

**CORRUPTION AND HUMAN DEVELOPMENT IN SUB SAHARAN AFRICA:
EMPIRICAL EVIDENCE FROM NIGERIA**

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ABSTRACT

Since 1998, Sub Saharan Africa has been in the news concerning corruption and in particular, Nigeria, one of the Sub Saharan African Countries. The President of the World Bank Group has disclosed that developing countries in the world lose about \$40 billion annually to the scourge of corruption (Jim Yong Kim, 2012). A closer look at annual corruption indices developed by civil society organizations show that developing countries mostly from Sub Saharan Africa, South America and Asia are always in the top ten of the most corrupt countries. From the list, the most corrupt countries are those afflicted with diseases, low life expectancy rate, high poverty index, and low gross domestic product per capita and above all continued internal conflicts. This research tries to find out if there is any relationship between corruption and these human development factors, affecting Sub Saharan Africa with particular attention on Nigeria. The research uses censored Tobit regression as a method of analysis, making use of secondary cross-country panel data from transparency International and Human Development report of the United Nations Development Programme. The research finds that there is more corruption in Central African Countries, followed by East African Countries, then West African countries and less on Southern African Countries. In Nigeria there is a significant positive impact of gross national product per capita on corruption with a positive coefficient, while decrease in poverty gap is accompanied with increase corruption perception index. The research concludes that low per capita gross national product and poverty in Nigeria has great impact on the country's corruption perception index. The research recommends that efforts at tackling corruption in Nigeria should target per capita gross national product and poverty.

Keywords: *Corruption, Corruption Perception Index, Human development, Human development indicators, Sub Saharan Africa, Nigeria.*

1.0 INTRODUCTION.

Corruption, is the misuse of public power for private benefit, and is most likely to occur where public and private sectors meet (Akçay, 2006). According to Hope (2000), corruption is the utilization of official position or titles for personal or private gains, either on individual or collective bases, at the expense of the public good, in violation of established rules and ethical considerations, and through the direct or indirect participation of one or more public officials, whether they are politicians or bureaucrats. Corruption occurs where public officials have a direct responsibility for the provision of a public service or regulation to individuals or employees of private sector companies (Rose and Ackerman, 1997). Pavarala (1996) defines corruption as behavior which deviates from the normal duties of a public role because of private pecuniary gains; or violates rules against the exercise of certain types of private influence. This includes such behavior as bribery (use of reward to pervert the judgment of a person in a position of trust); nepotism (bestowal of patronage by reason of inscriptive relationship rather than merit); and misappropriation (illegal appropriation of public resources for private use). The United Nations Convention Against corruption (UNCAC) could not define corruption *per se*, but decided to identify and describe the specific conducts that are generally classified as corrupt and criminal misconduct. Such misconduct include bribery, embezzlement, theft and fraud, extortion, abuse of discretion, favoritism and nepotism, creating or exploiting conflicting interests, and improper political donations. Transparency International (TI) describes corruption as the abuse of entrusted power for private gain which eventually hurts everyone who depends on the integrity of people in a position of authority.

In recent years some civil society organizations have identified with the fight against corruption and some have published indices of corruption against some countries while commending others. Such organizations include Transparency International (TI) which is responsible for the publication of corruption perception index (CPI) and Bribe Payers Index (BPI). Others include the World Bank, which is responsible for the publication of Control of Corruption Index (CCI) and International Country Risk Guide (ICRG), which publishes corruption index (CI). All these country-level corruption indices are based on firm and household surveys and expert assessments of corruption experience. These indices are briefly defined below.

Corruption Perception Index (CPI):

CPI was first published in 1995 by Transparency International (TI). CPI is a comparative listing of corruption worldwide developed by TI, with headquarters in Berlin, Germany, but operates through more than 70 national chapters worldwide. The CPI ranked nations on the prevalence of corruption within each country, based upon surveys of business people. Transparency International compiles surveys that ask businessmen and analysts, both in and outside the countries they are analyzing, their perceptions of how corrupt a country is. The Corruption Perceptions Index ranks countries and

territories based on how corrupt their public sector is perceived to be. A country or territory's score indicates the perceived level of public sector corruption on a scale of 0 - 100, where 0 means that a country is perceived as highly corrupt and 100 means it is perceived as very clean. A country's rank indicates its position relative to the other countries and territories included in the index.

