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Analysis of Women Empowerment in Rural Nigeria: A Multidimensional Approach

Olufemi A. Popoola[1]

[1] University of Ibadan, Nigeria

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Abstract

This study assessed the empowerment status of women in Rural Nigeria. Following Alkire and Foster (2007) multidimensional poverty measure, we constructed the multidimensional women empowerment index across selected dimensions and indicators using the 2013 Demographic and Health Survey data (DHS). The logit regression was used to profile its determinants. The multidimensional women disempowerment index was 0.427. The study finds that when the empowerment cutoff k=2, approximately 43

Index terms— women empowerment, alkire and foster, logit, rural, nigeria.

1 I. Introduction

enewed and emerging consensus from global and continental institutions, policy makers and the society at large show that rural development and transformation is essential to pushing the African continent forward **??**NEPAD, 2001; **??**orld Bank, 2007 **??** 2012a; **??**CBF, 2012). Agriculture plays a focal point in this development because it is a central source of employment and a catalyst in the GDP and wealth creation process in many African countries including Nigeria (World **??**ank, 2007; Chuhan-Pole and Angwafo, 2011; World Bank, 2012a). The National report for 2004 United Nations Conference on Environment and Development indicates that at least 40% of Agricultural production activities and 85% of agricultural produce, processing and marketing are performed by women.

Women have a predicament that is quite appalling, they constitute the majority of the poor and the illiterate in both urban and rural areas in Nigeria, whose productive roles are regarded as part of their domestic roles (Egbugara, 1990), categorized as a homogenous group distinguished only by their gender. Men still make most of the key management decisions despite the fact that women make up to 60 to 80 % of the agricultural labour force in Nigeria and produce two third of the food crops (Mahmood, 2001,World Bank, 2003; **??**gunlela and Muktar, 2009). Women are most times ignored, underestimated and voiceless in influencing production and management decisions even within the household (Ogunlela and Muktar, 2009). When women lack access to land, they are not eligible for credit, membership of farmers' organizations, extension training and services (ICRW, 2013), their heavy workloads and lack of improved inputs also hinder them. In Nigeria, their participation is yet to be fully appreciated **??**Abiola and Omoagugan, 2001). Women are also less educated compared to men in Nigeria, disease ridden and occupy the lowest social, political and economic status (Fabiyi et al., 2007).

Government and key players show no sufficient will to meeting the needs and interests of women. In Nigeria, despite several policies and laws supporting gender equality, these have not translated into better living and working conditions for women. National development is being hampered by excluding the perspectives, skills, capabilities and dynamism of half the population seeing that women constitute a crucial group in the productivity equation (Emansion, 2012). This is reinforced by IFAD's framework (2012:8) which posits that rural development "programs are more relevant and sustainable if both men and women are able to participate in rural institutions and express their needs and priorities in decision-making processes". Given that these disparities and inequalities run through rural systems, action is required at all levels from household and community up to national, regional and international levels.

Several studies have explored empowerment of women through education, increasing credit access, empowerment interventions through cooperatives, microfinance among others (Kabeer, 2005;Fapohunda, 2011, DFID, 2014, Ekundayo and Ama, 2014). This paper examines critically and identifies the several dimensions and key indicators of rural women empowerment, capturing empowerment as a multidimensional process (Ibrahim and Alkire, 2007). This makes it relatively easier to target urgent areas for intervention and policy making. It thus provides a clear understanding of the concept of women empowerment and proves useful in providing information that will be helpful in designing programmes and interventions that are gender responsive, addressing the felt needs and aspirations of women in rural Nigeria. This will be more effective and contribute immensely to overall better living conditions for rural women, agricultural growth and fulfillment of the sustainable development goals (SDGs) or empowering women.

2 a) Objectives

The main objective of the study is to empirically examine the empowerment status of women in rural Nigeria. Specifically, the paper intends to

? Identify activities engaged in by rural women ? Estimate the empowerment status of rural women ? Assess the effect of rural women socioeconomic characteristics on the empowerment status.

3 II. Literature Review

Empowerment is recognized in this paper as a multidimensional process. That is, a woman may be empowered in one area or aspect of life but not in other(s) (Kishor 1995 **??**Kishor , 2000b)). Therefore one cannot assume that because an intervention promotes empowerment along a particular dimension, then empowerment in other dimensions must follow suit. It may or may not. It recognizes the poor state of women, their subordination, intimidation, inequalities in decision making, inability to own or control productive resources, lack of education or other required training needed to improve on their personal capabilities, unpaid employment and theorizes that economic empowerment cannot but cut across several dimensions and key indicators. This paper adapts an integrated hypothesis and draws from the Women Empowerment in Agriculture index (WEAI) framework formulated by Alkire et al., (2013).

