AN INVESTIGATION OF THE RANKING OF FACTORS THAT ARE CRUCIAL TO SUCCESSFUL POVERTY REDUCTION PROGRAMMES

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ABSTRACT

Until very recently, income level was largely regarded as the basic measure of poverty. However, there is now a new understanding that recognizes that the dimensions of poverty go beyond this paradigm. This study investigates the ranking of those factors that are crucial to a successful poverty reduction programme. The study employed the survey research design distributing copies of a questionnaire using the simple random sampling method. A total of 950 questionnaires were distributed to poverty reduction stakeholders, grassroots women and men, and other organizations that focus on poverty reduction in Nigeria. An analysis of the results revealed that past poverty reduction programmes embarked on by various administrations, did not take into consideration factors and alternatives that are essential to successful poverty reduction. The study has therefore prioritized these factors and alternatives.

Keywords: Investigation, ranking, crucial factors, poverty reduction, programme
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1. Introduction

In many developing countries of the world (including Nigeria) poverty reduction remains an arduous, astounding, and formidable challenge. Poverty is multifaceted and multi-dimensional, and it includes many types of deprivations, as well as affects different segments of the population. Hence, investigation or analysis of poverty must address the multidimensional aspect of the problem. Also, investigation of poverty reduction strategies should be multidisciplinary since solutions will demand many kinds of changes. There is no universally applicable strategy for the reduction of poverty affecting different people in different circumstances and different places over time. The development of multidisciplinary strategies therefore requires understanding the distributional effects of macroeconomic policies, the focus and efficiency of public expenditures, and the effectiveness of government programs and institutions.

Poverty could be defined as social, economic, political, cultural, and other forms of deprivation that affects individuals, households, a segment of the population and/or communities. A man or woman is considered poor if he or she does not have access to economic and productive resources such as land, income or other assets that could be used to satisfy basic needs and, as a result, lives in precarious conditions.

Poverty exists when a sub-group of people or an individual falls below a certain level of economic well-being that is considered a reasonable minimum, either in some absolute sense or by the standards of a given society. Poverty connotes a general condition of deprivation, the manifestations of which could come in the form of social inferiority, want of necessities, isolation, a lack or deficiency, hardship, meagerness or inadequacy, neediness, physical weakness, powerlessness and humiliation (Chambers Dictionary, 2005).

Nigeria is the most populous nation in sub-Sahara Africa, with enviable resources and one of the leading oil producing nations in Africa (UNDAF Report, 2007). The combination of these endowments should produce economic leadership and dynamic growth. Unfortunately, Nigeria is a country defined by its contradictions. Nigeria's cities claim pockets of opulence and wealth that rival any global capital, and yet are home to some of the poorest and most wretched slums on the African continent (UNDAF Report, 2002 – 2007). With enormous natural resources that exceed those of the most developed countries in the world, a short downpour floods the streets and homes in Nigerian cities for lack of proper drainage systems.

Poverty is not just an economic issue. It is also about powerlessness, discrimination, lack of representation, and lack of freedom. Poverty means that people go hungry, lack shelter, cannot consult a doctor when they fall sick, and cannot go to school. A phenomenon of rural dominance, poverty is multidimensional and non-uniform in occurrence.

1.1 Problem analysis

It would not be out of place to expect that Nigeria would have intensified efforts in the battle against poverty in pursuit of the Millennium Development Goals and Targets, which in September 2000 came from the Millennium Declaration (Human Development Report, 2001). The goals and targets of this Declaration are interrelated and should be seen as a whole. Nigeria's progress in pursuit of these goals and targets, particularly poverty reduction, has been very minimal. With less than four years until the target date, Nigeria does not appear to be on course to reach any of the MDGs by the 2015 deadline. Although the initiatives that poverty reduction stakeholders undertake are supposed to be relevant to the challenges, responsive to the right segment of the population, and are critically incorporated into policy frameworks, there is still too little to be seen in the form of practical results on the ground.

According to the Human and Income Poverty Index for developing countries, Nigeria's Human Poverty Index (HPI-1) rate stood at 37.3% in 2007. This ranks it 80th among 108 developing countries. As of 2005, Nigeria's population, with an income poverty line

below $1 a day, stood at 70.8%, while the population of those with less than $2 a day stood at 92.4%. This indicates that Nigeria performed better in human poverty than in income poverty (UNDAF Report).

Recognizing the devastating effect of poverty on Nigerians, successive governments in the country have recognized poverty as the most debilitating and pervasive problem confronting its citizens, and have tried to address the problem through one policy intervention or another. The previous attempts at poverty reduction in the country applied one or a combination of the following economic growth strategies: the basic needs approach or the rural development approach. These interventions were packaged in programmes and institutional arrangements of one form or another. A reform agenda for the economy, political system and government institutions including significant anti-corruption measures was put forward as Nigeria's home-grown poverty reduction strategy in 2004, in the form of the National Economic Empowerment and Development Strategy (NEEDS). Though NEEDS appeared to have provided an ambitious framework for positive change, focused on macro-economic reform and economic growth as the fundamental building clocks for poverty reduction, it cannot be said to have produced the desired results. The history of failed programmes and the particular failure of NEEDS necessitate this research work that investigates the ranking of factors that are crucial to a successful poverty reduction programme.

