

Are You Being Served? Governance and Deprivation in Nigeria

CPPA Studies on Inequality Human Development and Economic Transformation

This study argues that of the varieties of inequality, deprivation through poor governance is the most disconcerting because of its pervasive role in perpetuating wealth inequality. Health is wealth. Using standardized UNDP data on education and health—two strategic factors for growth and human development—we benchmark Nigeria's long-term governance record on citizen-care. Africa's largest oil producer, having the largest market potential, the largest GDP and a generous endowment of natural-resource diversity ranks 36 out of 46 countries in the sample, locating at the cusp of the lowest quintile of the quality of governance rank ordering, above Gabon but below Chad, Cameroon and very far below Togo. Why?

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1. Introduction

Specifically, this study elaborates how the conduct of governments can collectively impoverish its people; a behavior which we tag *collective deprivation* or *immiseration*. Broadly, it pursues two related objectives; one methodological and the other empirical. Conceptually and methodologically, it links aggregate inequality to the quality of governance and derives an index of quality of governance based on impoverishment of the citizenry by the state. Empirically, it calculates the governance index for a sample of African governments and compares performances across that cohort. The performance of the Government of Nigeria, the principal focus of the study is then benchmarked against the group. In effect, this study assesses the long-term performance of governments in improving the general welfare of their citizens. Similarly, as scholars focus on long-run growth in assessing the performance of the economy, so do we here focus on long-run performance of governments in assessing the quality of governance.

Our analysis is based on the presumption that the government can make a difference if it so desires. That the capability in turn presumes the existence of a feasible policy process that begins with the availability of *policy instruments*. Policy instruments are a set of policy choices available to the government and directly controlled by the policymakers. Policy instruments can be manipulated to reach a desired value of an operating target. *Operating targets* could be political variables, macroeconomic variables, socioeconomic variables or a combination. In addition to being controllable, operating targets should also have a predictable effect on intermediate targets. *Intermediate targets* are fundamental factors presumed to have a stable relationship with policy objectives, the objective in this case, being *human welfare*. The foregoing ideas can be represented schematically as a process flow proceeding from:



Methodologically, wealth and income inequality within countries are assessed by evaluating income and wealth disparities between households in the same country. Likewise, we compare disparities in the service of citizens by their respective governments within the Africa region. Just as the



common factor in national income surveys is sovereignty, so is political competition the common factor here. All governments in Africa, to varying degrees, face contested political domains. These contestations can manifest in the search for votes or the quest to establish legitimacy through other means than the ballot box or yet through confronting competition from ambitious elites seeking ascendancy. Therefore, having established a common ground for these governments namely, that they all seek political expediency in their policy choices, deficiencies in the uplifting of the people are viewed as material deprivation and cannot conveniently be explained away by invoking politics. Every government engages in politicking. Therefore, politics here is not an acceptable reason for being out-ranked by peer countries.

National disparities in how citizens are served are then conceptualized as aggregate inequality due to the deliberate choice of governments. Individual country performances are used to generate a relative frequency distribution that forms the basis against which countries are benchmarked. The underlying assumption that a government can uplift its citizens to the best of its capability having regard to its resource constraints leads to the thesis that *a government's failure to uplift its citizenry perpetuates aggregate inequality.*

2. Inequality matters

The world seems to be concerned about inequality in its many manifestations. Thomas Freidman expresses this global concern in the *Lexus and the Olive Tree*. Joseph Stiglitz, the 2001 Nobel laureate in Economic Science and previously Chief Economist of the World Bank expresses the same concern in this book, *Globalization and its Discontents*. Another former Chief Economist of the World Bank, Kaushik Basu labels the discontents-discourse as the *Stiglitz Verdict*. Other discontents include Branko Milanovic in his paper, *The Two Faces of Globalization: Against Globalization as we Know it*.¹

The World Bank expresses its continuing concern about income distribution and inequality by stressing that the nature of growth is just as important as growth per se. That abiding concern and the momentum it has generated, perhaps from the Bank's influence and convening power helped in promoting the "inclusive growth" agenda, a term that has solidified in the development

¹ Milanovic (2003).



literature. Thomas Piketty in his book, *Capital in the 21st Century* raises pretty much similar concerns about inequality. Many years ago, Richard Thaler in one of his feature articles in the series “Anomalies” in the *Journal of Economic Perspectives*, one of the flagship publications of the American Economic Association, makes a related point. This 2017 Nobel laureate in Economic Science used the *Ultimatum Game* to highlight the strong social preference for the norm of fairness. His point was to show how in repeated plays of the experimental game of bargaining, society as represented by the players in that game, overwhelmingly signaled their unrelenting preference for fairness (Thaler, 1988). Yet another Nobel laureate in Economic Science Amartya Sen, in his famous book *Development as Freedom*, emphasized the lack of voice as an important aspect of inequality, among other crucial dimensions. Sen’s treatise on this subject is prodigious. One reader summarized him thus: “The short version: the rich get[s] richer and the poor remain deprived of abilities and awaiting enlightened development.”²

Yet to other members of the society, it is the gender agenda—the human rights imperatives of the LGBT issues—that lie at the heart of contemporary discourse on inequalities.³ In a collection of essays by eminent scholars on this issue, edited by Ayogu and Ross (2004), these co-authors express this collective concern in their volume *Development Dilemmas*. As a book, *Development Dilemmas* is a multidisciplinary critique of the neoclassical paradigm of economic convergence in both of its forms, absolute convergence and conditional convergence. The volume argues that the predictions of the convergence (closing inequality) paradigm have not panned out. Another important establishment, the OECD in a report *Are We Growing Unequal?* expresses its concern for the course of inequality amongst even its own admittedly relatively affluent member states.⁴ The report paints a rather disturbing picture of wealth and income dynamics in industrialized nations that is instructive for emerging markets and other less developed countries. William Easterly’s book *The Tyranny of Experts* voices his outrage at inequities especially as facilitated by the aid policies and practices of the international donor agencies and development institutions.

² Available online <https://www.getabstract.com/en/summary/economics-and-politics/development-as-freedom/2837/> accessed May 22, 2018.

³ LGBT is the acronym for lesbians, gays, bisexuals and transgenders.