According to Chaikin (2009), Transparency International was criticized for poor methodology and unfair treatment of developing nations, while also being praised for highlighting corruption and embarrassing governments. Also data in the survey can vary widely depending on the public perception of a country, the completeness of the surveys and the methodology used.

Bribe Payers Index (BPI):

The Bribe Payers Index was first published in 1999 by Transparency International and ranked nations according to the prevalence that a country's multinational corporations would offer bribes. The BPI 2011 ranked 22 of the leading exporting countries on the likelihood that their multinational businesses will use bribes when operating abroad. The ranking is calculated from responses by businessmen to two questions on the World Economic Forum's Executive Opinion Survey.

Control of Corruption Index (CCI): The Control of Corruption index is an aggregation of various indicators that measure the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. The Index ranges from -2.5 (for very poor performance) to +2.5 (for excellent performance).

International Country Risk Guide (ICVG):

ICVG is one of the world's commercial sources of country risk analysis and ratings. Updated monthly, ICRG monitors 140 countries. They provide financial, political, and economic risk information and forecasts. ICRG's statistical tables assign values to the 22 indicators underlying ICRG's business-oriented model for quantifying risk, examining such country-specific elements as currency risk, political leadership, the military and religion in politics, and corruption.

Overall, as indicated earlier, since 1998, the Sub Saharan Africa has been in the news concerning corruption and in particular, Nigeria which is a prominent Sub Saharan Country. The World Bank estimated that over \$1 trillion in bribes are paid annually within the global economy (Gonzalez and Velazquez, 2004). For example, survey results from Transparency International have shown that between the periods 2006 to 2012, Somalia struggled and came first for five consecutive times as the most corrupt country in the world, just as it was able to top Sub Saharan African chart for six times. Other top contenders in the race included Haiti, 2005, Chad, 2006, Haiti, 2004, Bangladesh, 2001 to 2003, Nigeria, 2000 and Cameroon, 1999. In sub Saharan Africa, the race is between Somalia and Nigeria. In all these years of rating, the cleanest countries are the developed countries of the

world while the most corrupt are always among the developing countries (see Tables 1 and 2). From the list, all the most corrupt countries are those afflicted with diseases, low life expectancy rate, high poverty index, and low gross domestic product per capita and above all continued internal conflicts, while their developed counterparts are less affected by these factors. For fourteen years, such a relationship cannot be a coincidence.

Thus as indicated earlier, the main aim of this work is to find out if there is any relationship between corruption and these human development factors, affecting Sub Saharan Africa with particular attention on Nigeria.

The remaining part of this study covers a conceptual review of corruption in Sub Saharan Africa and Nigeria in section two; research methodology adopted in section three; data presentation in section four and section five gives the summary and conclusions.

2.0 BACKGROUND REVIEW OF CORRUPTION

2.1 Sub Saharan Africa

Sub-Saharan Africa is, geographically, the area of the continent of Africa that lies south of the Sahara. Politically, it consists of all African countries that are fully or partially located south of the Sahara. The enclave called Sub Saharan Africa is made up of forty five (now forty six with South Sudan membership of East African Community) independent countries and four regions of West Africa, Central Africa, East Africa and Southern Africa (see tables III – VI). The North African countries consists of Mauritania, Sudan, Morocco (and Western Sahara), Libya, Algeria, Tunisia and Egypt. Mauritania is classified to the North Africa having withdrawn from West Africa Sub region since 2000.

On the whole, as indicated above, it is crucial to reiterate that since 1998, the Sub Saharan Africa has been in the news concerning corruption. Annual corruption indices developed by civil society organizations show that developing countries mostly from Sub Saharan Africa (SSA) are always among the top ten of the most corrupt countries (CPI,1998-2012).

