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The Head Corner Stone: Human Centred Policies as Panacea to Poverty in Nigeria

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Abstract:

Over the years, Nigeria's efforts to reduce poverty were unsuccessful. Policies such as the National Economic Empowerment and Development Strategy (NEEDS) and Poverty Reduction Strategy Paper (PRSP), prepared in consultation with stakeholders and development partners, including the World Bank and the IMF, with a focus on growth and development towards poverty reduction, were described as failures. The view of this paper is that to develop policies for poverty reduction, the human focus development is a better indicator of growth and development. Based on Nigeria's performance on human development continuum, the paper hypothesises that anti-poverty policies are deficient and in order to effectively reduce poverty the challenges to human development in the country should be identified and tackled. The paper proposes the use of systems thinking and complexity theory to identify and rank poverty factors. Fifty-three factors were identified from the literature and subsequently reduced to thirty-six. Using NETDRAW, a network visualization software within UCINETR, a Social Network Analysis (SNA) software, twenty poverty factors were found to be the most central to poverty network. And using the Analytical Network Process (ANP), these twenty factors were ranked to obtain the factors with the highest priority consideration; also called the 'poverty hub' factors. Removing these five factors from the poverty network made the network less dense, thus reducing clustering coefficient by about 20%. This indicates that only five factors contribute about 20% of the total poverty condition in Nigeria. Therefore, the paper suggests a pro-poor policy design to eliminate these five poverty hub factors.

Keywords: Economic growth, pro-poor growth, national development, human development, human development index, multidimensional poverty index

1. Introduction

Nigeria made several policies towards growth, development, and poverty reduction with little or no success. Some of these policies were developed with the help of stakeholders, including the International Monetary Fund (IMF) and the World Bank (WB). These policies include the Poverty Reduction Strategy Papers (PRSPs), the Millennium Development Goals (MDGs) and now, the Sustainable Development Goals (SDGs). Using the poverty growth curve, Ichoku, Agu, and Ataguba (2012) shows that poverty continues to grow in Nigeria despite the country's claim of economic growth. Despite the so-called economic growth, unemployment keeps on rising, poverty rate becomes higher, and industries close down. One therefore wonders whether the Nigerian economy is really serving the society, or are the assessors of the economic performance of the country measuring the wrong thing.

This paper submits that these policies do not serve the need of their designers and implementers because the initial conception was without much input from the people most affected by poverty. This paper, therefore, explores the essential things that matter most in the lives of the people as measures of development and calls for a shift from measuring economic production (GDP) or per capita income (GNI) to measuring people's well-being in the context of environmental and sustainability conditions (Stiglitz, Sen, & Fitoussi, 2010). As considered in this paper, well-being includes at least three elements: poverty, social exclusion, and vulnerability. This paper concentrates on poverty and proposes pro-poor anti-poverty policies to reduce poverty, emphasis on the measure people's well-being, and, therefore, shift the focus of poverty reduction strategy to improving people's quality of life.

Changing emphasis to measures of quality of life means working towards the development of a statistical system that will measure how adequate the economy captures people's well-being. This paper proposes some new ideas on the assessment of development and poverty reduction in Nigeria. With insufficient resources to fight poverty, the approach in this paper is to identify poverty factors and the web of relationships they formed. It is then possible to identify those factors that are centrally connected, rank them according to their impact to poverty, and develop policies to tackle them, thereby breaking or weakening the web.

As proposed by ul Haq (1995) based on Sen (1987) theoretical exposition, the ideas of development should be people-centred. This paper uses Human Development Index (HDI) promoted by the United Nations Development Programme (UNDP) to measure people-centred development. HDI have been used over time to rank countries in terms of human development since 1990 (UNDP, 1990). Nigeria has been lowly ranked on HDI scale over the years despite several

pronouncements about economic growth and poverty alleviation programmes (Obadan, 2001). This low-ranking calls for changes in the conception, understanding, and implementation of poverty reduction policies to sustainable anti-poverty policies (SAPP). The first step is the identification of poverty itself and subsequently its factors or drivers. This paper attempts to explore all the poverty factors and their drivers in Nigeria and subsequently identify the factors that are central or most connected. The elimination of these central factors will weaken the poverty web, or web of poverty disadvantages, thereby helping people in poverty overcome their situation.

The development of this paper is, therefore, guided by the following three questions. 1. What are the central factors that are responsible for poverty in Nigeria? 2. How can these factors be identified and ranked and 3. What anti-poverty measures are appropriate and that will be sustainable for these factors?

The paper is divided into eight parts. The second part of the paper reviews the literatures in the area, with a focus on meaning and measurement of poverty. Section three looks at anti-poverty policies in developing countries with special focus on Poverty Reduction Strategy Papers (PRSPs). Section four discusses the approaches to pro-poor human development policies, while section five reviews Nigeria's performance on the human development continuum. Section six introduces system thinking and complexity theory as new approaches to valuation and ranking of poverty factors and discuss the SNA and ANP methodologies and how these were used to determine the five most central poverty factors, or the 'poverty hub'. Section seven discusses the pro-poor policies that may be adopted by Nigeria to tackle the 'poverty hub', and section eight concludes the paper.

2. Literature Review: Meaning and Measurement of Poverty

Poverty is a persistent problem and continues to pose challenges to societies over time. The concept has different meanings and these differences depend on who is talking about it, to whom it is addressed, and at what time and circumstance. Thus, the definition of poverty should entail the underlying conception of the phenomenon, thus explaining why it is defined in different ways.

2.1. Meaning of Poverty

The simplest definition of poverty is the lack of means of survival (MacPherson & Silburn, 1997). Even this simple definition requires further specification or explanation of terms. For example, what means is lacking and to survive in what condition? This further specification is essential as the need to survive differs from place to place. Also, while some people require food to survive others just need freedom.

Poverty is, thus, a complex phenomenon (Grobler, 2016) with a plethora of meanings and ways to understand it (Chambers, 1994, 2006; UNDP, 2016a, 2016b; WBG, 2017). For example, poverty has been defined as the lack of quantifiable materials such as money or assets; it has also been explained as lack of unquantifiable non-material values such as family love and affection (Ataguba & Ichoku, 2013; Garbarino, 1992; Laderchi, Saith, & Stewart, 2003). Other definitions point at the lack of both (Hanson, 1997; MacPherson & Silburn, 1997). These definitions present poverty as deprivation or absence of factors under the control of individuals or groups. On the other hand, poverty is defined as deprivations that are beyond the control of the individual; these may include fatalistic or natural calamities and the absence of functional institutions (Grobler, 2016; Halfon, 2016; Kakwani & Son, 2007; Kakwani & Subbarao, 2007; Ravallion, 2011). Also, the effects or impacts of poverty itself are thought to play a role in understanding poverty (Kim et al., 2013). These definitions present poverty as a consequence of three important deprivations: first, as a result of individuals or group's actions such as lack of skill or education; second, as institutional failure; and third, as a result of natural calamities.

Spicker, Leguizamón, and Gordon (2007) builds a glossary of 227 perceptions and definitions of poverty, indicating that the choice of one definition over the others may be influenced by academic, social, political, and moral preferences. Spicker (2007), however, reduces these 227 conceptions of poverty into twelve clusters of meaning, noting that each of the cluster is concerned with the sense in which the word is used and not the elements of the definitions. Given the diversity of places, cultures, and the disciplines of the contributors considered by Spicker et al. (2007), poverty study transcends disciplines and context. These multi and inter disciplinary approaches to poverty study invoke concerns on the definition and measurement. Therefore, the concept of poverty has been studied by researchers from different disciplines. The three dominant disciplines in the study of poverty are economics, philosophy and sociology.

2.1.1. Economic Perspectives of Poverty

Two different views dominate economic perspectives; one of these contends that individuals are ultimately responsible for their poverty. Proponents of this view see the poor as lazy or those who adopt cultures that make them poor or get trapped in poverty. This view was popularised by Lewis (2011), who indicates that poverty is a culture unto itself.

This view assumes limited role of government or the society in general. The second view focuses on macroeconomic forces and emphasises the role of government in providing economic stabilisation and public goods. Poverty going by this view is considered largely as involuntary and caused by unemployment or other macroeconomic policies. Other views consider class and group discrimination as central to poverty and assign a key role to the state in its intervention and regulation. This views places emphasis on inclusiveness, the economy, and policy bases as the major causes of poverty in addition to how to develop anti-poverty policies (Ravallion, 2016). Economic poverty is mainly conceptualized in terms of income or wealth, that is, financial income is the yardstick for determining poverty.

In sum, the economic perspectives of poverty are from two viewpoints: individual and structural perspectives. The structural perspectives blame poverty on macroeconomic forces and other fiscal policies, such that when there is

economic malfunctioning, the impact is on the individuals or households. Also, when there is economic downturn or mismanagement in a country, the consequences are unemployment, inflation, market instability, hunger, diseases, illiteracy, and migration, to mention only a few. The second viewpoint focuses on the individual, that is, individuals are responsible for their poverty.