The Canadian International Development Agency (CIDA, 1997), describes empowerment in general terms to mean a process by which powerless people become conscious of their own situation and collectively organize themselves to gain greater access to public services or the benefits of economic growth.

Eyben et al.,2008 posits that when women are economically empowered, it means that there is an increase in their access to economic resources and opportunities. FAO (2011) estimated that if women had the same access to productive resources as men, their increased yields could raise total agricultural output in developing countries by 2.5 to 4 percent, which could in turn reduce the number of hungry people in the world by 12 to 17 percent. Conversely, Goldstein and Udry (2008), found that the lack of tenure security in Ghana led women farmers to invest less in soil fertility, resulting in substantially lower profits per hectare for women's plots, when compared to men's. Mason and Smith (2003) examined women empowerment and social context in five Asian countries. In empowerment, they looked at women's say in household economic decisions, their say in family-size decisions, and women's freedom of movement, and their exposure to coercive controls by the husband. They found that community can explain more variation in women's empowerment than their personal and household characteristics. Within countries, they found that two thirds or more of the variation in women's empowerment between communities can be explained by gender norms. They also establish that female empowerment is multidimensional, where women can be empowered in some aspect and not in others.

Garikipati (2008) using a 2SLS tobit-logit regression to measure Indian women's empowerment in terms of household decision making and ownership of assets and income. The study revealed that women's secondary education, household wealth status, and women's participation in a microcredit program are significant determinants of empowerment. Surprisingly, however women's participation in microcredit programs showed a negative effect. Allendorf (2007a) investigated the impact of female agricultural workers' land rights on their empowerment in Nepal. Also measuring empowerment by women's participation in household decision making with ordinary Least Squares (OLS) and logit estimations, the study revealed that women's ownership of land or livestock, effective land or livestock rights, and receipt of pay for work promote empowerment. Women's age and education also exhibited expected but relatively weak empowerment effects. In addition, the position of a woman within the household structure seems to be particularly important for her empowerment in terms of her participation in household's decision making.

Women will be better off when educated, enabling them to have higher self-confidence and better equipped to handle challenges. Access and control over productive resources will increase and improve agricultural productivity (World **??**ank, 2012). Ability to control their earnings will give women a voice and a vote in household decisions **??**Blumberg, 1987). Overall women economic empowerment is both a right and smart economics (OECD, 2012).

Anderson and Eswaran (2009), applying a 2SLS approach found that value of woman's assets, woman's earnings from work, and the time a woman worked for income have positive impact on empowerment. Anderson and Eswaran (2007) also reported that earned income rather than asset ownership is more important in empowering

women, noting that it is not employment per se but employment outside their husbands' farms that contributes to women's empowerment. Qurra et al.,

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(C) **??**2015) showed that women who are more empowered tend to have or be associated with smaller family sizes, especially when they are educated. Their study found a negative and significant effect of household size on women empowerment stating that the larger the family size, the more disempowered the woman became as the less likely she is to take part in the decision making process and therefore, enjoy somewhat less empowerment.

This study adapts a framework that cuts across economic empowerment in four dimensions in agriculture, taking note of the multidimensional nature of the process of empowerment. As presented below, when rural women are economically empowered, there will evidently be reduction in constraints that hamper their economic emancipation, improvement in gender equality as well as overall economic development. To adequately capture rural women economic empowerment, selected indicators can be used as proxies to measure the different dimensions of economic empowerment. These dimensions include production/income, resource, education and time use (Alkire et al., 2013).

5 Methodology a) Scope of study

Nigeria is located in the African continent, the most populous country in Africa. Nigeria is made up of 36 states, and a federal capital territory (FCT), grouped into six geo-political zones: North central, North East, North West, South East, South South and South West. The study area is rural Nigeria. Nigeria has a population of more than 160 million -the largest in Africa -and a fast-growing economy. Agriculture is the mainstay of the economy, contributing more than 40% of the annual gross domestic product (GDP) and employs about 70% of the labour force in Nigeria **??**NBS 2007 **??**CBN 2006). It is also responsible for more than 70% of non-oil exports and most importantly supplies more than 80% of the food needs of Nigerians (Adegboye, 2004; NBS, 2014).