1.2 Objectives of the study

The objectives of the study include:

- identifying the forms poverty can take;
- identifying the criteria that could be used to redress each form of poverty identified;
- identifying the alternatives that could be used to meet the criteria;
- comparison of criteria with one another, and of alternatives with one another as per their importance or presence;
- ranking the criteria and alternatives under each form of poverty identified.

2. Related studies

In an ideal situation, every human being should have access to such basic needs as a minimum level of income and/or access to economic and productive assets, education, primary health care services, food and nutrition, safe drinking water and sanitation, markets and social security. Poverty is a deprivation of these essential assets and opportunities to which every human being is entitled. The resultant effect of these deprivations makes poverty one of the three greatest problems that have contributed to human crisis in the world accompanied by social disintegration and environmental degradation.

The World Bank tried to focus on poverty reduction in Nigeria during the regime years preceding 1999-2003, and so commissioned a study on poverty assessment (Human Development Report, 2001). The study revealed that poverty levels in Nigeria had been

extremely high, with about two thirds of the population living below the poverty line in 1996. The 2010 World Development Report shows that Nigeria's population earning below $1.25 a day was 68.5%, with a poverty gap of 32.1% at $1.25 a day; while the population earning below $2.00 a day was 86.4%, according to the survey conducted between 2003 and 2004.

Mabogunje (1999) defined poverty in relation to four vectors in the matrix of individual life chances of economic, social, environmental and governance vectors. Enkhbayar (2001) noted that fighting poverty is a complex task that requires complete mobilization of every potential the society possesses. Brown (2001) highlighted in the UNDP's Human Development Report that the poor themselves often allude to the importance of non-material deprivation. Whitehead (2003) opined that poverty reduction strategy papers/programmes should be based on a multidimensional view of poverty, while better integrating the non-economic dimensions of poverty with the economic dimensions, and giving space to the views of poor men and women about their own poverty. Daniel and Oyatoye (2011) examined the strategies for strengthening the capacity of grassroots women to overcome poverty by focusing on income and human poverty, using a community operational research.

2.1 The analytic hierarchy process

The Analytic Hierarchy Process (AHP) developed by Saaty (1980) has made a significant contribution towards understanding and explaining how decision makers exercise judgment when confronted with complex, non-programmable decisions. By allowing decision makers to model a complex problem in a hierarchical structure showing the relationships of goals, criteria, uncertainties, and alternatives, it allows for the application of experience, insight, and intuition in a logical and thorough manner. AHP has been successfully applied to a wide variety of problems and with the introduction of its PC implementation (Expert Choice and Team Expert Choice) a variety of decisions and planning projects has been greatly improved in nearly 20 countries (Alanbay, 2005). With Expert Choice software, AHP enables sensitivity analysis of results which is very important in practical decision-making. The AHP can be used to manage complex problems and to evaluate advanced manufacturing technologies. Sensitivity analyses are conducted to investigate the impact of changing the priority of the criteria on the alternatives' ranking. Dynamic sensitivity of Expert Choice might be performed to see how realistic the final outcome is. Dynamic sensitivity analysis is used to dynamically change the priorities of the criteria to determine how these changes affect the priorities of the alternative choices (Alanbay). Due to its wide applicability and ease of use, AHP has been studied extensively for the past two decades.

AHP enables decision makers to derive ratio scale priorities or weights from experience, insight, intuition, and hard data. In so doing, AHP not only supports decision makers by enabling them to structure complexity and exercise judgment, but allows them to incorporate both objective and subjective considerations in the decision analysis (Forman, 1993)**.** According to Saaty (2008), the measurement of intangible factors in decisions has defied human understanding for a long time. But, there are many more important factors that we do not know how to measure than there are ones that we have

measurements for, thus, knowing how to measure such factors could conceivably lead to new and important theories that rely on more factors for their explanations. According to Gensch (1973), "most quantitative models use media weights as experienced judgment factors". The model builders tend to stress the functional relationships postulated in the particular model, and to go into considerable detail concerning the unique mathematical properties found in their model. It is left to the model user to estimate the values of the particular media weights. Obviously, the accuracy and usefulness of any of the quantitative models is heavily influenced by the quality of the media weight estimates. Cheng and Li (2001) described this approach as a subjective methodology. In other words, information and the priority weights of elements can also be obtained from the decision-maker(s) or stakeholders using direct questioning or a questionnaire method.

AHP consists of several previously existing but un-associated concepts and techniques such as hierarchical structuring of complexity, pairwise comparisons, redundant judgments, an eigenvector method for deriving weights, and measuring consistency. Although each of these concepts and techniques was useful, Saaty's synergistic combination of the concepts and techniques, along with some new developments, produced a process whose power is indeed far more than the sum of its parts. While AHP has been applied to a wide variety of problems in various areas of endeavor, its application in addressing the issue of poverty as presented in this article is new.