2.2 Nigeria

Nigeria has a population of about 160 million as at 2006, and a landmass of 923,768 square meters, with over 252 ethnic groups and tribes, 36 states and a federal capital territory, and about 774 local government areas (2006 Census). It secured full independence from Britain in 1960. Initially it emerged as a country in 1900 following the amalgamation of British Colonial Southern and Northern protectorates. According to the World Bank (2004), Nigeria is the most populous country in Africa and the ninth most populous in the world. The country pride itself as having one in every five black men in the world as a Nigerian (Nairaland, 2012).

Unfortunately, despite its vast human and natural resources, its economic progress has been stunted largely as a result of corruption. Although corruption in the modern day Nigeria has a long history predating the period of independence, the phenomenon became more noticeable after the country's (1966-1970) civil war. The following examples that captured the local and world attention can be cited:

2.2.1 General Yakubu Gowon's Military Regime (1966-1975)

During the Gowon's regime, Omoigui (2004) has cited the legal case of one Iyabo Olorunkoya in the UK where she implicated two famous military officers, Brigadiers Sotomi and Benjamin Adekunle for international money laundering. As a result of the mounting local and international attention given to the allegations, Gen Gowon decided to retire them from the army even though it was only Olorunkoya who was eventually convicted. Another high profile example is the allegation by Dr Gowin Daboh against Mr J.S. Tarka, for corruption (Omoigui, 2004). J.S. Tarka was a Federal Minister for communication in the Gowon Military regime. There is also the allegation of corruption by Mr. Aper Aku against the then Military Governor of Benue-Plateau State, Mr. J.D. Gomwalk. Both Dr Daboh and Mr Aku wrote open letters of their allegations in the Media followed by affidavits in the Law Courts.

Unfortunately, while Gen Gowon promptly took disciplinary action against Brigadiers Sotomi and Adekunle, even though they were not convicted, he decided to clear Tarka and Gomwork, which had led to wide scale criticisms and allegation of nepotism against him. Thus in spite of his explanations, his government was over thrown in 1975 largely on perception of his inability to apprehend and punish corrupt officials.

2.2.2 Mohammed-Obasanjo Military Regime (1975-1979)

Murtala Mohammed-Olusegun Obasanjo Military regime 1975 - 1979 took over from Gowon in a Military coup accusing the regime of corruption and nepotism and made efforts aimed at fighting corruption. In the political sphere, government was re-structured to induce greater efficiency and central control by enhancing the roles of the Chief of Staff, Supreme Headquarters, and the Cabinet Office, and limiting the influence of the State Governors. The regime set up an Assets Investigation Panel to examine the assets of state governors, federal commissioners, and high-ranking officials. Those who were found guilty of corruption were dismissed and their assets confiscated by the government. The regime also enacted the Corrupt Practices Decree of 1975, which extended the scope of the regime's anti-corruption measures to officers of public bodies as well as government employees. The regime also established a bureau to try offences under the decree.

According to online Nigeria, massive purges were effected in the Civil Service, the Judiciary and the Universities, purportedly to remove corrupt, unproductive and/or ageing officials. Unfortunately, Mohammed was assassinated in a Military coup on 13th February, 1976.

Mohammed's successor, Lt. General Olusegun Obasanjo, more or less continued with his programmes. These included the war against corruption which Obasanjo strongly denounced in his famous "Jaji Address" of September 1977. For fighting this war, a Corrupt Practices Bureau, an Assets Panel, and a Public Complaints Commission were established. Gambling by casino and pools-betting were banned. The difference between public servants and public officers was entrenched in the constitution of 1979. As it transpired, however, these laudable measures could not uproot the cancer of corruption in Nigeria. General Obasanjo handed over to a civilian government of Shehu Shagari on 1st October, 1979.