6 b) Source and Type of Data

The study used secondary data from the Nigeria's 2013 Demographic and Health Survey (DHS). Data on women from the ages of 15 to 49 years were used. Data was collected on decision making in the household, access and control over productive resources, time use, income and educational attainments. Data on demographic characteristics of household heads and their spouses were also used. The Nigeria demographic and Health survey is a national sample survey that provides up to date information on background characteristics of the respondents.

7 c) Analytical Techniques

Descriptive statistics was used to identify activities of women in rural Nigeria as well as theirsocioeconomic characteristics i. Alkire and Foster Methodology Alkire and Foster's (2007) methodology includes two steps: an identification method (? k) that identifies 'who is empowered' by considering the range of dimensions in which they are empowered, and an aggregation method that generates an intuitive set of disempowerment measures (M?) (based on traditional FGT measures) that can be broken down to target the most empowered and the dimensions in which this occurs.

Let y= [y ij] denote the n x d matrix of achievements, where n represents the number of respondents, d is the number of dimensions, and y ij ? 0 is the achievement of respondent i= 1, 2?..,n in dimension j= 1,2,?d. Each row vector y i = yi1, yi2,?.,y id lists respondent i's achievements, while each column vector y ? j = y 1j, y 2j, ?.y nj gives the distribution of dimension j achievements across the set of respondents.

Let z j > 0, denote the cutoff below which a respondent is considered to be disempowered in dimension j and let z be the row vector of dimension specific cutoff. The expression |v| denotes the sum of all the elements of any vector or matrix v, and ?(v) represents the mean of |v|, or |v| divided by the total number of elements in v.

For a given matrix of achievements y, it is possible to define a matrix g 0 = [g ij 0] whose typical element g ij 0 is defined by g ij 0=1 when y i <zj, while g ij 0 = 0 otherwise. Hence, g 0 is a n x d matrix whose ij th entry is 1 when respondent i is empowered in dimension j, and 0 otherwise according to each dimension cutoff zj. From this matrix, we can construct a column vector c of empowerment counts, whose i th entry c= |gi 0| represents the number of empowered dimensions enjoyed by respondent. Notice that the matrix and vector can be defined for any ordinal and cardinal variable from the matrix of achievements y.

Following Alkire and Foster (2007), the vector c of disempowerment counts is compared against a cutoff k to identify the disempowered, where k = 1?d. Hence, the identification method ? is defined as ?k (yi;z) = 1 whenever ci ? k , and ?k(yi;z) = 0 whenever ci < k . Finally, the set of respondents who are multidimensional disempowered is defined as Zk= {i : ?k(yi;z)}. In other words, the method identifies as disempowered any respondent who is disempowered in more than k number of dimensions. Alkire and Foster (2007) refers to ?k as a dual cutoff method because it first applies the within dimension cutoff z j to determine who is disempowered in each dimension, and then the across dimension cutoff k to determine the minimum number of achievements for a respondent to be considered multidimensional disempowered.

The first measure to consider is the headcount ratio or the percentage of respondents that is disempowered. The headcount ratio H= H(y;z) is defined by: H=q/n Where q= q(y;z) is the number of respondent in the set z k

, as identified using ? k the dual cutoff method. Alkire and Foster (2007) proposed a headcount measure that is adjusted by the average number of achievements being experienced by the respondents. To this end, a censored vector of disempowerment counts c(k) is defined so that if c i ? k, then ci(k) =ci ; and if c i< k, then ci(k) =0. This is to say that in c(k) the count of categories is always one for those respondents that are disempowered according to the ?k dual cutoff method. Then, c i (k)/d represents the shared possible dimensions experienced by a respondent, and hence the average dimensions shared across the disempowered is given byA = |c(k‘qd) 22 (C)

By focusing on the disempowered, the Alkire -Foster approach allows computing a final adjusted Head count ratio that satisfies the properties of decomposability and disempowerment focus. The (dimension) adjusted headcount ratio M o (y;z) is given by: M o = HA Or simply the product of the headcount ratio H and the average disempowerment dimensions shared across A. The (dimension) adjusted headcount ratio clearly satisfies dimensional monotonicity, since A rises when a rural respondent becomes disempowered in an additional dimension (Alkire and Foster 2007).