⁴ OECD is Organization for Economic Cooperation and Development; see www.oecd.org/about/ for more information on the organization. The publication is available at <https://www.oecd.org/els/soc/41494435.pdf>



The book opens with a poignant example of the unfortunate fate of the people of Mubende District in Uganda, a fate that was deliberately orchestrated by the world's chief development institution, the World Bank.

Very few, if any, of the aid agencies and philanthropies would not overtly count poverty eradication and inequality as core concerns. The currency of the issue is easily proven by a simple survey to identify the number of charity foundations and other philanthropies which do not claim inequality as a concern. Indeed, inequality and governance appear to be a common cause. In his book, *Capital without Borders*, Brooke Harrington shares his perspectives on the phenomenon of how the top one percentile of the world keeps grabbing most of the wealth being created. In 2015 the OECD hosted the annual conference of the Institute for New Economic Thinking.⁵ The theme of that year's conference was "Liberty, Equality and Fragility." Thomas Piketty was the keynote speaker at the event which featured other equally distinguished champions of "égalité" like Joseph Stiglitz and Sam Bowles.⁶ Sam Bowles' work on the origins of economic inequality is as illuminating of our understanding of inequality as are his predictions about the future of wealth dynamics which is insightful for identifying a probable path to ending the growth of inequality. Achieving a zero-growth rate of inequality is undoubtedly a crucial step towards a meaningful process of closing the inequality gaps.

In 2008, the OECD released a report of an extensive survey of member countries to identify trends in income inequality over a period of twenty years. The discovery of widening inequality came as a surprise given the profile of the member countries and the expectation that by comparison to the rest of the world, comprised mainly of emerging markets and developing nations with less affluence, life can only get better among such developed countries. Two striking facts emerged from the study. The crucial role of public capital (infrastructure) and the potentially mitigating effect of social spending. In other words, the role of governance or public policy.

⁵ Established by George Soros et al., the Institute for New Economic Thinking is "a New York City-based nonprofit think tank, founded in October 2009 as a result of the 2007–2012 global financial crisis." See www.ineteconomics.org

⁶ Sam Bowles can be described as a man whose lifelong preoccupation has been inequality. Professor Emeritus, University of Massachusetts at Amherst, he is currently at the Santa Fe Institute working on the Dynamics of Wealth Inequality. He co-founded the project a decade ago with Monique Borgerhoff Mulder, an Anthropologist from the University of California at Davis. Their project brings together quantitative social scientists, dynamical-systems modelers, and other contributors modeling the evolution of inequality as well as field workers doing primarily ethnographic work. http://tuvalu.santafe.edu/~bowles/behavioral_prog.htm; accessed May 23, 2018.



The gap between rich and poor in most OECD countries has widened over the past two decades. This risks [sic] leaving more people behind in an ever-changing world economy. But the trend to greater inequality is not inevitable: governments can close the gap with effective social policies, many of which do not need more social spending (OECD, 2008, p.1).

3. Why and how inequality matters

Scientists argue that a society that is growing more unequal is problematic.⁷ Researchers at the Santa Fe Institute who recently charted inequality across millennia summarized the situation by warning that, “We’re not helping ourselves by being so unequal.”⁸ Nobody is safe.

I have got economically zero unemployment in my city, and I’ve got thousands of homeless people that [sic] actually are working and just can’t afford housing said Seattle City Councilman Mike O’Brien. “There is nowhere for these folks to move to.” ... San Diego now scrubs its sidewalks with bleach to counter a deadly hepatitis A outbreak. In Anaheim, 400 people sleep along a bike path in the shadow of Angel Stadium. Organizers in Portland lit incense at an outdoor food festival to cover up the stench of urine in a parking lot where vendors set up shop (Flaccus and Mulvihill, 2017).

History tells that once inequality sets in, the gap becomes even more difficult to close without some catastrophic discontinuity such as plague, revolution, war or state collapse. Scholars of inequality like to highlight the role of path dependency on wealth dynamics which is in effect a more palatable way of admitting that the game of wealth and income dynamics is largely one of the rich getting richer while the poor get poorer.⁹ Such tacit acknowledgment also finds expression in wealth and investment discourse where experts extol the power of compounding and of exponential growth. By contrast, the inverse terms expressed with remarkable regularity in development circles and aid agencies are “poverty traps” and “low equilibria.” These doom and gloom expressions which patently connote cycles of poverty require little effort to make the case that the prospects of *the rich getting richer while the poor get poorer* are not harbingers of happy endings.

For years, Stanley Timmings, 62, and his 61-year old girlfriend, Linda Catlin, were able to rent a room in a friend’s house on their combined disability payments. Last spring, that friend died of colon cancer and the couple was thrust on Seattle’s streets. Timmings used their last savings to buy

⁷ <https://santafe.edu/news-center/news/new-study-charts-inequality-across-millennia/> accessed April 16, 2018.

⁸ Ibidem.

⁹ This expression finds voice through many avenues including the lyrics of legendary artists like Fela Anikulapo Kuti and Jimmy Cliff, appearing explicitly in the latter’s song, *Suffering in the Land* (Universal Music Publishing Group, 1969).



a used RV for \$300 and spent another \$300 to register it. ... Now, the couple parks the RV near a small regional airport. They have no drinking water and no propane for the cook stove. They go to the bathroom in a bucket and dump it behind a nearby business. After four months, the stench of human waste inside the RV is overwhelming (Flaccus and Mulvihill, 2017).

Ostry et al. (2003) argue that “inequality can undermine progress in health and education, cause investment reducing political and economic instability and undercut the social consensus required to adjust in the face of major shocks and thus it tends to reduce the pace and durability of growth.” In short, it can move a country to a lower long-run growth trajectory. Krugman (2013) notes that rising inequality has a profound impact on the size and purchasing power of the middle class. Several arguments have been put forward to establish the importance of the middle class in the dynamics of economic development. Some of these include the ability of the middle class to foster entrepreneurship, shift the composition of consumer demand (i.e. promote increases in product varieties) as well as induce and support economic reform.¹⁰

On entrepreneurship and product varieties, there are valuable lessons from the industrialization experiences of both South Korea and Australia regarding the role of the middle class. In Australia, economic activities benefitted from “rural expansion and the growing prosperity of farmers ... *sharing a rising national income as widely as possible among its citizens* [emphasis added]—an important booster to local demand in an import-substituting regime.¹¹” At the initial stages of industrialization, the role of a growing middle class in boosting the development of domestic manufacturing in light industries is common to both Australia and South Korea. Similarly, in both of these countries, managing social discontents by promoting shared growth was pivotal in sustaining the gains towards industrialization seen as part of their overall economic diversification strategy. Along the development path, emerging social discontents were presumably unleashed by the distributional consequences of rising income considered inevitable in a fast growing and developing economy.