2.1.2. A Philosophical Perspectives on Poverty

Philosophical perspectives on poverty follow contemporary political philosophy based on different theoretical standpoints (Wolff, Lamb, & Zur-Szpiro, 2015). In political philosophy, the concept of poverty raises issues and intense debates. One of these involves understanding the relationship between absolute and relative poverty and how poverty reduction strategy for each should be designed. It also tries to understand if relative poverty is a measure of inequality and not poverty. Furthermore, the political view tries to understand poverty as lack of resources or lack of capability and, importantly, how anti-policies should be designed.

2.1.2.1. Poverty and Contemporary Political Philosophy

Contemporary political philosophy has been dominated to a very large extent by writings that are highly sympathetic to equality. Contemporary political philosophical literature views poverty in relation to global justice. This view of poverty is understood in the loose sense as lacking access to a level of income and wealth that would allow an individual or family to have sufficiency of a prescribed set of basic needs in the society in which one lives. Sufficiency here is a mark of the human good and happiness, that is, a life is self-sufficient when it is worthy of choice and lacks nothing (Audi, 1999; Pruss, 2006). And, thus, one might wish to identify insufficiency with poverty.

Also, the concept a positive ideal theory of justice (van den Brink, Rippon, Theuns, & Tala, 2018) means that a just society would not contain poor people, then there would be no reason to discuss poverty. For the ideal theory of justice, therefore, just societies should not condone poverty. Generally, political philosophy focuses on the ideal, and since societies cannot be said to approach ideal conditions, other theoretical positions were advanced.

Other arguments, such as those advanced by Sen (2011), point that political philosophy should also pay attention to the injustices of the real world (Miles, 2001). According to such a view, since the world is not an ideal one, there would be very good reason to pay attention to issues of poverty. The focus on the real-world theory in political philosophy is somewhat paradoxical (Goodhart, 2018; Miles, 2001), and should thus pay more attention to carrying out the project of identifying injustice.

The justice and injustice debate dominated by the 'currency of justice' as introduced by Dworkin (1981a, 1981b) and Sen (1979) is that, since people may differ in their needs, even if they live in the same society, making them equal in one respect may well make them unequal in some other respect. Therefore, the uniform basket of needs is not enough to equalize people in happiness or satisfaction. To address the issues raised against the 'basket of needs', Cohen and Otsuka (2011) introduced the concept of 'currency of egalitarian justice'; that is, things of which people should have equal amounts of in an equal society. The search for the egalitarian currency has raised important issues that bear on the place of poverty in the theory of justice.

Sen and Nussbaum, argued for a 'capability' view. This capability view concentrates on what the individual possesses, how happy or satisfied he/she is, and what he/she is able to do or be (Nussbaum, 2011; Nussbaum & Sen, 1993; Sen, 1999b). The philosophical perspective on poverty aligns itself more with this approach, although income and wealth are at the heart of social justice. The sympathy towards the capability approach is for the reason that what people can do and be is much more important than what they own. Going by this, individual life is determined by at least three factors: talents and skills, external resources, and the social, cultural, legal, and material resources within which the person operates. These factors combine to determine an individual's opportunities. It is for this reason that the philosophical perspective focuses on two important viewpoints: the ideal and real conditions.

2.1.3. Sociological Perspectives on Poverty

This section discusses how poverty might be understood from a sociological theory perspective. Sociological thinking on poverty focuses on the structure and organisation of society and how resources are distributed within these societies. Thus, from the sociological viewpoint, the problem of poverty is a classic case of a struggle between groups of people or societies. These struggles are constituted principally by two groups, those who own the resources and those who struggle for what to eat. The latter group work on low wages in exchange for resources while the former group owns the resources.

The initial sociological explanation of poverty is that poverty is a condition that characterizes the failure, fecklessness, dependency culture, and, to some, a consequence unequal distribution of resources and opportunities within the society. Sociologists such as Walker (2014) have highlighted the importance of stigma and shame in understanding the experience of poverty. Other sociologists also point at how public policies and government negatively caused and stereotyped those experiencing poverty. Sociological thinking, like economic thinking, identifies some 'undeserving poor' who are principally responsible for their poverty. Welfare dependency has also been blamed for the feckless behaviour of the individuals (Murray, 1990). Poverty was also associated with power, status, and prestige in perpetuating dominant relations and population and power relation (Wrigley, 2004). These classical authors emphasised the functional necessity of social inequality for the well-being of society. The close association created between poverty and individual behaviour means that led to the tendency to conflate poverty with other social issues such as unemployment, welfare receipt or substance abuse, or to cite these conditions as explanations of poverty. Thus, some of the researchers in this category portray poverty as a problem created by those experiencing it.

Sociologists believe that poverty and lack of material resources are important drivers of stigma and shame. Both sociological and psychological theories have shown that shame is a missing component in explanations of poverty and in policy design (Bantebya-Kyomuhendo et al., 2014). Shame is either internally or externally imposed by the society, individuals, and institutions.

Sociology provides a powerful tool for thinking about poverty, thus relating it to personal or group troubles. Some attention has recently been devoted to the discussion of rising inequality. In the current context, economic inequality is getting more extreme, with those at the very top growing ever richer while the majority are finding life increasingly harsh and poverty rate is increasing. Most of the sociological evidences reviewed in this study are concerned with the reproduction of (social class) inequalities over time. Associated with understanding the meaning of poverty is how to measure poverty. Poverty measurement is related to the way poverty is conceived and probably defined. In the next section, poverty measurement will be discussed.

2.2. Measurement of Poverty

The first stage in poverty analysis entails poverty measurement and aggregation. Poverty measurement has four distinct advantages. First, for cognitive purposes because it enables the knowledge of poverty situations and determined who is poor and who is not. Second, for analytical purposes because measurement enables the understanding of the factors determining poverty situations. The third advantage is for policymaking purposes whereby measurement enables the design of interventions best suited to the time and circumstances. Finally, for monitoring and evaluation purposes that will allow the assessment of the effectiveness of anti-poverty policies and determine whether the situation is changing or not.

It should be noted, however, that the methods used for analysing poverty must always be country and situation specific and based on the availability of data. Before analysing poverty, three ingredients are required: a) choosing the relevant dimensions and indicator of well-being; b) selecting poverty threshold below which a given household or individual will be classified as poor; and c) selecting the poverty measure to be used for reporting of the population as a whole or for a subgroup within the population. Constructing poverty measures also consists of two steps: a) identifying who is poor based on a threshold and aggregation; and b) deciding on an appropriate measure to aggregate indicators to arrive at a decision of being poor or non-poor. Unidimensional poverty measurement based on a threshold identifies a poor or a non-poor individual or household while multidimensional poverty measurement identifies the poor on the basis of an approach as shown in the figure below.

Figure 1: Poverty Measurement: Conceptual Framework

Source: The Author

2.2.1. Unidimensional Measures of Poverty: Using Monetary Measures for Poverty

Unidimensional poverty is measured using income or consumption. Monetary measure of poverty can be estimated using income or consumption indicators. The sentiment in unidimensional measure is to use consumption (Coudouel, Hentschel, & Wodon, 2002). Some of the reasons advanced suggest that consumption is a better outcome indicator than income. Furthermore, information on income may be inadequate as rural people hardly keep track of their money; so also, are the urban poor who have erratic income that is difficult to track. Similarly, estimating agrarian income may be difficult because the people affected may not have the skills of book keeping for them to know what they put into the production; it may also be difficult for household owners to price what is consumed or what is exchanged for other goods. Estimating consumption has its own difficulties. In some surveys, income is a better indicator of money as it may be difficult to obtain consumption data. However, combining income and consumption data to arrive at indicator is preferred.

Whatever choice of indicator is used, it is typically necessary to aggregate the information obtained to arrive at a poverty indicator.

2.2.2. Multi-Dimensional Poverty

Multidimensional poverty ideas evolve as a result of the way the quality of human life in underdeveloped countries continue to be undermined despite the enormous prosperity the world has achieved. Personal achievements of the individuals and groups have not been properly harnessed by the countries, making the nations rich while their citizens poor (Landes, 1998). Nations are supposed to provide the opportunities people can harness for their personal lives to be enriched.

The quality of life in this sense takes the form of health, education, and standard of living. Therefore, fundamental to understanding poverty is the idea of multiple indicators to quality of life and what items ought to be included in the measurement. The relevance of comprehensive approaches to define poverty from the quality of life perspective has had enormous implications on the way poverty is measured and anti-poverty policies are developed, particularly as developing countries expend large amounts of resources in the design and implementation of policies to fight poverty, with little or no significant result.

International and multilateral organizations such as The World Bank also expended so much money in aids and debt reliefs to help developing countries in their fight against poverty. Reddy and Heuty (2008) estimate that the amount of money expended on global poverty reduction was between US\$54 to \$62 billion per year. Most of these resources were expended in Africa, where over half of the total number of people in extreme poverty are living (WBG, 2017). Within the African continent, Nigeria has the largest number of poor people, contributing 26.2% of the total in 2010 (Handley, Higgins, Sharma, Bird, & Cammack, 2009). Despite these assistance and internal budgetary spending, Nigerian Bureau of Statistics (NBS) indicates that there are over 100 million people living in poverty in 2009-2010, up from 80m in 2003-2004 (NBS, 2012). With these alarming statistics, it can be said that anti-poverty policy programmes have not produced the desired result.