3. Methodology

The data for the study were generated through three modes: questionnaire administration, personal interview, and informal focused group discussion. A total of 950 well-structured questionnaires, with open-ended questions, were distributed. The questionnaire was directed to stakeholders connected with poverty reduction programs and "focus groups". Sixty-five stakeholders were interviewed using open-ended questions to enable them give their own opinions on the subject as well as earlier identified criteria, sub-criteria and alternatives (pilot study). Based on the views expressed by stakeholders, a well-structured questionnaire was designed using Saaty's scale of preference. Three hundred copies of the questionnaire were administered to stakeholders connected with poverty reduction programs, while 650 copies of the same questionnaire as above were used for focus groups at their various informal group discussions. The administration of questionnaire to stakeholders and the interaction with the same focus groups took place simultaneously over a period of time as some people were trained on how to conduct the data collection. Owing to logistical problems, the distribution of the questionnaire was concentrated in states in the southern part of the country. However, out of the questionnaires retrieved, 638 (144 from stakeholders connected with poverty reduction programs and 494 from focused groups) were satisfactorily completed in full; hence, analysis of responses was based on the 638 useable questionnaires.

Table 1
Decision criteria and decision alternatives

	Economic Criteria	**Social Criteria**	**Environmental Criteria**	**Governance**	**Institutional criteria**
Decision alternatives	Access to Econ. & productive Resources, Wage Income, Credit facility, Electricity, Good Roads, Market facilities	Educational attainment, Maternal Health Care, information & knowledge, Recreational facilities	Decent Housing, Safe Drinking water, Sanitation & Waste disposal	Political participation in decision making, Personal security, Social security, Health Insurance Scheme, Basic Income Guarantee, Old Age Allowance	Training, Justice/Equity, Labour and employment, Communication and enlightenment, Tax Reduction,
	Eco. & PR	Edu. & HC, I&K, RF	DH & SDW	PP, PS, SS, HIS, BIG, OAA	Training, J&E, Tax Rebates, etc

Notes:
1. Each of the 5 decision criteria are influenced by the 5 groups of decision alternatives
2. The decision alternatives are abbreviated because of space.

Questions and statements in the questionnaire centered on the criteria alternatives and factors that could be used to eradicate or reduce income poverty and human poverty. The criteria and alternatives used are presented in Table 1. Respondents were requested to indicate their preferences in the form of a rating, when the criteria alternatives are compared with each other and when the factors are compared with each other. They were also asked to rate the factors in respect to the criteria alternatives by considering how much influence they have on the criteria with respect to poverty reduction (see Table 2).

Consistent with Anderson (2001), the following process was used in synthesizing judgment and determining the consistency of the respondents' responses. After determining the sum of all columns in the pair-wise comparison matrix, each element of the pair-wise comparison matrix is divided by its column total. The resulting matrix is referred to as the normalized pair-wise comparison matrix. Next, we obtain the average of each row in the normalized matrix. This gives the respective priorities: the global priorities, when comparison is with respect to the goal, and the local priorities, when comparison is with respect to the criteria. Adding all the values in the priority vector to ensure that the sum equals one, the resulting priority vector depicts the relative importance of each criterion in the decision. In synthesizing judgment, the global priority

vector is then multiplied by the local priority vectors in order to determine the overall priorities of the decision alternatives.

The consistency of judgments that the decision maker demonstrates during the series of pair-wise comparison is an important aspect in terms of the quality of the ultimate decision. However, before one becomes too concerned about a lack of consistency in the pair-wise comparisons, it should be realized that perfect consistency is very difficult to achieve and that some lack of consistency is expected to exist in almost any set of pair-wise comparison (Anderson, 2001

Table 2
Saaty's scale of preference

Numerical Scale	Verbal Scale	Explanation
1.0	Equally preferred	Two elements contribute equally
2.0	Fairly moderately more preferred	Experience and intuitions fairly favour one over the other
3.0	Moderately more preferred	Experience and intuitions favour one over the other
4.0	Fairly strongly more preferred	An element is fairly very dominant
5.0	Strongly more preferred	An element is very dominant
6.0	Fairly very strongly more preferred	Fairly very strongly dominant
7.0	Very strongly more preferred	Very strongly dominant
8.0	Fairly extremely more preferred	Fairly favoured by at least an order of magnitude difference
9.0	Extremely more preferred	Favoured by at least an order of magnitude difference.
For 1.1 – 1.9: use 1/2, 1/3, 1/4, 1/5, 1/6, 1/7, 1/8, 1/9	For nearly tied activities	When elements are close and nearly indistinguishable, use decimals; e.g.moderate is 1.3 and extreme is 1.9.

Note: Please enter the numerical scale in your responses

3.1 Analysis of responses

To estimate consistency ratio, each row of the pair-wise comparison matrix is multiplied with the priority vector. This gives a new vector, called the weighted sum vector.

Dividing the values of the weighted sum vector with the respective values of the priority vector yields a third vector, referred to as the quotient. We next compute λ_{max} by taking the average of this outcome to enable us obtain the consistency index (CI).

With the aid of the Expert Choice software applied on the generated pair-wise comparison matrices and synthesis of the data collected from the respondents, the pair-wise comparison for the criteria, factors, and alternatives were obtained with their respective inconsistency ratios. Math Card software was used to compute the eigenvalues and eigenvectors which aided the computation of the consistency indices and consistency ratios of the pair-wise comparison matrices. In all the computations, it was found that the consistency ratios were less than 0.1. This implies that the judgmental values given by the respondents are consistent. In other words, the small variables in the computation of eigenvalue and eigenvectors keep the largest eigenvalue λ_{max} close to n [where n is the number of the square matrix] and the remaining eigenvalues close to zero. The largest eigenvalues (λ_{max}) were used to calculate the consistency index given as:

$$CI = (\lambda_{max} - n)/(n - 1)$$

while CI is used to calculate the consistency ratio obtained as

$$CR = CI/RI$$

where RI is the random index given as$= RI = 1.99(n-2)/n$. For each of the matrices, where the CI and CR are ≤ 0.1, we assume that the judgmental values of the respondents are consistent. The matrices with their respective priorities, confirmed to be consistent, were then used in the analysis of the data generated from the respondents with respect to the goal of the study. Normalization for each of the sub-criteria weight was done. However, it is not possible to display all the computations of the priority value due to their length; hence, the analysis of the model results is based on the summary of our findings.