Krugman (2013) makes a related argument about why inequality matters and for an example cites its role in delaying the implementation of the adjustment required to pull the U.S. out of its economic mess.

¹⁰ On entrepreneurship, see Acemoglu and Zilibotti (1997); on consumer demand, see Murphy et al. (1989), and on support for economic reform, see Birdsall et al (2001).

¹¹ Ayogu and Dezhbakhsh (2012), p.53



... we have yet to see whether President Obama's declaration that inequality is "the defining challenge of our age" will translate into policy changes. Still the discussion has shifted enough to produce a backlash from pundits arguing that inequality isn't that big a deal. They're wrong. The best argument for putting inequality on the back burner is the depressed state of the economy. Isn't it more important to restore economic growth than to worry about how the gains from growth are distributed?

Well, no.

First of all, even if you look at the direct impact of rising inequality on middle-class Americans, it is indeed a very big deal. Beyond that, inequality probably played an important role in creating our economic mess, and has played a crucial role in our failure to clean it up (ibidem).

In *The Federalist, No. 51*, James Madison argued that, "If men were angels, no government would be necessary. If angels were to govern men, neither external nor internal controls on government would be necessary. In framing a government which is to be administered by men over men, the great difficulty lies in this: You must first enable the government to control the governed; and in the next place oblige it to control itself. A dependence on the people is no doubt the primary control on the government; but experience has taught mankind the necessity of auxiliary precautions..."; these precautions being among others, a dispersion of power among the citizenry. The bedrock of the citizenry is the middleclass and the middleclass is what growing-inequality denudes.

The impact of rising income-inequality on the middleclass is troubling because it squeezes this class of income earners. Such displacements would not be troubling if they shoved the middleclass to the high end of the income distribution. On the contrary, narratives of growing inequality such as those detailed herein point to an increasingly high concentration of wealth in a few hands. To mix metaphors, what seems to be happening is that the wind is sucked out of the lungs of a broad spectrum of the middle class and passed on to a narrowing spectrum of top income bracket, thus weakening social foundations.

Immiseration of the middleclass alters the wealth distribution curve by skewing it to the right. Such skewness has troubling implications and so requires further discussion. A common tool of descriptive statistics capable of rendering more intuitive the concept of skewness is the histogram. Histograms or relative frequency distributions come in varying shapes that can be conveniently described by their symmetry. Useful numerical values which characterize a frequency distribution

are its mean, median and mode. The mean value describes the central tendency of the set of values in the distribution in question; the median is the middle value whereas the mode is the most common value. Thus, the modal income is the income bracket having the highest number of income earners.

A normal curve is bell shaped and symmetric about the mean. The mean, mode, and median values coincide. In effect, the mean of a normal distribution is representative of that population or sample. By contrast, the mean of a positively skewed distribution is less representative of its population or sample (see Figure 1). When applied to income inequality, there are other interesting implications of a skewed income distribution beyond the unrepresentativeness of the mean income. The mean of a positively skewed income distribution lies at a higher income bracket but at a lower relative frequency than the mode or median. Lying at a lower relative frequency means that the proportion of people earning such level of income is lower than those earning the median or modal income level. This is a clear indication that even if the size of a *baked pie has gotten bigger*, the *distribution of that pie* is not a foregone conclusion, using the analogy of income and pie for illustration. When a higher proportion of a pie ends up in the hands of a fewer proportion of the stakeholders, such an outcome can be conveyed figuratively through a frequency distribution—a positively skewed distribution.

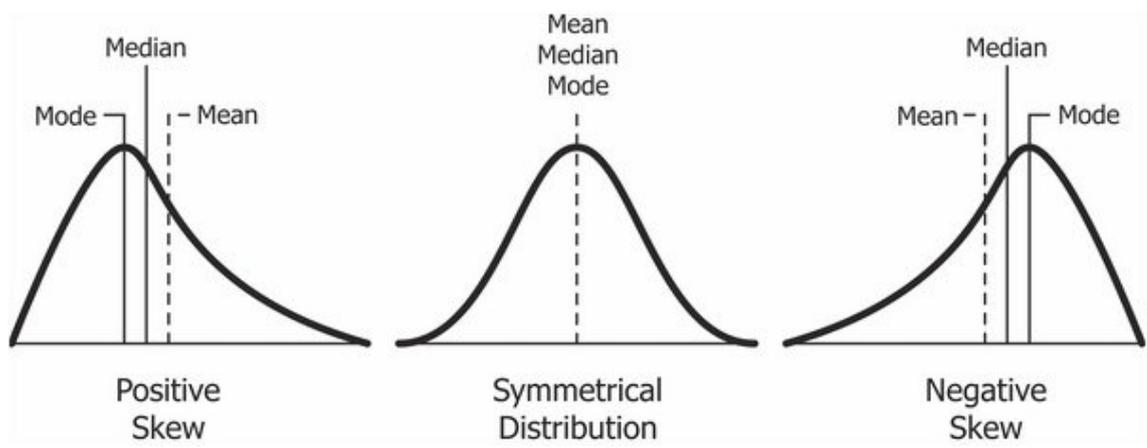


Figure 1: Normal, Positively Skewed and Negatively skewed distributions

Source: Google Images. Notes: The class intervals are measured on the horizontal axis whereas the class frequency is measured on the vertical axis. Moving to the right implies increasing values.