An attractive property of M o is that it can be decomposed by population decomposition obtained by:M o (x,y;z) = n(x) M o (x;z)+ n(y) M o (y;z) n (x , y) n(x,y)

Where x and y are the distribution of two subgroups (x,y), the distribution obtained by merging the two; (n(x) the number of respondents in x ,n(y) the number of respondents in y , and n(x,y) the number of respondents in n(x,y) . In other words, the overall disempowerment is the weighted average of subgroup disempowerment levels, where weights are subgroup population shares. This decomposition can be extended to any number of subgroups. In addition, it is also possible to break down overall multidimensional economic disempowerment measure to reveal the contribution of each dimension j to it. Once the identification step has been completed a censored matrix of achievements g o (k) is defined whose typical entry is given by g oij (k) = g ij 0 for every i satisfying c i ? k , while g oij (k) for i with c i< k . Then, M o (y;z) can be breakdown into dimensional groups as: M 0 (x,z) = ? j ? (g 0 j 0 (k))/d. Consequently, (1/d) ? (g 0 j 0 (k)/M 0 (y;z) can be interpreted as the post-identification contribution of dimension to overall multidimensional disempowerment.

ii. Selected Dimensions and Methods of Evaluation

8 ? Production/Income

This empowerment dimensionis subdivided into three; input in productive decisions, autonomy in production, and control over use of income/expenditure. To measure this dimension, these variables were used; person who should have greater say on large household purchases, person who usually decides on what to do with money respondent earns, person who usually decides on what to do with money respondent's spouse earns. This is based on the premise that all earnings from an agricultural household are from engaging in one agricultural activity or the other identified from the various agricultural sectors being engaged in by them. A value of 1 is given to a sole or joint involvement in any of the decision variables, and 0 if otherwise. The respondent is considered empowered in this dimension if she has a value of 1 and disempowered if the value is 0.

9 ? Resource

Also subdivided into ownership of assets, purchase, sale or transfer of assets, access to and decisions on credit, this dimension seeks to compare access to and control over household and productive assets between men and women in the same households. A value of 1 was given to single or joint ownership of assets such as house, land, earns more than spouse and 0 if the respondent does not have single/joint ownership over these variables or earns less than the spouse. A respondent is said to be empowered having obtained a value of 1 and disempowered if otherwise.

10 ? Education

This dimension was included as a result of the peculiarities of the study area as well as the source and type of data available for the study. From literature, one can attest to the overall and very significant effect of education on the economic empowerment of individuals in agricultural households, Kishor et al., (1999).

Empowerment in this dimension was measured by their education in single years and literacy. While evaluating the functioning of education, With respect to education in single years, a value of 1 was assigned to women with a minimum of nine years of education and 0, otherwise. Women who can read part of a sentence or a whole sentence are regarded as literate. A value of 1 was assigned to women who are literate and 0, otherwise.

11 ? Time Use

This dimension seeks to capture the time used for work both productive and domestic and the available time left for leisure activities. Its indicators include workload and leisure. Variables used to capture leisure are frequency of watching television, listening to radio, reading newspapers, person who makes decisions on visitation to family or relatives. For the workload indicator, variables used are time to source of water, employed all year or seasonal. For frequency of watching the television, reading newspapers and listening to the radio, a value of 1 was assigned to a respondent who does these less than once a week or at least once a week and 0 otherwise. A value of 1 was attached to a respondent who makes the decisions on visitations on family or relatives and 0, otherwise. For time