3.2 The model

The study developed and applied a consistent, integrated approach to modeling the welfare distributional effects of policy interventions which are known to affect households. The approach used identified parameters classified under five distinct sub-criteria: Economic; Social; Environment; Government; and Institutional factors under the two basic dimensions (criteria) of poverty, generally categorized as income poverty (economic poverty) and the human poverty.

Proponents of 'income poverty', see poverty in terms of external circumstances that inform an individual's economic decisions and transactions, while those of 'human poverty' believe that poverty is not simply what people do or do not have, but also what they can or cannot do (that is, a deprivation in the most essential capabilities of a person's or communities' life). These two dimensions are influenced by the same factors or sub-criteria (economic, social, environmental, institutional and governance issues) and the same groups of alternatives in some situations. The model used in this study has six levels structured as follows:

Level 1: Study goal (Ranking of factors that are crucial to a successful poverty reduction programme);
Level 2: Criteria made up of the Income and Human poverty dimensions;
Level 3: Sub-criteria consisting of factors influencing poverty dimensions;
Level 4: Two sets of alternatives employed to achieve the sub-criteria (alternatives A and B);
Level 5: Combination of the most preferred variables from alternatives A and B by priorities, to make up a set of alternatives C;
Level 6: Sub-criteria alternatives, comprising a set of most preferred alternatives by priorities from both criteria to achieve the study objectives.

4. Analysis of results

The model is displayed in Figure 4.1 (see key to the model in Appendix I). IP denotes income poverty and HP denotes human poverty.

4.1. Pair-wise comparison of criteria relatives to the goal

Tables 3a and 3b present the pair-wise comparison of the income poverty criterion and human poverty criterion, respectively, relatives to the goal of the study.

Table 3a
Pair-wise comparison for income poverty criterion

	Income poverty	Human poverty	Priorities
Income poverty	1	8.4	0.889
Human poverty	1/8.4	1	0.111

Inconsistency ratio (IR) = 0, consistency index (CI) = 0, consistency ratio (CR) = 0

Table 3b
Pair-wise comparison for human poverty criterion

	Human poverty	Income poverty	Priorities
Human poverty	1	1/7.5	0.111
Income poverty	7.5	1	0.889

Inconsistency ratio (IR) = 0, consistency index (CI) = 0, consistency ratio (CR) = 0

Expert Choice analysis of the data generated from the 638 respondents with an overall geometric mean of 8.4 from income poverty dimension shows that the income poverty criterion with a higher priority of 0.889, from both the pair-wise comparison with respect to income poverty and human poverty dimensions, is more preferred (or rates higher). Hence, a poverty reduction programme should pay more attention to income poverty criterion than to human poverty criterion.