Stated another way, the middle (income) class is experiencing a decline in relative income amidst growing aggregate income. Looking to the positively-skewed distribution in Figure 1 for guidance, we can infer that most of the working population (the modal class) are pushed to the backend of



the income bracket towards zero income, located to the left side of the distribution. The middle-income bracket (the median class) is at a higher income level than the modal class bracket. Obviously, such an income distribution hierarchy remarkably differs from a normal distribution. While a normal distribution can be characterized as a middle-income phenomenon; by contrast, a positively skewed income distribution should be aptly described as a low-income phenomenon.¹²

Why have we belabored the dynamics of inequality? Our intention has been to highlight and presumably for the future, help reduce the common tendency to focus on what is happening to average income in a society while scarcely paying attention to the distribution of that income. Of course, where political accountability obtains, there are feasible redistributive policies can be used to redress the distributional implications of a growing economy and preserve the middleclass. Clearly, an economy that immiserates its middleclass ultimately but sooner than later stops growing, thus courting potential socioeconomic and political catastrophe. It is to this governance question of state immiseration of citizenry that we turn next, in the process taking a rigorous look at aggregate inequality from a comparative perspective.

4. Empirical Analysis of a Dimension of Governance

4.1. Modeling Collective Deprivation

To construct an impoverishment index, we make several simplifying and realistic assumptions. First, the relationship between aggregate inequality and governance is based on the premise that using instruments at its disposal, governments can take active steps to improve the welfare of its citizens by transforming national income into better living standards, thus closing the poverty gap. This implies that income is a means to an end, the end being in this case, improved human welfare. Moreover, there are known and available intervention points or policy instruments and policy target-variables with which the goal of human development can be accomplished. The *degree to which a government has leveraged national income to improve the welfare of citizens* is taken as a measure of its quality of governance. Failure to take advantage of available

¹² The socially dangerous consequences of growing inequality in an apparently growing economy lie precisely in the potentially dangerous social chemistry that is enabled by the resulting abnormal income distribution. To reiterate, the same pot of money can generate vastly different behavioral responses depending on how it is divvied (e.g., see discussions of the Ultimatum Game in the literature on behavioral economics). Potential Chemistry is our euphemism for the proliferation in the number of feasible coalitions the could arise when people perceive a common cause and hold identical views about its implications for their individual welfare. Organizing and igniting such potential flash points are the grit of demagogues and philanthropists alike. Difficulties in a priori distinguishing between the positive forces and the dark side of the force render precarious the task of anticipating the timing and nature of the flash points.



opportunities for welfare improvements indicates poor governance because such failures (whether by commission or omission) are methods of collective deprivation of citizens; equivalently, impoverishment or immiseration.

The quality of governance is measured by calculating an index differential between a country's adjusted per-capita gross national income [GNI] ranking and its adjusted human development index [HDI] ranking; both rankings having been since 1990 consistently measured and published by the United Nations Development Programme (UNDP).¹³ As constructed, the index differential is a utilitarian measure of the quality of governance. Utility is determined by calculating the extent of government's transformation of national wealth into improvements in national welfare. National welfare is presumed to be reflected in improvements in three major outcomes namely, long and healthy life, knowledge, and a decent standard of living, altogether representing the observable implications of human welfare that is often popularly espoused as *life, liberty and the pursuit of happiness*.

The UNDP Human Development Index [HDI] is very convenient for our purposes because it is an outcomes-based indicator that summarily captures the welfare standing of citizens of a state based on factors that can be wrought right using material wealth or resources, clearly within the powers of the state. In constructing its HDI composite index of human welfare, the UNDP uses three sets of intermediate targets or fundamental indices—*life expectancy index, education index and income index*—comprised of the following factors or operating targets: (i) life expectancy at birth (ii) expected years of schooling forecast at year-5 (iii) realized mean years of schooling at year-25 and (iv) per capita gross national income [GNI] expressed in constant dollars of purchasing power. Expressing the average income of each citizen in units of currency which, express incomes according to their command of goods and services rather than according to their nominal or face value, allows for meaningful comparison. Given that the HDI ranks countries, it is crucial that the factors determining the ranking are, as far as possible, comparable.

An important takeaway from our modeling is the implicit assumption that income disparities need not translate into welfare disparities where good governance obtains. That assertion is precisely

¹³ For an elaboration, see Aguna and Kovacevic (2011)



what the leverage ratio determines for each country in our sample. The ratio indicates whether a society has been lifted to a higher level of welfare profile than is implied by its income profile. Positive values of the leverage ratio indicate success stories in the developmental journey (**booster regimes**) whereas negative ratios suggest lousy performances (**oppressor regimes**). We take a 24-year overview of each country's leveraging record. Therefore, our estimator can be viewed as gauging long term pattern of governance robust to the influence of political business cycles.

Political business cycles induce temporal variations in the performance of governments. Such short-term variability can be a source of noise in the estimation. However, many African countries live with entrenched regimes where incumbent despots are less constrained by political pressure and so can implement stable policies if so desired (see Table 1 for examples). To the extent that party ideologies exist and matter, some of the regime changes in continuing to feature the same political party in power may be simply cosmetic. South Africa for instance has had one political party in power since 1994 although with different leaders. As all juntas invariably seek legitimacy and so engage in tactical ploys that seek to legitimize their rules, trends in governance can have temporal variations; i.e. may be noisy. However, the noises are assumed to wash out when governments' record of performances are averaged over a long period as is the case here.

We conclude on a finer point of model evaluation; essentially to interrogate the reasonableness of the performance burden placed on governments by our model. At the conceptual level, the expectation is that there exists a set of feasible policy instruments that can be manipulated to achieve desired policy targets. Furthermore, these policy targets influence intermediate targets in predictable ways. In turn, the intermediate targets have a stable relationship with policy objectives. These premises were first laid out in the opening section of the paper.

In practical terms, we are claiming that with appropriate health and education policies as well as policies on infrastructure, countries can achieve lower morbidity and mortality; accumulate human capital in science, technology, engineering and mathematics to make themselves globally competitive. Demographic profiles affect productivity, savings, capital accumulation and long-term solvency.¹⁴ Clearly, life expectancy, numeracy, literacy, health and human services are within the

¹⁴ See Abreu and Faneli (2015) on the macroeconomic implications of demographic transition; Ayogu and Taiwo (ibidem) for a case study on South Africa.

proper remit of governments. In fact, most governments have line ministries responsible for pursuing these goals. Therefore, we can argue conclusively that modeling aggregate inequality as government failure based on human development indices is rational.