2.2.2.1. Conceptualising and Operationalising Multidimensional Poverty

Conceptualising multidimensional poverty is very important if the quality of life of the poor is to be enhanced. This further invokes the issues of defining and measuring quality of life with such indicators as health, nutrition, household environment, adequate physical and mental development, and the likes. These essentially have some bearings on quality of life, suggesting that attempts to measure poverty ought to include factors that are beyond income and consumption. Furthermore, it is important to also incorporate the understanding of what it means to be poor socially, politically, and even psychologically. Reflecting the positions of many poor people in developing countries, which place freedom, capability and functioning at the core of the poverty debate (Sen, 1985). The argument is that, significant poverty problems will vanish once individuals enjoy an adequate degree of freedom as indicated by their capability to function or achieve certain level of well-being, although the need for contextual studies to understand poverty conditions is advanced. Again, the capability approach does not provide an explanation for why people with identical degrees of capability are not equally poor.

Another important model is the social exclusion approach, which regards poverty as a consequence of social processes (Eurobarometer, 2010; Sen, 2000). The social exclusion approach explains the process of exclusion, or inclusion, in a society that inhibits people from benefiting from the market as well as publicly available resources. The argument is that, the existing social institutions and orders preclude some people from participating in different activities central to resource generation and redistribution. While lack of political participation excludes one from affecting changes to policy processes, with enormous implications for the resulting quality of life, lack of participation in civic and cultural activities is also important to improve one's relational quality of life. The social exclusion approach covers additional, especially, social processes of identifying poverty status.

Therefore, the different conceptions of poverty can individually be used to explain some aspects of poverty, depending on specific context and interests. In essence, these different approaches have been used to broaden the concept of poverty itself from the narrow sense of low income to a set of resources needed to achieve quality of life. Beyond these individual approaches, however, there are compelling arguments for defining poverty comprehensively, not just focusing on separate dimensions. To operationalize multidimensional poverty, observable indicators including financial difficulty, housing condition, amenities, education, and the likes, as representation has been the major considerations of poverty research (Fukuda-Parr, 2003). As it is difficult to measure quality of life as represented by physical and mental health, some input measures that can help achieve measurement in this respect are used (Alkire, Foster, Seth, et al., 2015; Saith, 2001). The indicators used to operationalise multidimensional poverty have individual as well as social dimensions. A decent quality of life does not just require good health, but also one's ability to get along well with others in the society. The notion of quality of life, in essence, captures material, individual, and relational components needed to have a decent life. These form the different components of poverty, providing the basis for multidimensional approach to poverty study. The multidimensional approach deviates from the conventional unidimensional practice. Instead of using poverty threshold to determine who is poor and who is not, the incorporation of multiple dimensions will provide more indicators needed to determine poverty status. Furthermore, the dimensions inter-relate and inter-connect, thus calling for a systematic understanding of the interconnectedness between individuals and social dynamics that collectively determine how one fares in society. Due to the nature of the interaction, with one dimension affecting the other, one's status cannot be predictable using on one dimension alone. The conceptual representation of multidimensional poverty is given in figure two below.

Figure 2: Concept of Multidimensional Poverty (Adopted from Wagle (2008, p. 63))

2.2.3. Multidimensional Poverty (MP) Approaches

As pointed out earlier, the way poverty is conceived determines the way it is measured and the way policies are designed against it. Since this paper considers poverty as multidimensional, a brief discussion on the approaches to understanding multidimensional poverty is necessary. Four approaches dominate the multidimensional poverty literature. These include the Basic Needs Approach (BNA), the Capability Approach, the Web of Deprivation Approach and the Wellness Approach (Alkire & Foster, 2011; Alkire, Foster, Seth, et al., 2015; Alkire & Santos, 2013; Ferreira, 2011). The BNA approach holds that people who are unable to meet their basic needs are poor (Streeten, 1979, 1995). According to Streeten (1979), the BNA aims to provide opportunities for the full development of the individual. The advantages of the BNA are that, it addresses poverty, enhances economic productivity, and it is easy to operationalise, although the bundles of needs are arbitrarily determined (Wong, 2012).

The Capability Approach (CA), as proposed by Amartya Sen, evaluates individual welfare (Saith, 2001). For Sen (1999b), it focuses on the relationship between individuals and what they own in terms of commodities. According to Sen (1999a), the possession of commodities may not necessarily translate into wellbeing. Therefore, the focus of the CA is not only on how people acquire commodities but also how they establish command over those commodities and what they do with them (Sen, 1999b). The Web of Deprivation (WD), as Chambers (1994, 2006, 2007) indicates, considers many dimensions of poverty or deprivation. According to Chambers, these dimensions or ideas of wellbeing to which people aspire have striking similarities and interrelationships, and so he suggests conceiving of a web or net of disadvantages and deprivation during poverty analysis. This approach views poverty from the standpoint of the poor themselves, considering what the poor think about poverty and what could be done to reduce poverty (Chambers, 2007). The fourth approach is the Wellness Poverty Model as presented in Sweeney and Witmer (1991) and Witmer and Sweeney (1992). The model attempts a holistic understanding of the individual, incorporating the individual's mind and body because both are seen as part of the whole individual. Using the wellness model, as opposed to the wellbeing model, Prilleltensky (2003) shows that, at the collective, relational, and personal levels, wellness-promoting factors can have positive, synergetic effects on poverty. Similarly, using wellness model, Prilleltensky and Prilleltensky (2003) demonstrate how harnessing agency and resilience among the poor may be used in fighting poverty. The advantages of the wellness model include the fact that it aims at prevention and cure and has a well-structured concept measure in the form of the Wellness Evaluation of Lifestyle (WEL) (Myers, Sweeney, and Witmer (2000).

From the forgoing, to be able to indicate poverty or its intensity, measurement and aggregation are necessary. Aggregation can be made to determine overall poverty status or for can be applied to a single dimension to determine who are poor in that dimension.

2.2.4. Poverty Aggregation

Poverty measurement consists of two distinct operations: identification of the poor and the aggregation of their poverty characteristics into an overall measure. That is, the second step for constructing a poverty measure is aggregation. Aggregation involves putting indicators together and determines a point below which individual or group of individuals are said to be poor. Therefore, a poverty measure depends on identifying both the indicators of the poor and the criterion that can be used for aggregation — that is, the poverty line or a threshold.

Aggregation allows a view of poverty using a single index or a combination of indices. There are many ways to develop an aggregate measure or a poverty index and these have been discussed extensively elsewhere (Alkire & Foster, 2008; Datt, 1998; Tran, Alkire, & Klasen, 2015). The arguments are centred on the development of the indices to represent various dimensions or a composite index to reflect achievement in all considered indicators. Ravallion (2011), however, suggests looking at attainments in various dimensions, rather than focusing on performance with respect to a single composite index. Ravallion (2011) argues that focusing on attainment in individual dimensions would give better policy direction than a composite index. For example, if a country's performance in education is found using education index to be low, policy direction towards the development of education may be developed. Similarly, a country may focus on promoting job creation or better health services. Although the weight of the argument against composite indices is valid, this paper considers the composite index as it is used as a policy instrument by the United Nations Development Programme (UNDP), whose policy issue is considered.

3. Poverty Reduction Policies in Developing Countries: The Poverty Reduction Strategy Papers (PRSPs)

In 1999, the World Bank and the International Monetary Fund (IMF) launched a joint initiative, stating that they intended to set the fight against poverty at the heart of their development policies. The initiative was referred to as the poverty reduction strategy papers, which was meant for low-income countries wishing to apply for financial aid from either of the organisations, or for debt relief. PRSPs emphasises on three main innovations: first, a focus on poverty reduction; second, a participatory process implemented for policy-making and better coordination of official development assistance.

In addition, these reports describe the country's macroeconomic, structural, and social policies in support of growth and poverty reduction, as well as associated external financing needs and major sources of financing. PRSPs promotes participation and inclusivity. In particular, the process has been adjudged as better than the poverty reduction strategies before it. Levinsohn (2002) lists some of its advantages. However, despite these advantages, the PRSPs as a poverty reduction policy has been criticised by many and some scholars opine that the policy did not justify the amount of money spent on it. Particularly, as PRSPs are developed by the countries concerned, only a sourcebook (Klugman, 2002) and not a 'best practice document' that may be followed by all performing countries provides a guide.

PRSPs also focuses only on income poverty and does not and give much attention to rural poverty such that it almost disregard the other dimensions of poverty and urban poverty issues (Mitlin, 2004). Also, a review of some countries' strategy papers indicate that these were prepared without adequate data and that there is no clear level of poverty analysis (individual or household) (Holmes & Evans, 2003; Stewart & Wang, 2003). From assessments and policy reviews using different countries as case studies, PRSPs have little impact with respect to poverty reduction and human development.