2.2.3 General Buhari/Babangida/Abacha/Abdussalami Regimes (1983-1999):

General Buhari overthrew the civilian government of Shehu Shagari in 1983 and had warned that his regime would ensure that "Corrupt officials and their agents would be brought to book". To prove his resolve, Dr. Umaru Dikko, the then Minister of transport and Chairman Presidential Task Force on Importation of Essential Commodities during the Shagari Regime (1979-1983) became a target of the new regime. The task Force was responsible for importation of essential commodities including rice to caution the effect of draught in the Northern part of the country. It was accused of wide-scale corruption by the Buhari regime. The government therefore wasted no time to declare Umaru Dikko, wanted. Eventually he fled the country to the UK. Even then the Buhari regime unsuccessfully tried to illegally ambush him to Nigeria from the UK in 1983. In spite of the clear determination of the Buhari regime to frontally tackle the menace of corrupt practices in the country, through detentions, punitive Decrees, and dismissals of many public officers, their efforts were condemned both at home and abroad as being arbitrary, draconian, and outside the framework of rule of law. Eventually, large scale disillusionment provided the platform for Gen Babangida to overthrow the regime in 1985.

The General Ibrahim Babangida Regime (1985-1992) was evaluated by the then Chairman of the Economic and Financial Crime Commission Mallam Ribado as the regime that has systematically institutionalized corruption in Nigeria (Ribado, 2006).

The General Abacha Regime (1993-1998) was accused by the Basel Institute on Governance, (2007), as supporting the embezzlement of public funds to the tune of USD 4 billion. They indicated that about USD 3 billion in foreign assets have been traced to Abacha and his close associates many of whom were reported to have voluntarily returned approximately USD 1 billion to the Federal Government of Nigeria during the tenure of General Abdulsalami Abubakar (1998-1999). It was also reported that from September 1999 to 2007, approximately USD 1.23 billion had been repatriated to

the Federal Republic of Nigeria from Switzerland, Luxembourg, Jersey, Liechtenstein, Belgium and the UK from the Abacha associates (Mustapha and Whitfield, 2007).

On the whole, it should be pointed out that the menace of corrupt practices in Nigeria is traceable to all facets of national life and engagements including the Civil Service, Traditional institutions, Private sector, Police, Army, and Political office holders. As an example, the case of Mr Tafa Balaogun, a former Inspector General of Police can be cited. According to the International Centre for Assets Recovery (2007), Mr. Tafa Balogun was tried and convicted in 2005 and was sentenced for corruption and money laundering. Assets worth over N17 billion (about USD 110 Million) were reported to have been confiscated from him and returned to the Federal Government of Nigeria. The assets were misappropriated monies meant for the welfare of the Police. Numerous such examples of misappropriation of public funds are daily being reported in the Media.

2.3 Hypothesis Development

The hypotheses concern difference between corruption perception index among the regions of Sub Saharan Africa, the relationship between corruption Perception Index and human development indices proxies by Gross National Product per capita (GNPPC), life expectancy at birth (LEAB), Poverty gap (PG) at \$1.25 per day (ppp%) and lastly human development index (HDI).

2.3.1 Corruption Perception Indices for the Sub Saharan Africa Zone

The first hypothesis is to find out if there is any significant difference between corruption perception indices among the regions of Sub Saharan Africa.

H_{1,1} There is significant difference in corruption perception index of Sub Saharan African Regions.

2.3.2 Gross National Product Per Capita¹:

This research hypothesizes that there is a causal relationship between corruption perception index and Gross National Product per capita in Nigeria. The relationship is positive and flows from Gross Domestic Product per capita to corruption perception index and vice versa. This research hinges its argument on the fact that in all the rankings the countries with low gross domestic product per capital always have low ranks while the developed economies that have high gross domestic products always have higher ranks. It means that in some of the countries, it is the resource scarcity and not resource mismanagement as being portrayed that affects the behavior of the people which also lead them to engage in corrupt practices and hence high corruption perception by the people. There is a

¹ In October 2010, the Human Development Report (UNDP 2010) introduced major changes in the indicators used to capture human development dimensions. In the case of income, purchasing power parity (PPP) adjusted per capita Gross National Income (GNI) –that is, GDP plus net receipts of primary income from abroad- replaced purchasing-power-adjusted GDP per head. The inclusion of GNI per capita represents an improvement as it captures the income accrued to residents of a country, not just the income produced in the country regardless the share retained at home.

saying that "an angry man is a hungry man" and we say, 'a hungry man is a corrupt man". Mo, P. H. (2001) found relationship between corruption and economic growth. Abed, G., and Davoodi, H. (2000) found relationship between Corruption, Structural Reforms and Economic Performance in the Transition Economies. Prior researches in this area have been inconclusive.