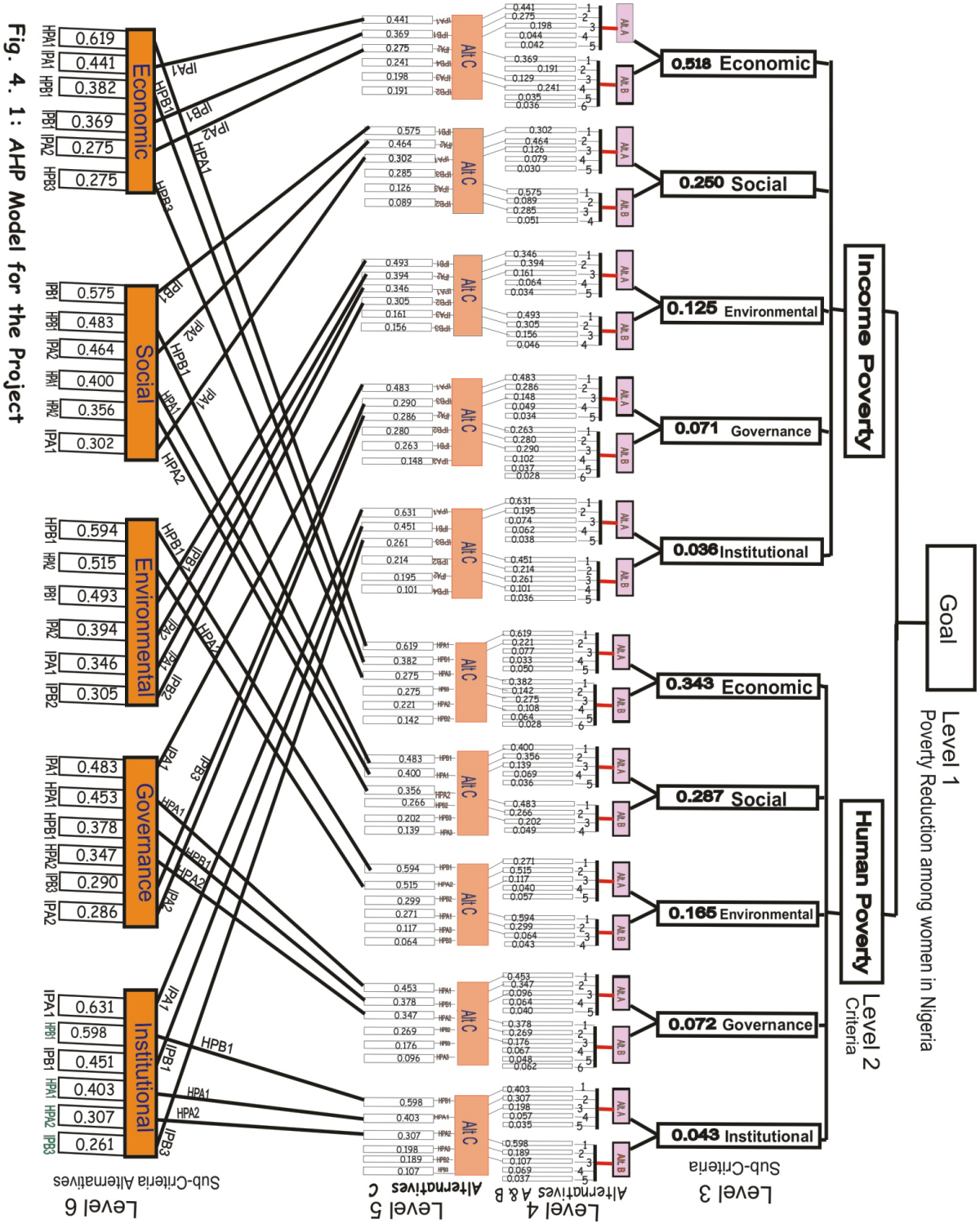

Fig. 4. 1: AHP Model for the Project

4.2 Pair-wise comparison of sub-criteria with respect to main criteria IP and HP

Table 4a
Pair-wise comparison of income poverty sub-criteria

	Economic	Social	Environmental	Governance	Institutional	Priorities
Economic	1	2	7.8	4	9	0.518
Social	1/2	1	2	4	8	0.250
Environmental	1/7.8	1/2	1	3	4	0.125
Governance	1/4	1/4	1/3	1	2	0.071
Institutional	1/9	1/8	1/4	1/2	1	0.036

Inconsistency Ratio (IR) = 0.07, consistency Index (CI) = 0.066, Consistency Ratio (CR) = 0.0553

λ_{max} = 5.264

Table 4b
Pair-wise comparison of human poverty sub-criteria

	Economic	Social	Environmental	Governance	Institutional	Priorities
Economic	1	2	2	8	7	0.434
Social	1/2	1	2	4	8	0.287
Environmental	1/2	1/2	1	2	4	0.165
Governance	1/8	1/4	1/2	1	2	0.072
Institutional	1/7	1/8	1/4	1/2	1	0.043

Inconsistency Ratio (IR) = 0.02, Consistency Index (CI) = 0.0238, Consistency Ratio (CR) = 0.0199

λ_{max} =5.095

Both income poverty and human poverty have five sub-criteria (as shown in the tables above). In order to design a poverty reduction programme that would be beneficial to the citizenry stakeholders need to consider these sub-criteria. Analysis of data collected from respondents generated an inconsistency ratio of 0.07, with zero missing judgments from the income poverty dimension and 0.02 from the human poverty dimension. The consistency ratios in both cases are 0.0553 and 0.01999, respectively, and these are less than 0.1; thus, it is assumed that the judgmental values of the respondents are consistent. From both the income and human poverty dimensions, economic sub-criteria have the highest priorities. Hence, poverty reduction programmes need to give first preference to the economic sub-criteria. This is followed by the social sub-criteria of the human poverty dimension and income poverty dimension with priorities of 0.287 and 0.250, respectively. The priorities of the other sub-criteria are: environmental 0.165 and 0.125, respectively, for human and income poverty dimensions; governance 0.072 and 0.071 for human poverty and income poverty; and institutional 0.043 and 0.036 for human poverty and income poverty, respectively. The order of these sub-criteria should therefore be given the necessary recognition when designing poverty reduction programmes.

4.3 Pair-wise comparison of alternatives (A) under economic sub-criteria of the income poverty criterion

This comparison considers the five groups of alternatives (A) featured in each of the five sub-criteria (economic, social, environmental, governance and institutional) under the

income and human poverty criteria in seeking the factors that are essential for a successful poverty reduction programme.

Table 5 presents the comparison of the groups in alternative (A) with respect to economic sub-criterion of the income poverty criterion. Access to economic and productive resources tops the alternatives with a priority of 0.441. This is followed by educational attainment, health care, information and knowledge; and recreational facilities with a priority of 0.275. The third group of alternatives [decent housing; safe water, sanitation and waste disposal; and access to electricity] has a priority of 0.198.