This assertion is corroborated when the impact of PRSPs on poverty in developing countries is considered. A study by Marshall, Woodroffe, and Kjell (2001) have found that, for Bolivia, Cambodia, Kenya, Nicaragua, and Tanzania, PRSPs failed to adequately address areas vital to poverty reduction. Similarly, in the opinion of Stewart and Wang (2003), PRSPs do not significantly empower poor countries. Therefore, developing countries like Nigeria require efficient poverty reduction models that are well conceived and that will be properly implemented. With the introduction of the SDGs and its focus on total eradication of poverty, integrated anti-poverty policies that consider and relate poverty driven factors should be the motivation for research and policy formulation. Indeed, this motivation is the focus of recent research on poverty (Liu, Yu, & Wang, 2015).

3.1. Poverty Reduction Policies in Nigeria: The National Economic

3.1.1. Empowerment and Development Strategy (NEEDS)

In 2004, a PRSP was prepared for Nigeria with the aim of addressing developmental challenges in the country, including growing poverty (NPC, 2004). Nigeria's PRSPs, called the NEEDS, was designed to be not only a macro-economic plan document, but also a comprehensive vision, goals, and principles of a new Nigeria that would be made possible through four key policies of wealth creation, employment generation, poverty eradication, and value reorientation.

However, a three year mandatory progress report indicated that the poverty reduction targets were not met (IMF, 2007). Although NEEDS had recorded some success, it has failed in so many areas. Critics of the policy have claimed that instead of ameliorating poverty it had aggravated it and had failed to improve the basic infrastructures that have direct link to poverty reduction. For example, Bambale (2011) indicated the failure of NEEDS to significantly generate employment and reduce poverty, while Marcellus (2017) reveals that NEEDS is not different from the previous development plans in Nigeria and that it was characterized by lack of commitment from the leadership, corruption, weak institutional frameworks, and lack of political will on the part of implementers.

Other reviewers of the policy highlighted the need for new patterns of human development for the programme to succeed (Ogundele, Hassan, & Abdul-Azeez, 2011). With respect to the contribution of NEEDS to the development of infrastructural facilities, Olusoji and Oloba (2014) indicate that the policy had not been able to eliminate generation deficits, expand transmission and distribution networks, and increase rural access to electricity, which are the necessary requirements for economic growth and poverty reduction through the provision of employment.

With respect to family issues and NEEDS, Fan, Usoro, and Edinyang (2009) state that the policy has relevance to family life in Nigeria. To the authors, more than 2,500,000 individuals benefited from the various programmes of the policy. However, for a country with over 90m people who are income poor and with more than 50m families who live on less than

\$1.25 a day, engaging 2.5m individuals cannot count as an achievement. In addition, the authors do not indicate the number of families affected by the policy nor define what qualify them as families.

In effect, NEEDS as a national development policy, which represented the aims and aspirations of the nation in charting path of economic development and poverty reduction, has failed to meet its aspiration, at the least in poverty reduction. To reduce poverty in Nigeria, policies should be developed that will focus on human development as the engine of growth. In the next section, some approaches to human development and poverty reduction will be discussed.

4. Approaches to Human Centred Policies and Poverty Reduction

Human centred policies are those policies that have human development as their major focus and are often referred to as pro-poor policies. As against pro-economic policies, pro-poor policies focus on human beings as the engine room of development. More importantly, these policies make efforts to systematically analyse issues in relation to the poor. Furthermore, these are policies that include the interests of the poor at each stage of the policy design. As indicated in the last section, a systematic assessment of PRSP in many countries, including Nigeria, raises strong concerns about the role of the policy in poverty reduction, even as poverty was regarded as unidimensional.

PRSPs has failed to meet the target of poverty reduction largely because the policy was not designed in consultation with the poor and was meant to address one dimension of poverty. Just like many poverty policies, pro-poor policies can also be made to target specific poverty. Pro-poor policies may be designed for specific sectors such as the health or education sectors (Laterveer, Niessen, & Yazbeck, 2003) or for a specific region of a country such as the rural (Li, 2014) or urban and vulnerable people (Bolnick et al., 2006). This approach to development focuses on ideas that respond to various demands for human well-being and, unlike economic growth focus approach, may be cost effective. Furthermore, it is context specific and has a human focus. To situate the idea within the context of this discussion, the next section will briefly explain the theoretical bases of pro-poor growth.

4.1. The Meaning, Ideas and Measuring Pro-Poor Policies

Human centred development is defined as the process of expansion or improving the quality of human life, entitlement and capabilities by raising people's levels of living, self-esteem, and freedom (Sen, 1984, pp. 30-34; Todaro & Smith, 2012, p. 5). The concept is inherently meant to address the quality of human life. Put differently, human centred development is guided by moral judgement as central to the shaping of development policy, but equally important are other considerations such as the current and future implications of the policies. Simply put, human-centred development is a sustainable value judgement approach with tools and techniques for assessing or measuring the benefits of a policy to the poor.

Regarding measurability, Alkire and Deneulin (2009) consider human centred policies for development as a multi-dimensional and multi-sectoral process, involving social, economic, and political changes aimed at improving people's lives. Therefore, pro-poor policies should be concerned with not only economic growth and productive investment but also with people's health and education. These policies enable people to live the lives they value, what Sen (1999b) called 'freedom'. From the foregoing, measuring policies as human centred development entails deploying tools and strategies to understand and measure many economic and non-economic variables (Todaro & Smith, 2012), including the dimensions that are connected and interdependent.

Several governments, international and multilateral organizations, adopt human centred development as a policy. Indeed, in the year 2000, there was a millennium declaration called the Millennium Development Goals (MDGs), which subsequently graduated to The Sustainable Development Goals (SDGs) in 2014 (Sachs, 2012; UN, 2016). These two United Nations Policies were conceived as measures to meet the needs of the present without compromising the future; that is, they are meant to be pro-poor. These policies listed the core indicators of development as used by the United Nations Development Programme (UNDP) to compare performance of countries in terms of human development.

4.2. Ideas Related to Human Centred Development

Human centred development has many-sides or dimensions: at the level of the individual, it indicates measurable progress in the quality of life. This progress, according to ul Haq (1995), encompasses enlargement of people's choices and may be noticeable in increased skill and capacity, greater freedom and choice of the kind of life an individual value; creativity; self-discipline; responsibility and material well-being. Theoretically, people's choices are infinite and vary depending on time and conditions (Anand & Sen, 1997; Sen, 1987). For human centred development, the priority is to change the situation of the individual such that the objective is to expand what the individuals are able to do and be. This approach to development considers that a healthy economic growth should be the one that enables people to enjoy healthy life, have good education, have meaningful job, enjoy family life, and involve in democratic processes and so on. Therefore, people-centred development shifts focus from one single indicator of development, that is income, to a battery of items. These items are things that an individual can do or be now or in the future. The trade-off in this case is what one considers the most important indicators to pursue, that is one's value judgement (Seers, 1969).

To measure human development as people-centred development policy, the UNDP's human development reports focus on indicators that show increase in people's living standards; these include material consumption, education, health, and environmental protection using Human Development Index (HDI). The first of these reports was published in 1990 (UNDP, 1990) and since then the reports have focussed on human development on a range of issues.

In a review after two decades, Alkire (2010) indicate that health, education, and living standards have been the most mentioned human-centred policies over the years. Also mentioned throughout the years, except in 2011, was freedom. Employment appears only for five years, indicating how monetary income was not a major consideration. What

was not given much attention was the environment which appears in only five reports, 'although its centrality to human development at this time is indisputable' (Alkire, 2010, p. 14). Other areas that have not been given much attention are human rights, physical security, social freedoms, including dignity and respect. Similarly, belonging and participation appear in only six reports while cultural liberties appear in only one of the 20 reports. The review pointed out the areas of greater concern to UNDP as indicators of human centred development.

Although the HDI considered a battery of items in measuring the quality of human life, it has not comprehensively covered several other issues that are important at all times. As Sen (2000b) indicates, indicators of human development may include any index and dimensions such as political freedom, family value index, marriage/marital consent index, child right index, woman in agriculture index, women rights in Muslim society index, education right index, which have not been given consideration by HDRs.

5. Nigeria, Human-Centred Development and Poverty

Nigeria is rated low in terms of human-centred development going by the UNDP HDI and it has not improved over time. For example, between 2005 and 2018, Nigeria's HDI value increased marginally from 0.465 to 0.532. This is represented in table one which reviews Nigeria's progress in each of the three HDI indicators between 1990 and 2017. From the table, life expectancy at birth increased by only 8.0 years, mean years of schooling increased by 1 year and expected years of schooling increased by 3.3 years. However, Nigeria's GNI per capita increased by about 87.4 percent between 1990 and 2017.

	Life Expectancy at Birth	Expected Years of Schooling	Means Years of Schooling	GNI/Capita (2011 PPP\$)	HDI Value
1990	45.9	6.7		2,792	
1995	45.9	7.2		2,569	
2000	35.3	8.0		2,451	
2005	48.2	9.0	5.2	3,669	0.465
2010	50.8	8.4	5.2	4,862	0.484
2015	53.0	10.0	6.0	5,527	0.527
2016	53.4	10.0	6.2	5,326	0.530
2017	53.9	10.0	6.2	5,231	0.532

Table 1: Nigeria's HDI over the years

Data Source: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/NGA.pdf

From table one, Nigeria's HDI of 0.532, the average for countries in the low human development group is 0.504. However, the ranking is below the average for countries in Sub-Saharan Africa. In addition, table two below indicates that the average for countries in sub-Saharan Africa is 0.537. Furthermore, a comparison between Nigeria, Congo (Democratic Republic of the Congo) and Ethiopia where there was civil war and famine indicates that, although the two countries have lower HDI ranking, they performed better in some of the indicators.