H_{1,2}: There is a causal relationship between Corruption Perception Index and Gross Domestic Product per capita in Nigeria.

2.3.3 *Life Expectancy at Birth*

H_{1,3}: There is a causal relationship between Corruption Perception Index and life expectancy rate in Nigeria.

2.3.4 *Poverty Gap at \$1.25 per day (PPP%)*

H_{1,4}: There is a causal relationship between Corruption Perception Index and Poverty gap in Nigeria.

2.3.5 *Human Development Indices*

UNDP Human Development Report has published the Human Development Index (HDI) which was introduced since 1990 as an alternative to conventional measures of national development, such as level of income and the rate of economic growth. According to UNDP (1990), the HDI represents a push for a broader definition of well-being and provides a composite measure of three basic dimensions of human development: health, education and income.

H_{1,5}: There is a causal relationship between Corruption Perception Index and Human development indices in Nigeria

2.3.6 *Corruption Perception Index of Sub Saharan Africa and Nigeria*

H_{1,6}: There is a significant difference in corruption perception index of Sub Saharan African Regions and that of Nigeria

3.0 RESEARCH METHODOLOGY

The research uses cross country panel data of World Corruption Perception Index (CPI), generated by Transparency International (TI), Global Human Development Indices (HDI) from Human Development Report of United Nations Development Programme (HDR/UNDP) along with country time series data on corruption and Human Development Indices from the same organizations. The population of interest is Sub Saharan Africa with special emphasis on Nigeria. The research uses documentary method of data collection to collect secondary data from the report of the above mentioned organizations on Corruption Perception Index (CPI), Human Development Index (HDI),

Gross National Product Per Capita (GNPPC), Life Expectancy At Birth (LEAB) and Poverty Gap (PG) at \$1.25 per day (PPP%).

The method of analysis is by use of descriptive statistics and non-parametric tests of Kruskal Wallis, Mann Whitney test from IBM SPSS 20, Granger causality and censored Tobit regression from Eviews 6. This is because some of the data are generated from scales of low precision such as ranking (ordinal) and frequency counts (nominal or categorical).

Kruskal Wallis tests whether there is significant difference between Corruption Perception index among Sub Saharan African Regions of West Africa, Central Africa, East Africa, Southern Africa and Southern Sahara Countries while the Mann Whitney tests the hypothesis of whether there is any significant difference in annual Human development indices of Nigeria with Sub Saharan African Average.

Mann Whitney test is employed to test whether there is any significant difference between Sub Saharan Africa Human Development Indices average compared with that of Nigeria.

Granger causality test: The research employs Granger causality test to find out whether there is dual causality between the dependent and independent variables.

The censored Tobit regression tests for the hypotheses concerning individual impact of predictor variables of Human Development Index (HDI), Gross National Product Per Capita (GNPPC), Life Expectancy At Birth (LEAB) and Poverty Gap (PG) at \$1.25 per day (PPP%) on Nigerian Corruption Perception Index as a dependent variable. The dependent variable of Corruption Perception Index is left-censored by specifying the limit point using Nigeria's mean Corruption Perception Index. The Nigeria's mean Corruption Perception Index is 1.95 for fifteen years and with a limit point of ($cpi \leq 2$). Observations of Corruption Perception Index below average mark are left censored (data for which we know only its maximum value) and classified as (0), and others uncensored. The censored CPI is regressed against the predictor variables enumerated above. This is in line with Transparency international ranking methodology where very corrupt countries are given low marks while corruption clean countries are given high marks.

