
North Central	0.2103	0.1946	0.0785
North East	0.1950	0.1954	0.0806
South East	0.2215	0.2173	0.1079
South West	0.0700	0.2128	0.0951
South South	0.1033	0.2099	0.0933
Total	0.1681	0.1960	0.0972

South West Zone for the rural areas with indices of 0.2215 and 0.0700 respectively. The result further shows that in terms of dispersion at the upper tail (Ge₂), political inequality is lowest in the North Central zone with an index of 0.0785 for households in the rural areas of the country while the South East zone has the highest political inequality with an index of 0.1079 for the rural areas of the country. The result of the study is consistent with empirical research that the Northern's are more involved in political participation in the country (Yahaya, 1994).

4.3. Marginal contribution of within and between political inequalities to total political inequality

The result of marginal contribution of within and between political inequalities to total political inequality as presented in Table 3 indicates that within inequality among the two gender group's accounts for 98.2% of the total political inequalities for rural households in the country with the male group contributing 79.9% of the total political inequality. Decomposition of political inequality into within and between group marginal contributions by household size also indicates that disparity within the different household size group is the cause of political inequality. The result shows that 94.8% of total political

inequality can be attributed to differences within household size groups for the rural with rural households that consist of about 6 to 10 members accounting for 56.2% of the total political inequality. Rural households with more than 10 members contribute the least percentage (4.9%) to the total dynamics in the ratio of household members that participates in politics and decision making. Political inequality among rural households when decomposed by age shows that political inequality is more as a result of dynamics within the various age groups and it accounts for 95.8% of the total political inequality. Rural households whose household heads are between 31 and 60 years of age contributes 53.1% of the total political inequality. In addition, rural households whose household heads are not older than 30 years of age contributes the least percentage (7%) to the total political inequality. Decomposition of political inequality by marital status into the within and between group contribution shows that 97.4% of the total political inequalities is attributed to differences within the different marital status groups.

The result of the Shapley inequality decomposition shows that disparity within the geo-political zones accounts for 95.2% of the total dynamics in the ratio of household members that participates in politics and decision making. The result further shows that rural households in the South East zones contributes the highest percentage (29.3%) to the total political inequality while rural households in the North Central zone contributes the least percentage (7.9%) to the total dynamics in the participatory ratio of household members in politics and decision making. The Shapley political inequality decomposition results conforms to the outcome of Baye (2005) that also

Table 3: Marginal contribution of within and between group inequality to total political inequality

Socio-economic variables	Gini	Between	Within	Intra group Decomposition
Gender	0.2195	0.0040 (1.8)	0.2155(98.2)	Male: 0.1755(79.9) Female: 0.0400 (18.3)
Household size	0.2184	0.0114 (5.2)	0.2069 (94.8)	<6: 0.0734 (33.6) 6-10: 0.1228 (56.2) >10: 0.0108 (4.9)
Age	0.2358	0.0100(4.2)	0.2258(95.8)	< 30: 0.0164 (7.0) 31-60: 0.1253(53.1) > 60: 0.0841 (35.7)
Marital status	0.2207	0.0057 (2.6)	0.2150 (97.4)	Single: 0.0012 (0.6) Monogamous: 0.0475 (21.5) Polygamous: 0.1080 (48.9) Informal: 0.0050 (2.2) Divorced: 0.0534 (21.4)
Location	0.2212	0.0105 (4.8)	0.2107 (95.2)	North West: 0.0354 (16.0) North East: 0.0354 (9.6) North Central: 0.0213 (9.6) South East: 0.0648 (29.3) South West: 0.0400 (18.1) South South 0.0317 (14.3)

Note: Figures in parenthesis are percentage

indicated that inequality is attributed to differences within groups than as a result of differences between groups and that inequality within groups is the most important aspect of inequality.

5. Conclusion and recommendation

The outcome of the study showed that majority of rural households have low participatory ratio in politics and decision making either at the household, community, local, state or at the federal level. The result further showed that the level of inequality in the ratio of household members that participates in politics and decision making is generally low with the South East zone having the highest political inequality while the North Central zone had the least incidence of political inequality. The result further showed that dynamics within various socio-demographic group contributed the highest percentage to total inequality with household head being female, household consisting of 6-10 members, household head between 31-60 years of age, and residence in the South East zone. There is therefore the need for the need for political reform in the country by all stakeholders and development partners to remove violence, corruption and rigging from the political system in order to increase the level of participation of households in politics and decision making. In addition, there is the need to sensitize households on the importance of their participation in politics and decision making in the policy formulation and implementation processes. This is pertinent because without a stable political environment the country would not be able to attain the projected growth rate and actual its Millennium Development Goals.

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