Table 1: Longstanding African Regimes

Country	Leader	Entered Office	Years in Power	Ranking in Quality of Governance
Gabon	Omar Bongo	1967	41	46
	Ali Bongo Ondimba	2009	9	
Equatorial Guinea	Teodoro Obiang	1979	39	45
	Nguema Mbasogo			
Sudan	Omar Hassan Al-Bashir	1989	39	31
Angola	Jose E. Dos Santos	1979	38	42
Zimbabwe	Robert Mugabe	1980	37	12
Burkina Faso	Blaise Compaore	1987	37	24
Cameroon	Paul Biya	1982	36	17
Uganda	Yoweri Museveni	1986	32	5
Swaziland	King Mswati III	1986	32	38
Eritrea	Isaias Afwerki	1993	26	Data unavailable
Gambia	Yahya A.J.J. Jammeh	1994	22	23
Ethiopia	Prime Minister Meles Zenawi	1995	21	10
The Republic of Congo	Denis Sassou-Nguesso	1997	21	32
Djibouti	Ismail Omar Guelleh	1999	19	Data unavailable
Algeria	Abdelaziz Bouteflika	1999	19	41
Democratic Republic of Congo	Joseph Kabila	2001	17	2
Lesotho	Pakalitha Mosisili	1998	14	18

Notes: Quality of governance and ranking are own calculations. Ranking is relative ranking out of 46 countries for which data is available. Source of data on number of years in power: <http://www.ecowas.int/>; <http://www.sadc.int/about-sadc/>; <http://www.eac.int/> and http://about.comesa.int/index.php?option=com_content&view=article&id=36&Itemid=38

4.2. Data and Methodology

4.2.1. Methodology

Definitions: Let the index $i = 1, \dots, K$ represent government i in a sample of K African governments and $t = 1, \dots, T$ represent time, measured in years. Furthermore, define y_{it} as the



per-capita gross national income (GNI) ranking globally by the UNDP for government i among a set of M governments at time t . Similarly, y_{2it} is defined as the human development index (HDI) ranking globally by UNDP for country i among a set of N governments at time t . The number of governments in the per-capita GNI set, M could be more, less or equal to N , the number of governments in the HDI set.

Variables and transformations: $\gamma_{1it} = (y_{1it} / M_t)$ is the normalized per-capita GNI ranking score for government i at time t ; $\gamma_{1it} \in [\frac{1}{M_t}, 1]; M_t \geq 2$. A high score implies a low ranking whereas a low score implies a high ranking. For instance, a ranking score of 1 means the lowest ranking government among the M governments sampled whereas a ranking score of $(\frac{1}{M_t})$ is the most preferred and hence the top (number 1) ranking government. Similarly, $\gamma_{2it} = (y_{2it} / N_t)$ is the normalized HDI score ranking for government i at time t ; $\gamma_{2it} \in [\frac{1}{N_t}, 1]; N_t \geq 2, M_t \begin{matrix} \leq \\ > \end{matrix} N$. A score ranking of 1 is the worst whereas $(\frac{1}{N_t})$ is the best.

The gradient (i.e. leverage ratio) for government i at time t , $\delta_{it} = (\gamma_{1it} - \gamma_{2it}), \delta_{it} \begin{matrix} \geq \\ \leq \end{matrix} 0$ is a measure of the difference between a government's normalized score ranking on per-capita income and its normalized score ranking on human development. A positive gradient means successful leveraging of resources which identifies a government that has succeeded in transforming its national income into appreciable benefits for its citizens. A higher value of the gradient implies superior transformation of resources into social benefits.

Determining the relative quality of governance: Averaging over T years, we have

$$\hat{\theta}_i = \frac{1}{T} \sum_{t=1}^T \delta_{it} \quad \forall i = 1, \dots, K$$

as the estimator of the *quality of governance* for government i over the time span under consideration. Current values of the governance index are indicative of either positive realizations



of past transformative public policies or as negative realizations of past dysfunctional public policies. The *relative quality of governance* is derived as standardized values of the estimator, $\hat{\theta}_i$ ($Z_{\hat{\theta}_i}$ -scores, tabulated in Table 5); that is

$$Z_{\hat{\theta}_i} = \frac{(\hat{\theta}_i - \mu_{\theta})}{\sigma_{\hat{\theta}_i}}$$

where $E(\hat{\theta}_i) = \mu_{\theta}$, the true population mean.

4.2.2. Data and Statistical Analysis

Ideally, the data should cover the 54 independent states in the region. However, data unavailability has constrained the proposed analysis of the population to a sample size of 46 constituting 85 percent of the population. The period of observation is 1990 to 2013 inclusive. Data sources are given in the data appendix below.

To gain a richer perspective on the probable influence of resource base on governance and growth in the region, we group the governments into resource dependency categories namely, non-minerals and minerals. Minerals comprise fuel and non-fuels (solid minerals). The quality of governance across the cohorts are tested to ascertain whether resource base is a differentiator. Mineral versus non-mineral economies are determined by disaggregating the primary commodity composition for each country. A country is assigned a category based on its dominant primary commodity by value, determined by its relative contribution to GDP.

Irrelevance of the resource base would also obliquely challenge the *resource-curse* hypothesis, according to which many African governments deliver either low growth or no growth because of mineral-resource dependency, particularly minerals which are commonly under the control of the state rather than tree crops which are controlled by private citizens. The curse is hypothesized to affect growth negatively. On the resource-curse and growth conjecture, see the critique by Ayogu and Dezhbakhsh (2012) and related literature such as Ross (1999), Sachs and Warner (2001), Sala-i-Martin and Subramanian (2003), Lederman and Maloney (2003), Robinson et al (2006) and Holder (2006).



On **point-source, growth and governance**, see Isham et al. (2005). The following double quotes taken from Isham et al. (2005) capture the essence of the *point-source* argument.

It matters whether a state relies on taxes from extractive industries, agricultural production, foreign aid, remittances, or international borrowing, because these different sources of revenues, whatever their relative economic merits or social import, have powerful (and quite different) impact on the state's institutional development and its abilities to employ personnel, subsidize social and economic programs, create new organizations, and direct the activities of private interests. Simply stated, the revenues a state collects, how it collects them, and the uses to which it puts them define its nature. (Terry Karl, *The Paradox of Plenty*).