The Tobit model is a statistical model proposed by James Tobin (1958) to describe the relationship between a non-negative dependent variable Y_i and an independent variable (or vector) X_i . The model is normally employed where there is an unobservable variable (latent variable) Y_i^* that linearly depends on another variable X_i through a parameter β . The observable variable Y_i is defined to be equal to the latent variable whenever the latent variable is above zero and zero otherwise. The model has a normally distributed error term μ_i to capture random influences on this relationship just as in normal linear regression.

$$Y_i^* = \beta X_i + \mu_i.$$

$$Y_i = Y_i^* \text{ if } Y_i^* > 0 \text{ or } Y_i = 0 \text{ if } Y_i^* < 0$$

$$\mu_i \sim N(0, \sigma^2)$$

Limitation of the methodology: The major limitation of this research is the limited sample size, considering the fact that transparency international started its corruption reporting only in 1995.

4.0 DATA PRESENTATION AND ANALYSIS

Table I: World Corruption Perception Index 1998-2012

Year	Most Corrupt Country in the World	2nd Most Corrupt Country in the World	Most Clean Country in the World
1998	Cameroon	Paraguay	Denmark
1999	Cameroon	Nigeria	Denmark
2000	Nigeria	Yugoslavia	Finland
2001	Bangladesh	Nigeria	Finland
2002	Bangladesh	Nigeria	Finland
2003	Bangladesh	Nigeria	Finland
2004	Haiti	Bangladesh	Finland
2005	Chad	Bangladesh	Iceland
2006	Haiti	Myanmar	Finland
2007	Somalia	Myanmar	Denmark
2008	Somalia	Myanmar	Denmark
2009	Somalia	Afghanistan	New Zealand
2010	Somalia	Myanmar	Denmark
2011	Somalia	North Korea	New Zealand
2012	Somalia	Sudan	Denmark

Source: Transparency International

From the table above, it is clear and worrisome that since 1998, corruption seems to be the developing countries' affairs especially Sub Saharan Africa. Sub Saharan African has always been ahead of others in ten out of fifteen years of the above data. It all started with Cameroon in 1998/1999 as most corrupt country in the world, followed by Nigeria 2000, Chad 2005 and Somalia 2007 to 2012 consecutively. The only break came from another third world country of Bangladesh 2001 to 2003 consecutively and Haiti 2004. In all these years the second most corrupt country is always a third world country of Sub Saharan Africa or Latin America or Asia and most clean country, a developed European country with exception in 2009 and 2011 with the coming of New Zealand from Australian continent.

Table II: Sub-Sahara Africa Corruption Perception Index 1998-2012

Year	Most Corrupt Country in SSA	2nd Most Corrupt Country in SSA	Most Clean Country in SAA
1998	Cameroon	Tanzania	Botswana
1999	Cameroon	Nigeria	Botswana
2000	Nigeria	Cameroon	Namibia
2001	Nigeria	Cameroon	Botswana
2002	Nigeria	Madagascar	Botswana
2003	Nigeria	Cameroon	Botswana

2004	Nigeria	Chad	Botswana
2005	Chad	Ivory Coast	Botswana
2006	Somalia	E/Guinea	Botswana
2007	Somalia	chad	Botswana
2008	Somalia	chad	Botswana
2009	Somalia	chad	Botswana
2010	Somalia	chad	Botswana
2011	Somalia	E/Guinea	Botswana
2012	Somalia	Burundi	Botswana

Source: Transparency International

Table II shows that West African region, East Africa and Central African regions are more affected by corruption than southern Africa region. Nigeria one of the West African country and a prominent and giant country in land mass, population and resource endowment dominate the corruption chart as the most corrupt country in Sub Saharan Africa for five consecutive years, 2000 to 2004, followed by their neighbor, Chad 2005. Cameroon, a Central African Country and a neighbor of Nigeria and Chad, had her share of most corrupt country for two consecutive times from 1998 to 1999. Somalia, an East African Country has taken over from Nigeria since 2006 to date. In all these years Botswana came top on the chart of corruption clean countries in Sub Saharan Africa for fourteen years with exception of 2000 where Namibia was on top.