to source of water, a respondent who spends not more than thirty minutes to the source of water is gets a value of 1 and 0 if the respondent spends more than thirty minutes. The respondent is said to be empowered if she gets a value of 1 and disempowered if the value is 0. Household heads are predominantly male-headed (84.54 percent) as against 15.46 percent of female headed households. This is similar to the findings of Makama (2013). It is revealed that 68.64 per cent of women in rural areas are within the age range of 15 to 34 while 31.06 percent are above the age of 34 years with a mean age of 29±9.72 years. This implies that most rural women are still in their active years and a virile labour force. Most rural women are married or living together (77.10%), while about 4.68 percent of rural women is widowed or divorced. Households have predominantly between one and five persons **??**46.76 per cent) with a mean household size of 6±3.61. Almost half of the women have no formal education (49.90%). This is in line with the findings of Odili et al., (2000), that demand for female education is still very low. The women are mostly engaged in services (34.39%) and agriculture (16.04%). These are the subsectors where low skill can be applied in the rural area. This is similar to the findings of Adeoti and Akinwande, (2013). A higher percentage (61.72 per cent) of rural women are illiterate as they cannot read at all while about 30.86 per cent are able to read a whole sentence. The dimensions and indicators of multi dimensional economic empowerment of rural women presented in Table 4. It is seen that decisions on large household purchases are taken by respondents' spouses (66.67%), however respondents jointly take decisions on how their earnings are spent (88.57 %) signifying that they have a say in this indicator. With regards to resource, only about 18% of rural women own land which is quite poor, especially because of the importance of land as a factor of production. Rural women own houses even less (16%) indicating the predominance of ownership of productive assets by their spouses. In the education dimension, majority of the rural women had less than nine years of education (77%) while only 25% had more than primary education. Under the time Use dimension, rural women do not chiefly make decisions on who or when to visit, as 52.27 percent of the time this decision is taken by their partners. They listen to the radio less than once in a week showing how little time they spend on leisure. They however are seen to spend less than thirty minutes in getting to the source of water (65.19 %). Rural women have limited decision making capabilities on large household purchases, own very little productive resources, have little or almost no formal education, can barely read a sentence and have little or no say as regards the use of their time. This section presents rural women economic empowerment estimates based on the Alkire and Foster (2007) dual cutoff approach. Economic empowerment is conceptualized as multidimensional and its estimates are based on four dimensions: Production/Income, Resource, Education and Time Use with equal weights assigned. The Multidimensional Women empowerment Index for all the women is obtained by aggregating across indicators and dimension. The first cutoff ascertains a woman's achievement in a dimension/indicator and a second cutoff k, was set which states the number of dimensions in which a woman has achieved to be considered multi dimensionally disempowered. Table 5presents the estimated disempowerment index based on the value of the cutoff. It is observed from the table that the disempowerment measures decreases with the level of k. This agrees with the findings of various studies that have employed the Alkire and foster multidimensional process measure. (Batana, 2008;Gordon et al., 2003;Adeoti and Popoola, 2012). Rural women incidence of multidimensional disempowerment decreases as k increases. For instance, taking the headcount ratio H, 93% of rural women are disempowered when the sum of the weights of the cutoffs k experienced by the women equals 1, compared to 62.95 for k=2, 35.6% and 9.3% of rural women are disempowered at k=3 and k=4 respectively. As well, the intensity of disempowerment also shows that the share of dimensions in which rural women are disempowered increases with k. The relative contribution of the various dimensions to women disempowerment is shown in table 6 which reveal that the highest contribution is from resource dimension with 38.36% at K= 1. This is followed by the education dimension with 30.99% at k= 1 while production/income contributed least with 12.53 %. At the cut off taken for this study at k=2, education contributes highest to the economic empowerment of rural women and production/income still comes as the least contributor (14.15%). This is similar to the findings of Qurra et al.,(2015) that showed a positive and significant effect of education on women's empowerment in India. This also agrees with studies that have observed that when women are educated, have equal access to productive resources and can independently take decisions, they are economically empowered. (FAO, 2011) The decomposition of disempowerment rural women by gender of the head of household for cutoff at k=2 as presented in table 7a shows that women in male headed households are more multidimensional disempowered (47.0) compared to households headed by females (18.7 %). Also, the intensity of rural women disempowerment is higher in male headed households relative to female headed ones, 68.5 percent and 59.6 percent respectively.

12 (C)

Table 8 presents the relative contribution by region using disempowerment line at k=2 which is 0.43. Disaggregating across the regions, the result shows that rural women in the south east are more empowered than in other regions, even though it can be seen from the descriptive statistics that those sampled from the region are 6.07%. This shows the high level of empowerment across the various dimensions by the rural women in this zone. The determinants of women empowerment in rural Nigeria is presented in Table 9. The disempowerment index at k=2, which is 0.427 was taken as the disempowerment line to classify rural women into empowered and disempowered. The columns present the coefficients and their marginal effects. The diagnostic statistics reveal that the model has a log likelihood ratio ??2 (2199.74) significant at one per cent. This shows that the model is a good fit.

13 i. Individual-level factors

The results for individual factors show that age of rural women significantly affect their empowerment status. There was a positive relationship between age of women and the probability of being empowered. This shows that as rural women's age increases, the probability of being empowered also increases **??**25-34, 35-49 years). This is validated by the findings of Qurra et al., (2015), where their findings revealed an increase in empowerment status of women in India as their ages increase. The estimated marginal effect shows that the likelihood of a rural woman being empowered within the age of 35-49 increases by 0.15 percentage points. Also, with regards to relationship to household head, being a spouse or partner to the head significantly influences the empowerment of rural women though negatively at 1%. The results reveal that being a partner is likely to reduce the empowerment of a woman in rural Nigeria. The marginal effect reveals that the probability of being empowered is decreased by 0.15 percentage points. As well, employment in skilled and unskilled occupations was positive and significant at 1%, it increases the likelihood of empowerment by 0.05 percentage points. However being engaged in agriculture and allied activities was negative and significant at 1%. This means that employment in this sector reduces the probability of rural women being empowered by 0.1 percentage points.