It is useful to contrast the conduct of governments in resource-rich nations with that of governments less favorably endowed. In both, governments search for revenues; but they do so in different ways. Those in resource-rich countries tend to secure revenues by extracting them; those in resource-poor nations, by promoting the creation of wealth. *Differences in natural resource endowments thus appear to shape the behavior of governments* [Emphasis added]. (Robert Bates, *Prosperity and Violence*).

Testing the *Resource-Base Irrelevance* hypothesis: Let μ_1 and μ_2 denote the true mean representing the quality of governance for mineral-dependent and non-mineral-dependent economies respectively. The observations from the two samples are identically and independently normally distributed random variables denoting the numerical value of the quality of governance for each government in the two samples, i.e. $\hat{\theta} \sim N(\mu, \frac{\sigma^2}{n})$. The quality of governance is a sampling distribution related to a normally distributed sample of 46 countries. Furthermore, let $\lambda = (\bar{\theta}_1 - \bar{\theta}_2)$ denote the difference between the sample means of the mineral and non-mineral based economies respectively. Then the hypothesis that the means are equal can be stated as $H_0 : (\mu_1 - \mu_2) = 0$ against the alternative $H_a : (\mu_1 - \mu_2) \neq 0$ which is a two-sided alternative to detect either the case $\mu_1 > \mu_2$ or the reverse $\mu_1 < \mu_2$, in case H_0 is false.

The point estimator of $(\mu_1 - \mu_2)$ is $\hat{\lambda}$ and it satisfies the assumption of large sample (if $n > 30$) so that the sample variances provide good estimates of their corresponding population variances. The test statistic z:



$$z_0 = \frac{\hat{\lambda}}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

where σ_1^2 and σ_2^2 are the respective population variances; $E(\bar{\theta}_1) = \mu_1$ and $E(\bar{\theta}_2) = \mu_2$. Under the null hypothesis, $z \sim N(0, \sigma^2)$. Per the hypothesis, we desire a two-tailed test. Thus for $\alpha = 0.05$, the critical value is $P(|z| > z_{.025}) = 1.960$.

Testing sample characteristics (*Identity Probe*): Additionally, we test for difference in the variances of the two samples. The probe is to determine whether there are significant differences in the degree of consistency within the two categories of regimes. Whereas differences in the mean performance may differ across both typologies of resource base, the degree of group cohesion within cohorts may be indicative of how influential the resource-base is as a factor in explaining the conduct of governments. The null hypothesis of equality of variances is $H_0 : \sigma_1^2 = \sigma_2^2$; $H_a : \sigma_1^2 \neq \sigma_2^2$ which is a two-sided alternative. Under the null hypothesis, the appropriate test statistic is

$$F_{(v_1, v_2), \alpha/2} = \frac{S_1^2}{S_2^2}$$

distributed F with v_1 numerator and v_2 denominator degrees of freedom where S_1^2 and S_2^2 are independent sample variances with corresponding degrees of freedom $v_1 = (n_1 - 1)$ and $v_2 = (n_2 - 1)$.

4.3. Results and Inferences

Figure 2 shows the relative frequency distribution of the impoverishment index across the 46 African countries analyzed. The profile indicates a predominantly oppressor regime. Table 2 presents the numerical descriptive statistics showing the mean, variance and extreme values of the data as well as the sample sizes of the two main categories of regimes namely, the mineral (extractive) and non-mineral resource-based economies. Table 3 presents the impoverishment index by countries listed alphabetically.



Table 2: Numerical Descriptive Statistics of the Impoverishment Index ($\hat{\theta}$): 1990 -2013

	All economies. Sample size=46	Mineral-dependent economies. Sample size=28	Non-mineral dependent economies. Sample size=18
Minimum and maximum values	Min (-0.36) Max (0.13)	Min (-0.36) Max (0.10)	Min (-0.16) Max (0.13)
Mean	-0.05	-0.08	0.00
Variance	0.0103	0.0111	0.0048

Figure 2: Relative Frequency Distribution of the Impoverishment Index ($\hat{\theta}$): 1990 -2013

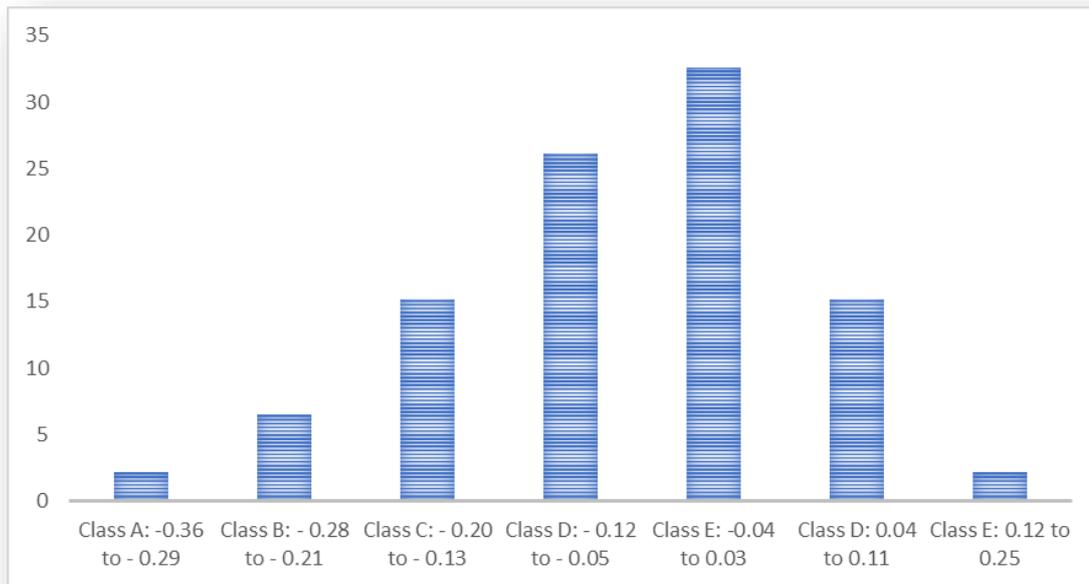


Table 3: Impoverishment Index by alphabetical order of countries

	Ratio of African countries represented by this sample (85%)	Minerals based Regimes – (61%)	Non-mineral based Regimes – (39%)
1	Algeria	-0.17 (0.98;0.34)	
2	Angola	-0.17 (0.96;0.65)	