Table III: Descriptive statistics of Corruption perception index of West Africa

Country	Minimum		Maximum	Mean	Std. Deviation
Nigeria	14	1.00	2.70	1.9571	.56120
Ivory coast	14	1.90	2.90	2.2857	.31588
Ghana	14	3.30	4.50	3.7000	.35301
Senegal	14	2.90	3.60	3.2143	.25678
B/Faso	10	2.90	3.80	3.2400	.31340
S/Leonan	10	1.90	3.10	2.3300	.31990
Gambia	10	1.90	3.40	2.7300	.45717
Mali	10	2.70	3.40	2.9400	.23190
Chad	9	1.60	2.00	1.7778	.15635
Niger	9	2.20	3.30	2.6111	.32956
Benin	9	2.50	3.60	2.9667	.31623
Guinea	6	1.60	2.40	1.9667	.27325
Togo	7	2.30	3.00	2.5714	.26277
Liberia	6	2.10	4.10	3.0333	.70899
G/Bissau	6	1.90	2.50	2.1333	.22509
S/Tome	5	2.70	4.20	3.1400	.60663
Cape Verde	6	4.90	6.00	5.2833	.40208
Valid N (Listwise)	17				

Source: Research results

Based on the mean score of descriptive statistics for corruption in table III above, Chad is the most corrupt country in fifteen years in West Africa, followed by Nigeria and then Guinea. The most corruption clean in West Africa is Cape Verde, followed by Ghana and then Soa Tome. From the scores, the gap between Cape Verde and Ghana is so wide.

Table IV: Descriptive Statistics of Corruption perception index for central African Countries.

Country	N	Minimum	Maximum	Mean	Std. Deviation
Cameroon	14	1.00	2.70	1.9571	.56120
CongoDR	14	1.90	2.90	2.2857	.31588
Congob	14	3.30	4.50	3.7000	.35301
Gabon	14	2.90	3.60	3.2143	.25678
Seychelle	14	1.50	2.60	2.1643	.28177
Eguinea	14	1.70	2.20	2.0500	.15064
Central Africa/R	14	1.90	2.60	2.2286	.17728
Valid N (Listwise)	7				

Similarly, based on the mean score of descriptive statistics in table three for corruption in Central Africa above, Cameroon is the most corrupt country in fifteen years, followed by their neighbour Equatorial Guinea, then Seychelle. The most corruption clean in Central Africa is Congo Brazzaville, followed by Gabon and then Congo Democratic Republic.

Table V: Descriptive Statistics of Corruption perception index for East African Countries.

Country	N	Minimum	Maximum	Mean	Std. Deviation
Tanzania	14	1.90	3.20	2.7143	.34609
Kenya	14	1.90	2.70	2.1214	.19287
Uganda	14	1.90	2.90	2.4357	.27903
Zambia	14	2.50	3.70	2.9071	.39897
Ethiopia	11	2.30	3.30	2.6545	.32669
Eritrea	7	2.50	2.90	2.6429	.15119
Djibouti	6	2.90	3.60	3.0833	.27869
Somalia	8	.80	2.10	1.2375	.40333
Rwanda	8	2.50	5.50	3.6500	1.08628
Burundi	7	1.80	2.50	2.0286	.29277
Comoros	6	2.10	2.80	2.4500	.24290
Seychelle	9	3.60	5.20	4.5444	.48762
Valid N (Listwise)	12				

From the descriptive statistics mean values of corruption perception for East African Countries, Somalia is the most corrupt country in fifteen years, followed by Burundi, then Kenya. The most corruption clean country in the region is Rwanda, followed by Djibouti and then Zambia.

Table VI: Descriptive Statistics of Corruption perception index for Southern African Countries.

Country	N	Minimum	Maximum	Mean	Std. Deviation
Zimbabwe	14	1.80	4.10	2.5000	.56840
S/Africa	14	4.10	5.10	4.6786	.29136
Namibia	14	4.10	5.70	4.7214	.52062
Botswana	14	5.40	6.50	5.9214	.30427
Mozambique	14	2.20	3.10	2.5929	.28947
Malawi	14	2.70	4.10	3.1643	.49397
Madagascar	14	1.70	3.40	2.6214	.64233
Angola	14	1.70	2.20	1.9214	.18884
Swaziland	14	2.50	3.70	2.9929	.41411
Lesoto	14	3.20	3.50	3.2571	.10894
Mauritius	14	4.10	5.70	4.6857	.64790
Valid N (Listwise)	11				

From Southern Africa, Angola is the most corrupt country, followed by Zimbabwe, then Mozambique. The most corruption clean country is Botswana, followed by Namibia, then Mauritius.