Table 5
Pair-wise comparison of alternatives (A) under economic sub-criteria

	Eco & PR	Edu, HC, I&K, RF	DH, SW, SDW, AE	PP, PS, SS, HIS, BIG, OAA	Training, J & E, Tax rebates	Priorities
Eco & PR	1	2	2	9	8	0.441
Edu, HC, I&K, RF	1/2	1	2	8	4	0.275
DH, SW, SDW, AE	1/2	1/2	1	8	8	0.198
PP, PS, SS, HIS, BIG, OAA	1/9	1/8	1/8	1	2	0.044
Training, J & E, Tax rebates	1/8	1/4	1/8	1/3	1	0.042

Inconsistency Ratio = 0.10, Consistency Index = 0.073, Consistency Ratio = 0.0611,λmax = 5.292

A similar comparison was carried out, using alternative (A) under each of social, environmental, governance, and institutional sub-criteria of the income poverty criterion. The same analysis was carried out, using alternative (A) in respect to each of the sub-criteria under the human poverty criterion. The analysis of alternative (B) groups in respect of each of the sub-criteria under the income poverty and human poverty criteria, respectively, were done in the same way.

4.4 Analysis of responses on income and human poverty sub-criteria alternative (C), using their priorities

A combination of the most preferred of alternatives A and B, which produced alternative C, was done to reduce the number of alternatives for more effective results at level 5 of the model. In other words, level 5 features a combination of six (6) alternatives with the highest priority values from groups in alternatives A and B under each sub-criterion at level 4 to make up alternatives C. Since the comparison matrices generated from the respondents proved to be consistent at level 4 of the model, it is also assumed that the judgmental values at level 5, being the products of same matrices, were consistent.

4.4.1 Analysis of income poverty alternatives (C) sub-criteria

The priority values were used in determining which alternative should be given more attention in the design and implementation of future poverty reduction programmes. In other words, the alternative or group of alternatives with the highest priority value is considered to be the most preferred, while the alternative or group of alternatives with the lowest priority value were assumed to be the least preferred.

Table 6a
Income poverty alternative C in economic sub-criterion

Code	Economic Sub-criterion Alternatives	Priorities
IPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, and markets	0.441
IPB1	Access to economic/productive resources: land, credit facility, electricity, good roads, markets facilities	0.369
IPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills and training programmes	0.275
IPB4	Constant electricity supply	0.241
IPA3	Decent housing and safe drinking water	0.198
IPB2	Wage income	0.191

Table 6b
Income poverty alternative C in social sub-criterion

Code	Social Sub-criterion Alternatives	Priorities
IPB1	Access to economic/productive resources: land, credit facility, electricity, good roads, market facilities	0.275
IPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills and training programmes	0.464
IPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, and market	0.302
IPB3	Access to labour and employment opportunities	0.285
IPA3	Decent housing and safe drinking water	0.126
IPB2	Access to health care services	0.089

Table 6c
Income poverty alternative C in environmental sub-criterion

Code	Environmental Sub-criterion Alternatives	Priorities
IPB1	Decent housing	0.493
IPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills and training programmes	0.394
IPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, and market facilities	0.346
IPB2	Provision of safe drinking water	0.305
IPA3	Decent housing and safe drinking water	0.161
IPB3	Sanitation and waste disposal	0.156

Table 6d

Income poverty alternative C in governance sub-criterion

Code	Governance Sub-criterion Alternatives	Priorities
IPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, market facilities	0.483
IPB3	Provision for social security	0.290
IPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills and training programmes	0.286
IPB2	Provision for personal security	0.280
IPB1	Political participation and decision-making	0.263
IPA3	Decent housing and safe drinking water	0.148

Table 6e

Income poverty alternative C in institutional sub-criterion

Code	Institutional Sub-criterion Alternative	Priorities
IPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, markets facilities	0.631
IPB1	Opportunities for training and capacity building in relevant vocational skills	0.451
IPB3	Labour and employment opportunities	0.261
IPB2	Justice and equity	0.214
IPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities	0.195
IPB4	Communication and enlightenment on the programmes and opportunities in the activities of government and its agencies	0.101

Tables 6a through 6e present analysis of alternatives (c) with respect to the five sub-criteria of the income poverty dimension. From the Tables, it could be observed that future poverty reduction programmes that would have a significant impact on the lives of the people would achieve the best possible results if the alternatives were given attention according to judgment values of the respondents. This could be accomplished by using the above priorities tables, such that the alternatives with the highest priority value under each of the sub-criteria is given preference over alternatives with lower priority. Thus, the alternatives grouped as access to economic and productive resources, which received the first and second highest priority values (0.441 and 0.369) among the six groups under the economic sub-criterion, should be accorded the highest preference in the design and implementation of future poverty reduction programmes.

Similarly, the alternatives grouped as IPA2 and IPA1 should be given preference under social sub-criterion; while alternatives IPB1 with priority 0.493, IPA2 with priority 0.394, IPA1 with priority 0.346 and IPB2 with priority 0.305, should be given preference in that order under the environmental sub-criterion. In the case of the governance sub-criterion, the alternatives in IPA1 group, with priority 0.483, should be given preference; while under the institutional sub-criterion, alternatives in the groups IPA1 and IPB1 should be given preferences in that order.