ii. Household-level factors Household size (6-10 and greater than 10 members) were negatively and statistically significant at 1%. This implies that large household sizes reduce the empowerment of rural women, reducing the likelihood of empowerment by 0.08 and 0.1percentage points respectively. Also the age of the household head (25-34 years) was significant and positive at 5%. That is, women empowerment increases as age of household head ranges around the mean age range, especially as this is their active years. The likelihood of this increases by 0.05 percentage points.

14 iii. Environmental Factors

The probability of a rural woman being empowered increases with the woman being in the southern regions of the country and statistically significant at 1%. The north east and north west had a negative and significant coefficient at 1% meaning that the likelihood of being empowered in the north reduces by 0.3 percentage points. This is in contrast with the positive and significant effect with being in the southern regions and with a likelihood of increasing empowerment by 0.2 percentage points. This implies that the probability of a woman in rural Nigeria to be above the empowerment line increases from the North to the South. This shows a high marginal impact on the probability of a woman being economically empowered from a geographical location.

15 V. Conclusion and Recommendation

This paper assessed the incidence, intensity and determinants of economic empowerment of rural women in Nigeria. Rural women are mostly not empowered in two dimensions basically, production/income and time use. Multidimensional economic empowerment of rural women is relatively low and should be a matter of importance that concerned parties should note and address accordingly. The results also show that the highest contribution to multidimensional economic empowerment was from the education sector followed by resource, time use and the least contribution was from production/income. There were significant variations in the relative contribution of 29 (C) of rural women, education and two regions (south south and south west) increases the probability of rural women being economically empowered while on the other hand, gender of head of household, age of household head, household size reduce the probability of women being multidimensional empowered in rural Nigeria. Efforts should be directed at enabling rural women to be active participants in decision making concerning production and earnings. Also, actions to improve women's voice in the household must be combined with public anti-discrimination and anti-segregation policies targeted towards women so as to create better paid activities for the rural women and to construct systems that will support social protection, enforcement and advancement of women rights and achievements. The ability of women to have access and control over assets, to be able to earn a living will give them a voice and a vote in decisions taken in the household. This will self-confidence, harnessing their innate potentials to contributing massively to the sustainable development of the society. [1] [2]

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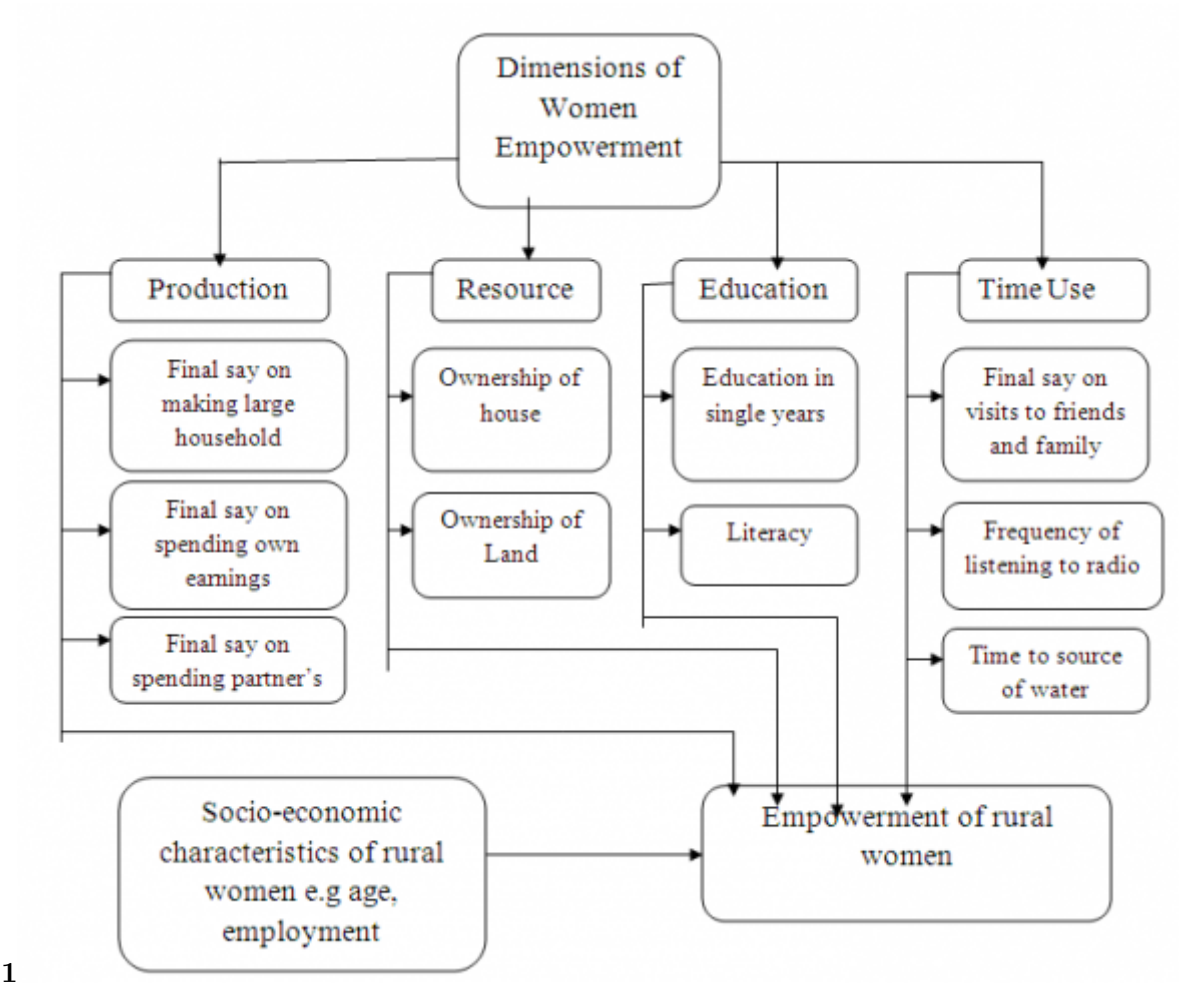