3	Benin		-0.01 (0.83;0.14)
4	Botswana	-0.25 (0.16;0.17)	
5	Burkina Faso	-0.05 (0.73;0.08)	
6	Burundi		0.01 (0.76;0.04)
7	Cameroon	0.00 (0.91;0.15)	
8	Cape Verde		0.05 (0.41;0.02)
9	Central African Republic	0.04 (0.57;0.06)	
10	Chad	-0.05 (0.95;0.27)	
11	Cote d'Ivoire	-0.14 (0.80;0.31)	
12	Democratic Republic of Congo	0.10 (0.59;0.12)	
13	Egypt	-0.17 (0.58;0.06)	
14	Equatorial Guinea	-0.25 (0.96;0.87)	
15	Ethiopia		0.03 (0.84;0.05)
16	Gabon	-0.36 (0.95;0.50)	
17	Gambia		-0.04 (0.66;0.03)
18	Ghana	0.03 (0.69;0.18)	
19	Guinea		0.01 (0.78;0.16)
20	Guinea-Bissau		-0.06 (0.96;0.14)
21	Kenya		0.02 (0.69;0.10)
22	Lesotho		-0.01 (0.08;0.03)
23	Madagascar		0.13 (0.53;0.09)
24	Malawi		0.07 (0.88;0.17)
25	Mali		-0.06 (0.52;0.10)
26	Mauritania	-0.10 (0.91;0.31)	
27	Mauritius		-0.01 (0.29;0.09)
28	Morocco		-0.08 (0.36;0.07)
29	Mozambique		0.03 (0.88;0.16)
30	Namibia		-0.16 (0.53;0.18)
31	Niger	-0.03 (0.62;0.09)	
32	Nigeria	-0.13 (0.98;0.36)	
33	Rwanda		0.05 (0.86;0.04)
34	Senegal		-0.05 (0.66;0.12)
35	Seychelles		-0.05 (0.88;0.30)
36	Sierra Leone	-0.06 (0.40;0.05)	
37	South Africa	-0.21 (0.45;0.09)	
38	Sudan	-0.07 (0.86;0.11)	
39	Swaziland		-0.16 (0.41;0.23)
40	Tanzania	0.01 (0.60;0.06)	
41	The Republic of Congo	-0.07 (0.92;0.67)	
42	Togo		0.09 (0.63;0.18)
43	Tunisia	-0.01(0.23;0.08)	
44	Uganda		0.07 (0.79;0.07)
45	Zambia	-0.07 (0.85;0.24)	
46	Zimbabwe	0.02 (0.69;0.21)	

Notes: The pair of numbers in parenthesis are respectively the values for primary commodity resource intensity and primary commodity resource dependency measures. Resource intensity is the ratio of primary exports to total exports and indicates the importance of this category of export for trade and growth, including foreign currency revenue. The

Resource dependency ratio is the ratio of primary commodity export-revenue to GDP and indicates the importance of primary commodities for the country's income or life support. In this sense, the primary commodity dependency ratio is a crucial metric that should be closely tracked. Similarly, a high resource-intensity ratio is problematic because it indicates fragility regarding ability to finance development expenditure.

Source: Authors' calculations based on UNDP HDI indices as reported for various years. For UNDP HDI data sources, see references in the Data Appendix. For Tanzania, the period covered for the resource intensity and dependency data is from 1999 to 2013 instead of 1995 to 2013 for the rest of the countries. So, 5 years of data is missing for Tanzania. The classification of the countries into mineral and non-mineral economies is based on data from World Bank country profile. We calculated the ratio of each country's mineral to agricultural products in the GDP (i.e. the primary commodity distribution) and categorized the economies accordingly.

Table 4: Chronology of Political Regimes in Nigeria

Period	Events and notes
Oct 1, 1963 to January 13, 1966	The First Republic led by Sir Tafawa Balewa
Jan 13, 1966	Coup led by Major Chukwuma Kaduna Nzeogwu
Jan 16, 1966	Coup Leaders hand over power to General J.T.U. Aguiyi-Ironsi
Jul 29, 1966	Counter coup with power handed to General Yakubu Gowon
Jul 29, 1974	Coup by General Murtala Mohammed
Feb 13, 1976	General Murtala Mohammed assassinated in an aborted coup and General Olusegun Obasanjo becomes Head of State, subsequently returning Nigeria to civil rule
Oct 1, 1979 – Oct 1, 1983	The Second Republic led by Alhaji Shehu Shagari
Dec 31, 1983	Coup by General Muhammadu Buhari
Aug 27, 1985	Coup by General Ibrahim Babangida
Aug 26, 1993	General Babangida steps down under pressure and Mr. Ernest Shonekon appointed interim President
Nov 17, 1993	Mr. Ernest Shonekon deposed in a bloodless coup led by General Sani Abacha
Jun 8, 1998	General Abacha dies of illness from natural causes and General Abdulsalami Abubakar appointed Head of State by the ruling junta who then superintends return to civil rule in Nigeria's 3 rd Republic
May 29, 1999	General Obasanjo sworn in as elected President
May 29, 2007	Umaru Musa Yar' Adua succeeds Obasanjo as elected President
May 6, 2010	Goodluck Ebele Jonathan sworn in as President upon the passing of President Yar' Adua
May 29, 2015	Muhammadu Buhari elected President

Source: Authors' compilation from publicly available information.

Although Nigeria is two years short of the threshold that was set in this study for entry into the league of long-standing regimes in Africa (Table 4), nonetheless its immiseration record is as competitive as those of the league members (refer to Table 1). According to Table 5, which ranks



countries on the quality of governance based solely on their immiseration record, Nigeria ranks 36 out of 46, clearly in the bottom, at the cusp of the lowest quintile. So much for the largest oil-producing state in Africa having the largest market, the largest GDP, and a generous endowment of natural-resource diversity. You name it, Nigeria has it. Having made notable strides in education immediately post-independence as well as the recognizable quality of tertiary institutions in the 1960s through the early 80s (strong initial conditions), there is no room for excuses or apologies for Nigeria’s long-term record on the status of education, infrastructure and primary health care.

This study welcomes a reasoned apology for Nigeria’s post-independence condition and a cogent justification for its peer ranking, ahead of South Africa, Equatorial Guinea, Gabon, Egypt, Botswana and Cote d’Ivoire but way below Uganda, Togo, Niger, Chad, Rwanda, Burundi, Kenya, Zimbabwe, DRC, Malawi, Benin Republic, and Cameroon, among many. Some of the countries ahead of Nigeria are also mineral resource-based.