4.4.2 Analysis of human poverty alternatives C sub-criteria

Table 7a

Human poverty alternatives C in economic sub-criterion

Code	Economic Sub-criterion Alternatives	Priorities
HPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, market facilities	0.619
HPB1	Access to economic/productive resources: land, credit facility, electricity, good roads, and market facilities	0.382
HPA3	Decent housing and safe drinking water	0.275
HPB3	Availability of microcredit facility	0.275
HPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills and training programmes	0.221
HPB2	Constant electricity supply	0.142

Table 7b

Human poverty alternatives C in social sub-criterion

Code	Social Sub-criterion Alternatives	Priorities
HPB1	Educational attainment	0.483
HPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, market facilities	0.400
HPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills and training programmes	0.356
HPB2	Maternal health care services	0.266
HPB3	Information and knowledge facilities	0.202
HPA3	Decent housing and safe drinking water	0.139

Table 7c

Human poverty alternatives in environmental sub-criterion

Code	Environmental Sub-criterion Alternatives	Priorities
HPB1	Decent housing	0.594
HPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills and training programmes	0.515
HPB2	Safe drinking water	0.299
HPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, market facilities	0.271
HPA3	Decent housing and safe drinking water	0.117
HPB3	Sanitation and waste disposal	0.064

Table 7d

Human poverty alternatives C in governance sub-criterion

Code	Governance Sub-criterion Alternatives	Priorities
HPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, and market facilities	0.453
HPB1	Political participation and decision-making	0.378
HPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills and training programmes	0.347
HPB2	Personal security	0.269
HPB3	Social security	0.176
HPA3	Decent housing and safe drinking water	0.096

Table 7e
Human poverty alternatives C in institutional sub-criterion

Code	Institutional Sub-criterion Alternative	Priorities
HPB1	Opportunities for training and capacity building in relevant vocational skills	0.596
HPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, and market facilities	0.403
HPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities	0.307
HPA3	Decent housing and safe drinking water	0.198
HPB2	Justice and equity	0.189
HPB3	Labour and employment	0.107

Tables 7a through 7e present analysis of alternatives (c) with respect to the five sub-criteria of the human poverty dimension: economic, social, environmental, governance, and institutional. From the economic sub-criterion alternatives (Table 4.5(a)), access to economic and productive resources has the highest priority values of 0.619 and 0.382, from human poverty alternatives A1 and B1, respectively. This is followed by decent housing and safe drinking water, and availability of microcredit facility with a priority of 0.275. In the social sub-criterion alternatives, educational attainment and access to economic and productive resources were neck-to-neck with priorities of 0.483 and 0.400, respectively.

Significant recognition should also be given to maternal health care services (priority 0.266) among the social sub-criterion alternatives. Out of the environmental sub-criterion alternatives, decent housing ranks highest with priority 0.594. This is followed by the HPA2 group of alternatives with priority 0.515; provision for safe drinking water with 0.299, and access to economic and productive resources with priority 0.271. For the alternatives under governance sub-criterion, priority should be accorded to access to economic and productive resources, political participating and decision making in that order. The need to make necessary provision for educational attainment, health care services, information and knowledge facilities, recreational facilities should also be given some attention. Making provision for personal security of the citizens also received some significance. Opportunity for training and capacity building ranks highest among the alternatives under the institutional sub-criterion with a priority of 0.596. This is followed by access to economic and productive resources (0.403) and educational attainment and health care services group with priority 0.307. Surprisingly in a country where people have always clamored for justice and equity, respondents' judgmental values seem to rate this alternative low under institutional sub-criterion. This rating may be due to the fact that the alternatives do not have much to do with the main subject of study.

4.5 Analysis of the sub-criteria (factors) alternatives with respect to study goal

From the synthesis in Table 8, access to economic and productive resources, such as land, credit facility, electricity, good roads, and provision of markets appear most critical for poverty reduction programmes. Opportunities for training and capacity building in relevant vocational skills, particularly for the majority of the populace with limited education should receive significant attention in future poverty reduction programmes. Attention needs to be paid to provision of decent housing facilities under environmental

factors needs. Educational attainment of youth, health care services, information and knowledge facilities, recreational facilities, and vocational skills and training programmes could also help in alleviating human poverty. Other alternatives that should be incorporated into future poverty-reduction programmes include: opportunity for political participation, participation in decision making, and provision of social security.

Table 8
Ranking of the sub-criteria alternatives

Code	Sub-criteria alternative	Priority	Ranking	Sub-criterion
IPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, market facility	0.631	1	Institutional/ Income
HPA1	Access to economic/productive resources: land, credit facility, electricity, good roads, market facility	0.619	2	Economic/ Human
HPB1	Opportunities for training and capacity building in relevant vocational skills	0.598	3	Institutional/ Human
HPB1	Provision of decent housing facilities	0.594	4	Human
IPB1	Access to economic/productive resources: land, credit facility, electricity etc	0.575	5	Social/Income
HPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, etc	0.515	6	Environmental/ Human
IPB1	Access to economic/productive resources: land, credit facility, etc	0.493	7	Environmental/ Income
IPA1	Access to economic/productive resources: land, credit facility, etc	0.483	9	Governance/ Income
HPB1	Access to economic/productive resources: land, credit facility, etc	0.483	9	Social/Human
IPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills etc	0.464	11	Social/Income
HPA1	Access to economic/productive resources: land, credit facility, etc	0.453	12	Governance/ Human
IPB1	Access to economic/productive resources: land, credit facility, etc	0.451	13	Institutional/ Income
IPA1	Access to economic/productive resources: land, credit facility, etc	0.441	14	Economic/ Income
HPA1	Access to economic/productive resources: land, credit facility, etc	0.403	15	Institutional/ Human
HPA1	Access to economic/productive resources: land, credit facility, etc	0.400	16	Social/Human
IPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills etc	0.394	17	Environmental/ Income
HPB1	Access to economic/productive resources: land, credit facility, etc	0.382	18	Economic/ Human
HPB1	Opportunity for political participation and participation in decision making	0.378	19	Governance/ Human
IPB1	Access to economic/productive resources: land, credit facility, etc	0.369	20	Economic/Income

HPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills etc	0.356	21	Social/Human
HPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills etc	0.347	22	Governance/Human
IPA1	Access to economic/productive resources: land, credit facility, etc	0.346	23	Environmental/ Income
HPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills etc	0.307	24	Institutional/Human
IPB2	Provision of safe drinking water	0.305	25	Environmental/ Income
IPA1	Access to economic/productive resources: land, credit facility, etc	0.302	26	Social/Income
IPB3	Provision of social security	0.209	27	Governance/ Income
IPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills etc	0.286	28	Governance/ Income
IPA2	Educational attainment, health care services, information and knowledge facilities, recreational facilities, vocational skills etc	0.275	29	Economic/Income
HPB3	Access to microcredit facility for micro-business ventures	0.275	30	Economic/Human
IPB3	Access to labour and employment opportunities	0.261	31	Institutional/Income
IPB1	Provision of decent housing	0.493	7	Environmental/ Income

5. Discussion

The different analyses done in this study point out that the attempts made by various administrations to address the problem of poverty in the country pursued the wrong strategies and focused on the wrong elements. Firstly, the multi-dimensional nature of poverty was never considered. Secondly, historically in Nigeria, poverty reduction programmes have been designed to enrich a selected audience of whom the majority were far above the poverty level. This study has therefore brought to light the need for the Federal and State governments to have a proper focus when putting in place programmes that will alleviate poverty among the people. More effective programmes can be planned if people who have knowledge of the multi-dimensional nature of poverty are consulted and brought together to work on their development. Poverty-reduction programmes must also consider differences in cultures even within the country. These cultural differences may require different approaches and focuses in the programmes from one region to another.

APPENDIX I

Key to the Research Model: Criteria and the Sub-criteria Elements

Income Poverty Sub-criteria Elements

Code	Abbreviations	Factors
Sub-criteria Alternatives A		
IPA1	1. Eco. & PR	Economic
IPA2	2. Edu. & HC, I&K, RF	Social,
IPA3	3. DH & SDW	Environmental,
IPA4	4. PP, PS, SS, HIS, BIG, OAA	Governance,
IPA5	5. Training, J&E, Tax Rebates,	Institutional
Sub-criteria Alternatives B		
IPB1	1.Econ & PR	Economic
IPB2	2.Wage income	
IPB3	3.Credit facility	
IPB4	4.Electricity	
IPB5	5.Access Roads	
IPB6	6.Markets	

IPB1	1.Educational Attainment	Social
IPB2	2.Maternal Health Care services	
IPB3	3.Information & Knowledge	

IPB4	4. Recreational facilities	
IPB1	1. Decent Housing	
IPB2	2. Safe water	Environmental
IPB3	3. Sanit. & waste Disposal	
IPB4	4. Access to Electricity	

IPB1	1. Pol. Part. and Dec. Making	
IPB2	2.Personal Security	
IPB3	3. Social Security	Governance
IPB4	4. Health Ins. Scheme	
IPB5	5. Basic Income Guaranty	
IPB6	6. Old Age Allowance	

IPB1	1.Training/Capacity Building	
IPB2	2.Justice & Equity	
IPB3	3.Labour & Employment	Institutional
IPB4	4.Comm. & Enlightenment	
IPB5	5.Tax Considerations	

Human Poverty Sub criteria Elements

Sub-criteria Alternatives A

HPA1	1. Eco. & PR	Economic
HPA2	2. Edu. & HC, I&K, RF	Social,
HPA3	3. DH & SDW	Environmental,
HPA4	4. PP, PS, SS, HIS, BIG, OAA	Governance,
HPA5	5. Training, J&E, Tax Rebates,	Institutional

Sub-criteria Alternatives B

HPB1	1.Econ & PR	Economic
HPB2	2. Wage income	
HPB3	3. Credit facility	
HPB4	4. Electricity	
HPB5	5.Access Roads	
HPB6	6. Markets	
HPB1	1.Education Attainment	Social
HPB2	2.Maternal Health Care	
HPB3	3.Info & Knowledge	
HPB4	4.Recreational facilities	

HPB1	1.Decent Housing	Environmental
HPB2	2.Safe water	
HPB3	3.Sanit. & waste Disposal	
HPB4	4.Access to Electricity	

HPB1	1. Pol. Part. and Dec. Making	Governance
HPB2	2.Personal Security	
HPB3	3.Social Security	
HPB4	4.Health Ins. Scheme	
HPB5	5.Basic Inc. Guaranty	
HPB6	6.Old Age Allowance	
HPB1	1.Training & Capacity Building	Institutional
HPB2	2.Justice & Equity	
HPB3	3.Labour & Employment	
HPB4	4.Comm. & Enlightenment	
HPB5	5.Tax Considerations	

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