1

Figure 1: Figure 1 :

1

Dimension	Indicator	Definition of Indicator
Production/Income	Input in productive	Sole or joint decision making over food and cash crop farming,
(Udry 1996, Peterman et al.,(2011), Alkire et al.,(2007,2013)	decisions	livestock and fisheries
	Autonomy in production	Autonomy in agricultural production (for example, what inputs to buy, what crops to grow, what livestock to raise, and so on)(reflects the extent to which the respondent's motivation for decision making reflects his or her values rather than a desire to please others or avoid harm Sole or joint control over income and expenditure
	Control over use of income	
Resources	Ownership of assets	Sole or joint ownership of major household assets
(Doss et al.,(2011), Quisumbing et al.,(2011)	Purchase,	sale or Whether the respondent participates in decisions

2

24
(C)

Level	Factors	Categories
Individual factors	Age of respondents	1. 15-24(Young)
		2. 25-34(Middle)
		3. 3 5-49(Old)
	Relationship to head of household	1. Head
		2. Spouse/ Partner
	Employment(grouped)	1. Unemployed
		2. Skilled and Unskilled
		3. Agric and Allied
		4. Services
Household Level factors	Gender of household head	1 Male
		2 Female
	Household size	1 1-5 (Small)
		2 6-10 (Medium)
		3 Greater Than 10 (Large)
Environmental factors	Region	1 North central
		2 North East
		3 North West
		4 South East
		5 South South
		6 South West

Figure 3: Table 2 :

3

Characteristics	Frequency	Percentage
Gender of Household Head		
Male	13786	84.54
Female	2522	15.46
Age		
15-24	5957	36.62
25-34	5222	32.02
35-49	5114	31.36
Marital Status		
Never married/Never living together	2972	18.22
Married or Living together	12573	77.10
Widowed	410	2.51
Divorced or Separated	353	2.17
Household Size		
1-5	7625	46.76
6-10	6463	39.63
Above 10	2220	13.61
Education		
No Education	8137	49.90
Incomplete primary	1118	6.86
Complete Primary	2317	14.21
Incomplete Secondary	1991	12.21
Complete Secondary	2142	13.13
Higher	603	3.70
Employment		
Unemployed	6055	37.13
Skilled& Unskilled	2030	12.45
Agric & allied	2615	16.04
Services	5608	34.39
Literacy		
Cannot read at all	10066	61.72
Able to read only parts of a sentence	1129	6.92
Able to read a whole sentence	5113	31.35
N= 16308		

Figure 4: Table 3 :