	HDI Value	2017 HDI Rank	Life Expectancy at Birth	Expected years of Schooling	Mean Years of Schooling	GNI/Capita (2011 PPP\$)
Nigeria	.532	157	53.9	10.0	6.2	5,231
Congo	.437	176	60.0	9.8	6.8	0.791
Ethiopia	.463	173	65.9	8.5	2.7	1,719
Sub-Saharan Africa	.537	-	60.7	10.1	5.6	3,399
Low HDI	.504	-	60.8	9.4	4.7	2,521

Table 2: Comparing Nigeria's HDI and Some African Countries

(Data Source: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/NGA.pdf)

Nigeria earns more in terms of income (GNI/Capital at 2011PPP USD) while Ethiopia and Congo have higher life expectancy at birth. This is an obvious reflection of the health conditions of the citizens of the three countries. Nigeria's earnings or income measured as GNI/capita is more than 5000 times as much as that of Congo, but lower in mean years of schooling and almost similar expected years of schooling. This is an indication that there are more literate individuals in Congo than in Nigeria. Health and education are major indicators in the measurement of quality of life of citizens and the above table indicates that Nigeria rates lower than the two countries.

From table two, it is obvious that the HDI itself is not a reliable measure of quality of life. Although initiators of HDI have indicated its flexibility and openness, the use of aggregation subjected it to some skewness biases. For example, though Nigeria has lower literate citizens than Congo, it has higher HDI value due principally to higher per capita income. Another criticism of the index is that it considered only three dimensions and left out many aspects of life that are of fundamental importance (Ranis, Stewart, & Samman, 2006). Therefore, a wider set of measures of choices that might qualify as part of HD needs to be included. Philosophy and Sociology researches have indicated different quality of life items (Morris, 1980), which are good parameters for inclusion in the development of HDI. Also, most of the low HDI countries are developing countries and their conditions continue to deteriorate. Therefore, failures in HDI particularly

dimensions which are responsible for the failures should be focussed on to determine if there are underlying reasons for such.

The 1997 HDR focused on poverty and discussed how poverty and deprivation generally degrade human being (UNDP, 1997). UNDP considers eradicating poverty as an ethical, social, political and moral imperative of human kind. People's centred development was also recognised as imperative in achieving poverty eradication.

Before the report, Anand and Sen (1997) have traced the history of HDI by relating it to poverty and the development of the Human Poverty Index (HDI). Following Anand and Sen arguments, the HDI has taken multidimensional procedures for assessing poverty (Anand & Sen, 1997). The procedures and Multidimensional Poverty Index (MPI) developed by (Alkire, 2010) for the 2010 HDR are based on dimensions and indicators under the same headings. For policy making, the methodology underlying the MPI (Alkire & Foster, 2011) offers a high degree of flexibility in the choice of indicators. These indicators can be tailored to suit the specific requirements of each country and reflect the pre-occupations of policy makers.

5.1. Nigeria Multidimensional Poverty

For Nigeria, the MPI for 2018 was calculated as .294 with more than 52% of the citizens in multidimensional poverty (Alkire & Kanagaratnam, 2018; Alkire, Kanagaratnam, & Suppa, 2018). A comparison of MPI between Nigeria, Congo and Ethiopia reveals that Congo has the lowest MPI values of .185 with 40.42% of its people in multidimensional poverty, and Ethiopia with .521 MPI value has more than 83.82% of its people in multidimensional poverty. Among the three, Nigeria ranked 97, Congo 76 and Ethiopia 109. Evaluation of MPI may also be targeted and has regional and special characteristics. For Nigeria, most states in the North have higher values than those in the South.

In addition to regional and state differences, Nigeria's performance in the global multidimensional poverty rankings in the last 10 years has not indicated substantial progress. The following table shows the performance of Nigeria over the years.

Years	MPI Value	Education		Health		Living Standard					
		YOS %	SA %	Nutri %	CM %	CF %	SAN %	DW %	ELE %	HO %	Ass %
2011	.311	23.4	27.2	26.1	33.6	52.9	39.7	35.9	41.2	33.4	25.6
2013	.310	23.2	27.0	26.3	33.5	52.8	39.6	35.7	41	33.2	25.5
2014/15	.303	24.4	26.7	29.2	30.9		37.7	32.9	37.6	32.9	18.4
2016	.303	24.4	26.7	29.2	30.9	51.5	37.7	32.9	37.6	32.9	18.4
2017	.303	25	27	29	31	51	38	32	37.9	32	18
2018	.294	25.7	31.2	35.7	12.1	50.9	39.2	31.2	37.9	39.0	17.6

Table 3: Nigeria's MPI Values and Dimensional Contribution over the years

Data Source: <https://ophi.org.uk/>

Nigeria shows dismal performance of Nigeria in both UNDP's HDI and the OPHI's MPI despite the per capita income growth as shown in the figure three below.

Figure 3: Nigeria's GNI Over the Years

Source: <https://knoema.com/atlas/Nigeria/topics/Economy/>

The figure above shows that GNI per capita based on Purchasing Power Parity (PPP, 2005USD) has continued to rise from 1990 onward. While GNI per capita for Nigeria has an average annual growth rate of 5.20 %. With the growth in GNI, living condition is expected to improve. In the case of Nigeria, however, the reverse occurs. A look at table 3 above may provide some of the needed explanations for the downward trend in human living conditions. While the average

literacy rate (YoS and SA values) continues to improve, household living conditions (CF, DW, ELE and ASS) continue to deteriorate. As the indicators are interrelated and interconnected, a downward slide in one will eventually affect the other. For example, from the table, household sanitation and clean water access have shown that less people have access to those essential quality of life indicators. Those will eventually affect health situation which will impact on school attendance with a consequent effect on literacy.

With large population, Nigeria plays significant role in World poverty assessment. The country contributes about 10% of the global poor. In 2018, Nigeria, with a population of 182 million has over 90 million in extreme poverty and was described as the poverty capital of the world (Kazeem, 2018). Nigeria is also one of the countries with more people falling into poverty and less escaping from it (WPC, 2018). For Nigeria to meet the first goal of the Sustainable Development Goals which were set by the UN in 2015 to “eradicate extreme poverty for all people everywhere by 2030”, five people will have to leave poverty every minute. On the contrary, 6.8 people fall into extreme poverty instead.

Concerning regional and state comparisons, the northwest region has more than 80% of its people in multidimensional poverty and is the most impoverished region in Nigeria. States within the region have also varying poverty rate as indicated in Table four. The table gives a summary of MPI values for each of the seven states and the percentage contribution of each dimension.

MPI Values for the Seven Northwest States				
States	MPI Score	Dimensions		
		Education %	Health %	Living Standard %
Jigawa	.552	31.5	34.0	34.5
Kaduna	.311	28.7	34.8	36.5
Kano	.434	26.8	39.5	33.7
Katsina	.520	33.3	35.1	31.6
Kebbi	.553	34.2	29.7	36.1
Sokoto	.548	34.7	30.9	34.4
Zamfara	.605	30.8	32.8	36.5

Table 4: MPI Values by States in Northwest Nigeria

Source: Alkire and Kanagaratnam (2018)

It is important to reiterate that there is a causal linkage between the indicators as they influence one another. For example, the falling standard in education may affect income which in turn influences living standard. Similarly, a sick individual may not be able to acquire knowledge that will enable him/her earn more and improve living standard. Therefore, these dimensions are inter-related and inter-connected. In the same considerations, other factors, such as family life which may not be considered as dimensions, influence or impact on these dimensions. This interrelationship between dimensions and factors, necessitate holistic consideration of these factors and dimensions and how they inter-relate and inter-connect. Combining systems thinking and complexity theory provide a framework for understanding this analysis.

6. Using Systems Thinking and Complexity Theories to Improve the Pro-Poorness of Anti-Poverty Policies

To make government policies pro-poor, they should be able to achieve a greater reduction in aggregate poverty for a given cost. Although poverty can be measured in a variety of ways, however, no matter how it is conceptualised and measured, the policies developed should be able to address the problems of the poor. This section attempts to develop a systematic process of making anti-poverty programmes pro-poor. Despite the criticisms on HDI for not considering major human welfare items (Kelley, 1991) and being cumbersome (Ravallion, 2011), it guides the development of anti-poverty policies that are pro-poor.