Table 5: Governance Ranking of Countries (z-values of $\hat{\theta}_i$)

	Z-score
1* Madagascar	1.74
2 Democratic Republic of Congo	1.47
3* Togo	1.35
4* Malawi	1.22
5* Uganda	1.18
6* Cape Verde	1.06
7* Rwanda	0.94
8 Central African Republic	0.88
9* Mozambique	0.80
10* Ethiopia	0.77
11 Ghana	0.75
12 Zimbabwe	0.66
13* Kenya	0.65
14* Burundi	0.61
15* Guinea	0.54
16 Tanzania	0.54
17 Cameroon	0.49
18* Lesotho	0.43
19 Tunisia	0.40
20* Benin	0.36
21* Mauritius	0.36

22	Niger	0.23
23*	Gambia	0.14
24*	Burkina Faso	0.04
25	Chad	0.03
26*	Senegal	0.02
27*	Seychelles	0.01
28	Sierra Leone	-0.06
29*	Guinea Bissau	-0.09
30*	Mali	-0.13
31	Sudan	-0.20
32	The Republic of Congo	-0.21
33	Zambia	-0.25
34*	Morocco	-0.33
35	Mauritania	-0.52
36	Nigeria	-0.75
37	Cote d'Ivoire	-0.87
38*	Swaziland	-1.05
39*	Namibia	-1.06
40	Egypt	-1.07
41	Algeria	-1.17
42	Angola	-1.20
43	South Africa	-1.62
44	Botswana	-1.98
45	Equatorial Guinea	-1.98
46	Gabon	-3.02

Notes: Asterisk = non-mineral resource-based regimes.

Table 6: Resource-Base Irrelevance Hypothesis Test Results

	Mineral (extractive)	Non-mineral
Sample size	28	18
Mean	-0.08	0.00
Sample variance	0.0111	0.0048
<hr/>		
$z_0 = -0.0312$		
$F_{(27,17),.025} = 23.125$		

Based on the results in Table 6, we are unable to reject the hypothesis of equality of the means across the two categories of commodity-based regimes. With 95 percent confidence, the result suggests that there is no difference in the behavioral tendencies of governments regarding immiseration of citizens (conversely, citizen upliftment) based solely on their primary commodity base. It appears that the aim of most of the countries is to leverage their resources to improve human welfare. The mean value of the leverage ratio (impoverishment index or upliftment index)



is zero. Zero-leverage implies a one-to-one mapping of resources to welfare. Positive deviations from zero is a sign of innovation in resource transformation or efficiency gains. Less than 20% of the sample falls under the innovation umbrella. Nigeria is certainly not one of those. We should note though that there is still a 5 percent chance that we have incorrectly failed to reject the null hypothesis, meaning that resource base may in fact matter for the observed outcomes.

Mindful that two extremely different configuration of income profiles can yield identical means, therefore, we also consider the result of the variance test. The critical value for a 5% significance test at the relevant degrees of freedom is 2.57 (obtained by interpolation). From the value of the *F*-test statistic in Table 6, we strongly reject the null hypothesis of the equality of variances. The result holds even at the 1% significance level (i.e. with 99 percent confidence). According to the result, extractive regimes are a motley crew of oppressors whereas the non-mineral based regimes are more alike in their booster character. It seems that differences in natural resource endowments indeed shape the behavior of governments.

5. Concluding Remarks and Suggestions for Further Research

We know that two important inequality-reducing policy instruments are quality of health care and investment in education. The latter is an index for human capital accumulation whereas the former is an index for life expectancy and quality of life (mortality and morbidity). Education outcomes are a composite index measuring both quality and quantity along several dimensions such as enrolment, retention, throughput, expected years of schooling at age 5, mean years of schooling at age 25, throughput in science, technology, engineering and mathematics. Outcomes from the two intermediate targets—human capital and life expectancy—are non-transferable wealth and therefore do not perpetuate inequality because they are not dependent on initial conditions or inheritance. Legacy is less important here particularly where functional education policies are in place.

Human capital can improve productivity and enhance potential increases in standards of living. Therefore, distributive policies which are skewed towards investment in health and education can change wealth distribution over time through influencing income dynamics. Promoting investment



in health and human capital over time raises the proportion of beneficiaries of intertemporal increase in the standard of living and hence in turn promotes intergenerational mobility.

Inequality in income that do not translate into welfare inequalities is the lesser evil (of the two kinds of inequalities). When the prospects of intergenerational mobility are encouraging, they act as transducers, converting the potential flash points from growing inequality to a changing landscape of opportunities for all. So, in few words, education and health are key.

Recognizing this need, how does the consensus over education and health translate into a political demand for them? Just because something is of significance to the electorate does not automatically imply that the government will respond. Often the goals and preferences of governments are not congruent with those of the electorate. How to align incentives is key, as are studies to flesh out details of the health and education policy alternatives. These tasks comprise potentially useful research agenda.

Provision of a public good such as the policies flagged above generates conflicts over the distribution of the costs of supplying the public good. When a policy has distributional consequences, self-interested groups will be in conflict. This conflict represents a form of political constraint that can lead to either delays in the adoption of seemingly beneficial policies. Then the challenge is to understand how those political constraints can be overcome within the existing institutional frameworks (i.e. prevailing choice mechanisms). This too, is another important research agenda aimed at understanding better how to translate policy needs into political demands for action.

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Data Appendix:

HDI data and GNI data are provided by the UNDP and the World Bank respectively. According to the UNDP description of its source, data on life expectancy at birth is provided by the UN Population Division in the UN Department of Economic and Social Affairs (UNDESA); mean years of schooling are based on UNESCO Institute for Statistics (UIS) educational attainment data; expected years of schooling is provided by UIS; and GNI per capita (in 2011 \$PPP) by the World Bank and the International Monetary Fund. For several countries, mean years of schooling is estimated from nationally representative household surveys and for some countries GNI was obtained from the UN Statistical Division's database – National Accounts Main Aggregates Database.

(source:<http://hdr.undp.org/en/faq-page/human-development-index-hdi#t292n42>)

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