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Women in Rural Nigeria Dimensions	Fr equency	Percentage (%)
Production/Income		
Decisions on Large Household Purchases		
Alone/Jointly	4191	33.33
Spouse/Partner	8382	66.67
Decisions on Earnings		
Alone/Jointly	6700	88.57
Spouse/Partner	865	11.43
Decisions on Partner's Earnings		
Alone/Jointly	3144	25.16
Spouse/Partner	9351	74.84
Resource		
Owns Land		
Alone/Jointly	3104	18.48
Spouse/Partner	13294	81.52
Owns House		
Alone/Jointly	2595	15.91
Spouse/Partner	13713	84.09
Education		
Minimum of Nine Years	3772	23.13
Less than Nine Years	12536	76.87
Can read at least part of or a whole sentence	6162	37.39
Cannot read at all	10146	62.21
Time Use		
Time to source of Water		
Less than thirty minutes	10632	65.19
More than thirty minutes	5676	34.81
Decisions on Visitation to family/Friends		
Alone/Jointly	5372	42.73
Spouse/Jointly	7201	57.27
Frequency of Listening to Radio		
At least once in a week or less	8655	53.07
Not at all	7653	46.93
c) Women empowerment estimates		

Figure 5: Table 4 :

5

Disempowerment cut-off (K)	Multidimensional Economic disempowerment index (Mo=HA)	Multidimensional Headcount (H)	Intensity of disempowerment (A)	Empowerment index
1	0.502	0.931	0.539	0.498
2	0.427	0.629	0.679	0.573
		0.356	0.815	0.71
4	0.093	0.093	1.000	0.907

Figure 6: Table 5 :

6

Dimensions	Production/Income (%)	Resource (%)		Education (%)	Time (%)
K=1		12.53	38.36	30.99	18.11
K=2		14.15	31.61	33.59	20.66
K=3		16.80	28.07	29.92	25.22
K=4		25.00	25.00	25.00	25.00

e) Decomposition by Gender of Household Head

Figure 7: Table 6 :

7a

	Disempowerment cutoff K=2		
Gender	Mo	H	A
Male	0.470	0.686	0.685
Female	0.187	0.314	0.596

Male headed households contribute 92.3 percent to the economic disempowerment of women in rural Nigeria, definitely higher than the contribution of female heads which is 68 percent as shown in t below.

Figure 8: Table 7a :

7b

Relative Contribution at k=2			
Gender	Mo	H	A
Male	0.923	0.923	1.000
Female	0.068	0.077	0.883

Figure 9: Table 7b :

8

Region	Empowered (%)
North Central	44.72
North East	20.94
North West	12.06
South East	76.26
South South	72.05
South West	62.77

Figure 10: Table 8 :

9

Variables	Coefficients	Marginal Effects
Individual Factors		
Age(years)		
25-34	0.5198***	0.1188***
	(0.0909)	(0.0209)
35-49	0.6666***	0.1515***
	(0.1070)	(0.0243)
Relationship to Head		
Head	-0.3344	-0.0716
	(0.2043)	(0.0413)
Spouse/Partner	-0.6493***	-0.1544***
	(0.1508)	(0.0370)
Respondent's Employment		
Skilled & Unskilled	0.2217***	0.0509***
	(0.0746)	(0.0174)
Agric & Allied	-0.4714***	-0.1007***
	(0.0723)	(0.0146)
Household Factors		
Gender of Household Head		
Female	-0.2108	-0.0462
	(0.2085)	(0.0442)
Household Size		
6-10	-0.3868***	-0.0861***
	(0.0643)	(0.0141)
>10	-0.5714***	-0.1193***
	(0.0987)	(0.0188)
Age of Household head(years)		
15-24	-0.3257	-0.0695
	(0.2031)	(0.0407)
25-34	0.2359**	0.0542**
	(0.1069)	(0.0250)
35-49	0.0529	0.0119
	(0.0745)	(0.0168)
Environmental Factors		
North East	-1.2258***	-0.2312***
	(0.0923)	(0.0140)
North West	-1.8874***	-0.3642***
	(0.0857)	(0.0130)
South East	1.1787***	0.2853***
	(0.1259)	(0.0298)
South South	1.0166***	0.2439***
	(0.0878)	(0.0213)
South West	0.5871***	0.1397***
	(0.0932)	(0.0230)
Constant	0.2247	
	(0.1692)	
LR chi2(17) = 2199.74		
Log likelihood = -3873.904		
Pseudo R2 = 0.2211		
	Standard error in brackets; ***P<0.01 **P<0.05 *P<0.1	

Figure 11: Table 9 :

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