To guide the development of pro-poor policies, system thinking and complexity theories are combined to understand the interconnectedness and rankings of poverty indicators. This is also to understand factors that border on, and connect poverty indicators to determine which of these are centrally connected to make what is referred to as ‘poverty-hub’. Taking a cue from Sen (1999a) on valuation and ranking of different functionings, social network analysis tools, as described in (Borgatti, Everett, & Johnson, 2013; Prell, 2012), is used to analyse the relationship between poverty factors thereby indicating, via centrality principle, factors that form the hub or the most valued amongst the identified factors. A system of interconnected factors is modeled as a network with complex connection rather than a network of linear chain. Using social network analysis to investigate the structural characteristics of poverty factors will help in understanding poverty situation in the area. The social network process value factors through their degree of connectivity with most connected as the higher value ones. To rank the valued factors, the Analytic Network Process (ANP) developed by Saaty (2004) was used. The ANP used very basic criteria that allow individuals and groups to assess whether they should make any of the many decisions they face in their daily operations. They do not depend on any particular decision for their priorities but are assessed in terms of the goals and values of the individual or organization. Using these two tools, the first for valuation and the second for ranking, most connected poverty factors can be identified and ranked so that appropriate anti-poverty pro-poor policies are developed.

6.1. Profiling Interconnectedness between Poverty Factors

The key to understanding poverty as a complex system is keeping track of the component parts of that system and the outside pressure upon them (Chaisson, 2004; Gell-Mann, 1995). Thus, systems thinking is used to discover poverty factors and the pressure on them is assumed to be their connectivity within the poverty network. It is also important to understand poverty reduction strategies and their consequences on poverty and its individual factors. Indeed, a study on the African poverty problems highlighted the complex and interacting condition and effects of factors both between and within the African countries (White & Killick, 2001).

The ideas proposed here are based on systems and complexity thinking and will focus on individual self-sufficiency and family poverty. To value and rank the poverty factors, first identification of these factors and the resultant consequences on poverty using the literature is made. Second, the anti-poverty policies that have been implemented over time are also identified and the consequences of these policies on poverty are also indicated. The table below presents all the factors identified under the various headings. Fifty-three factors were identified and were later reduced to 36 by combining and eliminating those found not relevant to Nigeria. These factors are inter connected and each of them may influence the other within its category or outside it.

Poverty	Consequences of factors on Poverty	Anti-Poverty policies	Consequences of policies on poverty
Education	Mental Health	Institution of social welfare system	Taxation
Health	Criminality	Training	Legislations
Income	Stigma	Knowledge	Corruption
Housing	Conative Deficiency	Infrastructure	Environmental policies
Sanitation	Moral Values	Corporate, public and private companies	Debt
Shame	Unemployment	Pro-poor policies	Joblessness
Abuse	<i>Belief system</i>	Food and Security	Transition
Freedom		Environmental management	
Security		Removal of vulnerabilities	
Food		Direct funding of social palliative	
Sustainable Environment		Conditional funding	
Justice		Microfinancing	
Assets		Functional markets	
		Therapy	
		Emergency services	

Table 5: Poverty, Poverty Consequences, Anti-Poverty Policies and Consequences
Sources: The Author

As ranking is needed, these factors are placed under poverty categories so that ANP procedures as described in Saaty (2009) and used by Chen, Lee, and Wu (2008) and Wey and Wu (2007) will be followed. From the table above, poverty and other factors have implications on one another. It is not just enough to say one is poor, but equally important is the impact of poverty on the person. Similarly, determining the appropriate anti-poverty measures to take is not all, but also estimating what will be the consequences of the measure on the individual, their family and the society in general. Thus, the absence of needs and the indicators of poverty and the poverty reduction strategies adopted are also mutually related and causal.

Table six below puts the identified factors into five classes of poverty. Conceptually, many poverty analyses were motivated by the approaches mentioned in section two above. Each of the approaches follows some methodology of data identification, has the type(s) of poverty problems its best analyses and the challenges associated with the approach. OPHI and other researchers in multidimensional poverty use three dimensions with 10 indicators to determine MP status (Alkire, 2018; Alkire, Foster, Santos, Roche, & Ballo, 2015; OPHI, 2017; Tran et al., 2015). To demonstrate the use of social network and the ANP procedure, the established methodology, which is used by the UNDP in the development of HDI, is adopted. Following their methodology, the poverty categories in table 6 are considered as dimensions and the factors as indicators.

Poverty of Identity	Poverty of Security	Poverty of Resources	Poverty of Cognition	Poverty of Relationships
Freedom of Association Self-esteem High moral values Shame Mental Health Stigmatization Unemployment Religion Social Palliatives	Protection of life Education Safe environment Justice System Freedom from Abuse Criminality	Food Housing Clothing Physical Health Clean Water Sanitation Income Infrastructure Environment Ownership of assets Taxation	Cognitive Deficiency Skills Knowledge Laziness	Social welfare Vulnerabilities Legislation Institutions Corruption Markets

Table 6: Human Needs

Source: The Author

Research evidence (For example, Haushofer & Fehr, 2014) indicates that poverty hampers decision making and causes individual stress and negative emotional states, by limiting attention and favouring habitual behaviours at the expense of goal-directed ones. Together, these relationships may constitute a feedback loop that contributes to the perpetuation of poverty. As an example of their relationship, consider lowliness of income. Low income may affect food and nutrition intake, which subsequently impacts on mental stability and cognitive ability of the individual (Farah, Noble, & Hurt, 2006; M. J. Farah et al., 2006). Mental stability may impact on persons reasoning and may lead to criminality or immorality. Immorality may lead to health issues and criminality may also lead to injury or lack of freedom through imprisonment. Eventually, the person involved in any of the above may lack the ability to have sufficient nutritional value that will enable him work to earn income. The items have causal or correlational relationship or may have both. In like manner, anti-poverty measure may promote rather than reduce poverty. For example, most governments in Nigeria institute social welfare measures, such as SURE-P, N-power, minimum salary package or other measures to reduce poverty level (Aluko, 2017; Anger, 2010). These measures may have negative consequences on the economy such as increase taxation. Taxation may on the other hand crumble industries creating unemployment or create inflation making the gains in the social welfare measures promote rather than reduce poverty. From the literature, 53 items involving indicators of poverty, poverty consequences, poverty reduction strategy (PRS) and the consequences of PRS have been developed and reduced to 36 by merging some that are believed to be representing same or similar factor. Note that these factors are just few examples of the factors that could be developed and many more have been indicated in several references (Such as in Crowther, 2000).

6.1.1. Factors Valuation Using Social Network Analysis

To demonstrate the above relationship between poverty factors and thus rank them according to the centrality in the relationship they formed with others, consider the network of the identified factors in figure five. All the identified factors were put in a spreadsheet form with the same factors appearing on the rows and the columns of the sheet. Fifteen poverty and economic development researchers were selected, from four universities in the northwest Nigeria, to complete a preferred questionnaire. Each of the factors on the rows was individually considered against each of the factors on the column. If a factor has causal or correlational relationship on the column item, a one is indicated otherwise a zero value is given. For example, a 1 is placed on the intersection between a row and a column, indicating that the factor in the row influences the factor on the column. These items were plotted using UCINET^R, a general purpose computer program for network analysis (Borgatti, Everett, & Freeman, 1999; Borgatti et al., 2013) and netdraw^R a network visualisation tool within UCINET (Borgatti, 2002). The figure below represents the initial network of all the relationships between the indicators identified.

Figure 4: Network of Poverty Factors

To get the central factors, centrality measures were calculated (Borgatti et al., 2013). The clustering coefficient, a measure of the average of densities of the neighbourhood actors, which is difficulty to eliminate actors due to individual connections was used. The calculated centrality coefficient was obtained to be 0.537. Twenty (20) of these factors were found to have link with more than 30 other items. These are the most central and potential targets for elimination if we must have less poverty in the area of consideration. Eliminating those 20 items will require proper planning and implementation.

6.1.2. Ranking of Poverty Factors Using ANP

This section explores the use of the Analytic Network Process (ANP) to rank the twenty poverty factors identified as the most valuable to focus on in order to break the poverty web. The ANP is a multi-criteria theory of measurement used to derive relative priority of scales of absolute numbers from individual judgments. These judgments represent the relative influence, of one of two elements over the other in a pairwise comparison process on a third element in the underlying control criterion (Saaty, 2009). In this paper, the ANP is used to prioritize the factors of poverty in a complex decision-making problem as the network of relationships between the identified factors. Two scenarios, valuation and ranking of poverty factors are aimed. The ANP is used to make the decision on which of the factors should be prioritized for elimination ahead of others.

The methodology followed in doing the ranking is to select eight out of the 15 researchers amongst those who did the valuation to respond to well drafted and tested questionnaire to rank the identified 20 factors. Each of the factors is compared to the other against another to obtain the priority factors. Respondents answered series of questions (Up to 50 questions). An example of the question is 'with respect to the factors that drive poverty in Nigeria, which of the following factors, Education or Mental Health, will be responsible for poverty and by how much?'

The choice of 6 (colour red on the left) indicates that education is 6 times more influential to poverty than mental health. The result of the analyses is as presented in table 9 below.

Education	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Mental Health
Poverty of Identity				Poverty of Security				Poverty of Resources				Poverty of Cognition				Poverty of Relationships		
Freedom of Association Self-esteem Shame Mental Health				Protection of life Education Safe environment criminality				Nutrition Physical Health Sanitation Income Infrastructure Ownership of assets				Cognitive Deficiency Skills Knowledge				Social welfare Legislation Institutions		

Table 8: Human Needs

Source: The Author

The result ranked cognitive deficiency as the factor with the highest priority (Factor weight = 0.19662). That is, to eliminate poverty in Nigeria, any pro-poor project must consider cognitive development as the first priority. The next four highly ranked factors are legislation (weight = 0.14222), nutrition (weight = 0.11198), education (weight = 0.072), skills (weight = 0.05046) and shame (weight = 0.04774). Using SNA and ANP, it is possible to determine factors that have highest connectivity to others and whose elimination will make the poverty factors network weak and hence break the poverty network easier.

Factor	Weight	Factor	Weight	Factor	Weight	Factor	Weight
Cognitive Deficiency	0.19662	Freedom of assoc.	0.03290	Assets	0.01426	Sanitation	0.00629
Knowledge	0.04585	Mental Health	0.01402	Income	0.02245	Criminality	0.03289
Skills	0.05046	Self-Esteem	0.01909	Infrastructure	0.01116	Education	0.07270
Shame	0.04774	Legislation	0.14222	Nutrition	0.11198	Protection of life	0.01357
Institution	0.04761	Social welfare	0.02125	Physical Health	0.04087	Safe Environment	0.02066

Table 7: Ranking of the Twenty Poverty Factors

To visualise elimination of factors, consider a network that has been able to eliminate the five highest priority factors. The five highest priority factors considered here are explained above and their elimination results in figure 6 below.

Figure 5: Network of Poverty Factors after Removal of Five Factors

Note how the removal of only five items makes the network to appear less dense. The clustering coefficient also significantly dropped to 0.437, indicating that the other factors are not so closely tight and may be eliminated easily. However, designing policies that may eliminate these items without negative consequences is of paramount importance in poverty reduction and also consideration of the context. In the next section, a consideration is given to the design of policies that may be applicable to the five factors considered above.

7. Designing Pro-Poor Policies against Identified Five Poverty Factors

In this section, a brief policy design against the five identified factors of poverty will be developed. As indicated earlier, to be able to eliminate poverty, programmes should be pro-human and the society within which the people live. However, the beginning is to understand poverty itself and then design ways towards its reduction. As poverty is multidimensional involving multiple deprivations that are inter-linked, understanding the inter-linkages should help to develop more effective pro-poor growth strategies and to integrate these better into national policies against poverty. The pro-poor literature is growing. Some of these are academic, while others are written as policy design or reported experiences by policy makers and others are reported for individual sectors (Ichoku et al., 2012; Kuwawenaruwa et al., 2015; OECD, 2007; UNDP, 2009).

For Nigeria, overall economic growth was found not to be pro-poor. According to Ichoku et al. (2012), richer segments of the Nigerian population appropriate greater share of benefits from economic growth and that household larger in size were found to be poorer than those with smaller size. Similarly, many low-income countries design anti-poverty policies that exempt the poor from user charges in public facilities because the poor is not duly identified. To overcome these problems, in Tanzania, a scorecard system was established in 2011 within a programme for health services (Kuwawenaruwa et al., 2015). The authors advocated for policies that will address peculiarities of human needs in the different parts of the country as one size does not fit all. Thus, to design effective anti-poverty policies, poor countries should be able to have specific spending policy on programmes that eliminate identified poverty factors and further design budgets that targets the poor (Darma, 2016). The following sub-sections address the design of pro-poor policies for the five poverty-hub factors identified.

7.1. Cognitive Deficiency

The poverty and brain research literatures have indicated that the poverty and brain function affect one another (Shonkoff & Phillips, 2000). Indeed, some of these have shown that children that grew in poverty are more likely to

experience developmental delays, perform worse on cognitive and achievements tests and experience more behavioural and emotional problems than those who grew out of poverty (Duncan, Brooks-Gunn, & Klebanov, 1994). Further research indicates that child socioeconomic status (SES) is tied to educational achievement, health and psychological well-being (Al Hazzouri, Haan, Galea, & Aiello, 2011) and that poverty may shape the brain development at neural, cognitive and behavioural levels (Lipina, Simonds, & Segretin, 2011).

From the foregoing, it is clear that poverty affects cognition and as children grow in poverty, they are likely to have learning difficulties and may end up being poor themselves. As cognition is tied to educational achievement, children who grew up in poverty may perform poorly in school and other academic achievements. Similarly, as cognitive delays affect behaviour, children are most likely to have behavioural problems as they grow and may affect their well-being and social relationships. Cognitive deficiency affects emotional condition of the person involved leading to social miscreants as they grow. In sum, cognitive deficiency leads to other factors that may impact on poverty.

Due to recognition of cognitive deficiency as a factor that affects children and impacts on their behaviour as they grow, it is important to design policies that directly enrich the environments where children grow. For example, governments at all levels should ensure that children have toys in schools and have public parks where poor children can attend and play with other children. Social stimulation have been found to relate to brain changes (Kadosh, 2014). In addition to social stimulation, the government should also design programmes to enhance the development of at the very early stages of child programmes. Programmes like the school feedings (Falade, Otemuyiwa, Oluwasola, Oladipo, & Adewusi, 2012) with all the advantages have taken off in Nigeria, although there is no clear cut policy on it and the programme covers only about 30% of the pupils in the public schools. The feeding programme should be made in such a way that it does not only make the pupils feed, but also be made to develop their brain. Since socioeconomic indicators (SES) are proxies for good environment or otherwise, a pro-poor policy that targets environments should be such that promotes SES indicators. For policies to favour the poor, the participation of the poor in the design and the implementation of those policies should be a priority. For the school feeding programme, for example, a survey of the current needs of the pupils should precede the programme.

7.2. Legislations and Poverty

Legislation impacts on poverty in many ways. In Nigeria legislation and policies are the most politicized subjects (Omeje, 2007). As such legislations concerning the relevant areas that should help the development and growth of several sectors are thus unable to impact the sectors. The consequence of politicking or developing legislations that retard growth of several sectors in the economy or that fail to regulate the use of certain resources such as, oil and wood resources impacts negatively on the people and results in poverty.

Legislations that may influence poverty include those that are made for wages like the minimum wage legislations. Unskilled labour and the low paying wages are sources of poverty. For legislations on wages to be pro-poor, those legislations should take cognisance of the environment or context within which they are to be used. However, for Nigeria, such legislations are arbitrarily made in complete disregard to the situation of the country and the growing inflation. To make minimum wages legislation, the government should find avenues of cutting cost by reducing unnecessary expenditure or big expenses.

In most developing countries, violence, instability and at worst internal wars thrive. These conflicts drive migrations and compound the numbers in poverty. Nigeria is one of such countries that is said to be fragile because of the rate of conflicts. To curtail fragility, government should enact legislation that should take care of security and prevent the root causes of violence and instability.

Nigeria, like many other developing countries, has fewer girls in school and legislations such as keeping girls in school legislation is pro-poor. Also, as the violence occurs mostly in some regions and not much in others, a pro-poor legislation should target the most violent regions. Another pro-poor legislation is 'every mother and child legislation' which should target reduction of maternal and child mortality law. Other pro-poor legislations that should end or eliminate poverty include those for food security, health innovative legislation, entrepreneurship legislations, youth empowerment legislations and social palliative legislations. Also, there should be legislations for the environment, economic sector and land legislations.

7.3. Malnutrition and Poverty

Malnutrition or under nutrition may cause poverty at all levels of human development. Under nutrition leads to an array of health problems in children, some of which persist to adulthood while others manifest during adulthood (Rao & Beckingham, 2013). Undernutrition may lead to stunted growth in children, lead to chronic illnesses in adulthood due to loss of immunity and damages to other body system (Brown & Pollitt, 1996). Loss of immunity can lead to weakness in adults, loss of productivity and, in worst cases, death. Malnutrition is also known to disrupt cognition leading to poor school performance and intellectual development (Nelson, 2007). It may also hinder brain development by causing permanent structural damages to the brain (Carr & Descheemaeker, 2012). While loss of productivity leads to loss of income, ill-health leads to permanently being trapped in poverty due to inability to work and earn some income. Brain damages on the other hand may lead to behavioural problems and negative emotional conditions. Undernutrition is thus a major driver of poverty.

Low income is associated with poor nutrition at all stages. Carr and Descheemaeker (2012), trace the effect of malnutrition as the human develops. For example, breastfeeding by mothers who lack proper nutrition leads to high intake of acids by children and thus health issues. At the toddler level, there is a clear difference between those who grew in

poverty and the other toddlers. At school, children from poor neighbourhoods are academically and intellectually backward than those from well-off families.

Governments need to develop pro-poor policies that will help children and other persons consume more nutritional diets to improve health conditions of the population. Malnutrition is not only due to lack of calorific intake, but in some cases due to lack of essential nutrients (Brown & Pollitt, 1996; Golden, 1991). Therefore, a pro-poor policy against malnutrition includes taking annual national survey of nutritional requirement for children as different nutrients react to deficiencies in different ways. The survey may reveal what specific nutrients are lacking in particular locality's diets. Similarly, the survey will reveal the dietary issues associated with infants, toddlers, school children and adults for a locality. Pro-poor policy options are to reduce nutritional poverty by addressing the needs of the citizens. School feeding programme that is already in place should address nutritional needs of the pupils and not just food needs. There should also be the use of parks and some other public places for feedings and associated programmes for child development and growth.

7.4. Poverty and Education

Impact of education on poverty comes in several forms. One of the best ways to avoid being poor as an adult is to obtain 'good' education. People who have higher levels of academic achievements have been known to be more productive and thus earn more. However, despite the growing literature on impact of education on poverty and the impact of poverty condition on education, there is still disagreement on how to improve school systems for poor children in developing countries. Children in high poverty schools are not performing well due to a number of reasons (Connell, 1994). One of these reasons is that high-poverty lacks the capacity to improve students learning. Furthermore, school resources are lacking or unevenly distributed amongst the schools. There is also the lingering issue of over-population or high students-teacher ratio (STR).

Furthermore, Berthélemy (2006) points out that education policies in sub-Saharan Africa are on average biased against primary education. The author indicated that for the policies to be equitable, as it were in other parts of the world, the social rate of return on primary education should be higher than the social rate of return on secondary and tertiary education. Again, this inequity was demonstrated not only at educational levels but also at regional or social stratum. In Nigeria, for example, educational attainment varies widely by regions as well as by area of resident (Ichoku et al., 2012). Thus, development of pro-poor policies to improve educational attainment should be focused towards bridging identified areas and much more.

Pro-poor education policies should aim at creating sufficient incentives to 'poverty schools' to improve their flexibility to accommodate more pupils/students and for right kind of education. The social context in which these schools operate should be improved and be made more conducive for the pupils/students. To enhance learning, schools should be made to have less class sizes to enable teachers spend more time working with individual students. For poor students, the need for tailor subjects and instructional materials to cater for cognitively deficient pupils is important. Pro-poor education should also be aimed to produce effective teachers who are properly trained. A report on teachers need in Katsina state indicates that in 2013 only 58% of primary and 72% of Junior Secondary School (JSS) teachers were fully qualified and that in the primary schools as many as 100:1 STR is observed (Bennell, Anyanwu, & Dodo, 2015). Pro-poor policies should be designed to take care of the oversized classrooms and quality of teachers.

A pro-poor student incentive should be introduced. These are compensation for teacher performances. Compensation should be tied to students' outcome and a pro-student policy, 'allowance-for-performance' and 'rural-teacher-incentive' should be introduced. Of course, teachers should be paid using a developed 'teacher performance index', such that at measured threshold of performance teachers are paid. There should also be pathways into teaching programmes for civil servants who will take hours from their civil service works to teach in schools for additional pay.

7.5. Pro-Poor Skills Development

Skills development and education are both important to economic growth and poverty reduction. In Nigeria, the sectors of the economy that drive growth, such as infrastructure, retail, and manufacturing services, require vocational skills. These skills, though important for national development, are inadequate for countries like Nigeria, and where these are available, they are with poor quality.

Technical and vocational trainings are investments for the individual and the economy. The labour force is needed for technological growth and requires skills to make these industries grow. Therefore, research and policy development indicate the importance of skills development in Sub-Saharan African countries for several reasons (Favara, Appasamy, & Garcia, 2015). As the world becomes a global village with increase technological needs, competition for skills and productivity among workers is increasing. Workers with requisite skills are more readily able to be engaged and when at job to adapt to new knowledge and processes.

Pro-poor training for economic growth includes training for the informal sector of the economy and for small and medium scale industries. This training referred to as 'enterprise training' focuses on training for business development. Enterprise-based training is largely self-financing, self-regulating, and cost-effective (Johanson & Adams, 2004). Local enterprises provide the training. Johnson and Adams (2004) noted that the combination of enterprise-based training and nongovernment training institutions represent substantially greater capacity for skills development than is found in state-sponsored training institutions. It occurs without much government help. However, the role of the government is to negotiate tax reliefs for organizations that engage in such training and incentive for other establishments that may be used for such exercises.

Another pro-poor skill that is required in Nigeria is the skill to serve the informal sector of the economy. In view of limitations on public financing, training should focus on diversification of skills development toward new skills for the informal sector. There are five options available for training for the informal sector. Firstly, the government should shift its focus on the sector and create chances for the sector to grow and thrive. Secondly, government should sponsor specialised training especially in agricultural sectors. Thirdly, government should encourage the production and sale of goods and services by training institutions and the trainees in addition to getting markets for these products internationally. Fourthly, the products produced by the training centres and subsequently by those who were trained in these centres should be items that are in need by the immediate community. Fifthly, these products or services should be those that may be directly and indirectly consumed or used by the government.

The examples above represented only five of the factors or drivers of poverty. As Nigeria is heterogeneous, some of these factors may affect one state much more than they will affect others. Therefore, development of policies may not be uniform and for those policies to be sustainable, factors that may be state and time variants should take place. Therefore, for pro-poor policies, the no size fits all argument applies.

7.6. Further Considerations: Mediators and Contextual Complexities

To develop pro-poor policies, environmental complexities or what Chaisson (2015) referred to as the energy of complexity should guide the process. Poverty factors may be taken as systems within which energy flows. Energy flowing into complex system makes those systems more fragile than other systems. Therefore, understanding the sources of energy flow into the systems and blocking or stopping those flows will eventually break the systems. The unique circumstances and contexts and our understanding of poverty are important in designing policies appropriate for poverty reduction. For Nigeria, family life complexity may provide the fuel needed by poverty to grow or get reduced.

Furthermore, family structure or processes differ from states in one region and those of others. Therefore, for research and policy development, some of the family complexities involved must be considered. For example, some states have families that are polygamous in nature, demographic changes also occur within the family with parents aging with children who may not be able to take care of the family or even themselves. There is also high rate of divorces and re-marriages, number of adults who have biological children by more than one partner, prevalence of child maltreatment and the emerging phenomenon of unstable family relationships. Thus, innovative and effective approaches are required to handle issues of poverty and family. Similarly, more studies are needed to understand the extent to which poverty and related disadvantages affect cognitive skills. Although, the literature in this regard is growing (Hamadani et al., 2014; Helmer, 2015; A. Mani, S. Mullainathan, E. Shafir, & J. Zhao, 2013; A. Mani, S. Mullainathan, E. Shafir, & J. Zhao, 2013; Wicherts & Scholten, 2013) in depth, study is needed particularly on the cognitive processes to explain the transmission of poverty across generations.

8. Conclusion

This paper explained that the measures of development we use to assess national progress are deficient because they are not based on assessment of quality of human lives. The development of the paper was guided by the three research questions in section one. The major aim is to develop pro-poor policies are the main focus of the paper as the anti-poverty policies developed and implemented in Nigeria have not yielded the desired outcome.

The assessment of development of those policies, such as NEEDS, SURE-P and N-Power in Nigeria, for example, does not commensurate with the condition of the people in these countries. The paper reviewed anti-poverty policies in Nigeria, particularly, the NEEDS and PRSPs, which are documents developed in line with the IMF guidelines, to obtain debt reliefs and as a strategy for poverty reduction. For Nigeria despite these efforts, poverty, unemployment and dearth of social living conditions continue to rise while indicators of development also continue to show progress. It has, therefore, become necessary to emphasize different aspects of development, which focus on the progress of the people. People centred development using human development index has been promoted by the UNDP since 1990. The paper examined the developmental progress of Nigeria using HDI. It was found out that the country has been consistently ranked lowly over the years.

As the country is lowly ranked on HDI, it is essential for researchers and policy makers to develop ways to improve the efficiency of the anti-poverty policies, especially, as the expenditure on the development and implementation of these policies are growing by the years while the effectiveness falling. To answer the first and the second research questions, the paper suggested and demonstrated ways to identify poverty factors that are central to lingering poverty situations in Nigeria using social network analysis and analytic network process. Using the combination of these two tools, the third question was answered with the development of people focus policies against poverty using Netdraw^R (Borgatti, 2002), a network visualization function within UCINET^R (Borgatti & Freeman, 2002), an SNA procedure to value identified factors and ANP to rank them. Social network analysis indicated that twenty poverty factors out are the most central to the poverty network within the Nigerian context. These factors were ranked using Analytical Network Process to obtain five top ranked poverty factors. These five factors or 'poverty hub', if eliminated, may reduce the degree of connectivity of developed poverty network from .532 to almost 20% less. The paper then suggested pro-poor policies against these five factors.

The principal challenges to progress include contextual conditions, which are regarded as internal conditions, such as family complexities and internal conflicts, that can be controlled and external conditions (such as natural disasters or immigration), which are beyond the control of the country. Because external challenges are not nearly as obstructions as the internal ones, the paper suggested controlling for internal condition. This paper explored the use of system thinking and complexity theory for identifying and ranking poverty factors as well as for development of policies against poverty.

Further work should focus on how these ideas may be used to identify factors responsible for, or that cause poverty and the sources of energy that fuel them. Furthermore, research should also be directed at understanding the consequences of poverty and how these may, through feedback processes, complicate poverty conditions. Poverty consequences and consequences of poverty reduction, together with the interaction of factors, feedback on the initial factors compound to complicate each other. Mutation and bifurcation result and make poverty reduction strategy fail to work. Therefore, the use of system thinking may enable understanding of all of these poverty and consequential conditions. Complexity theory is important in understanding how these relate, interact and behave.

9. References

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