Table VII: Descriptive Statistics of Corruption perception index for Sub Saharan African Regions

Country		Minimum	Maximum	Mean	Std. Deviation
C/AFRICA	8	1.96	3.70	2.5946	.65899
E/AFRICA	12	1.24	4.54	2.7058	.82880
S/AFRICA	11	1.92	5.92	3.5506	1.25049
W/AFRICA	17	1.78	5.28	2.8165	.83018
Valid N (Listwise)	4				

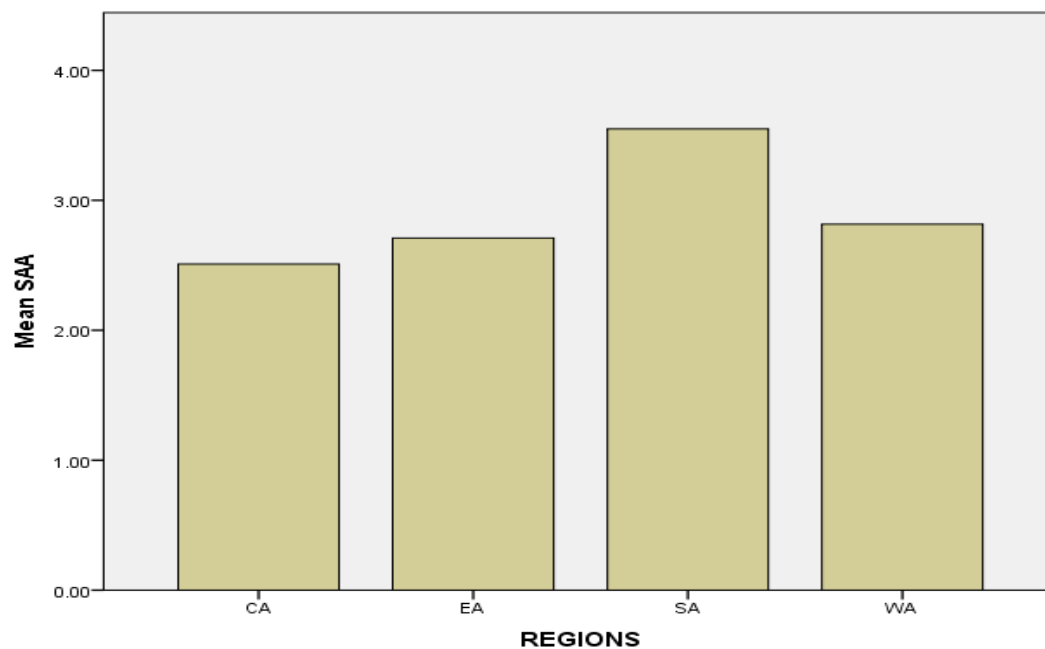


Figure I: Mean Corruption clean rating of the five regions

From the mean values in table VII and bar chart of figure I of corruption clean rating above, southern Africa, has the best rating followed by West Africa, Eastern Africa and worst rating from Central Africa.

Table VIII: Kruskal Walis Test Results of difference in corruption perception index of Sub Saharan African Regions.

	regions	N	Mean Rank
Subsaharanafrica	1.00	159	220.07
	2.00	56	126.95
	3.00	117	203.42
	4.00	126	311.20
	Total	458	
Chi square			87.132
Df			3
Asymp. Sig			.000

Regions (West Africa (1), Central Africa(2), Eastern Africa(3), Southern Africa(4))

From the results of Kruskal Wallis test in table VIII, there is a significant difference in corruption perception index between Sub Saharan African regions. From the mean ranks, the effect of corruption is more on Central African Countries, followed by East African Countries, then West African countries and less on Southern African Countries. This means that efforts at tackling corruption in Sub Saharan Africa should target Central African more than other regions in that order.

Table IX: Sub Saharan Africa Human Development Indices average compared with that of Nigeria

YEAR	SAA HDI	NIGERIA HDI
2012	.475	.471
2011	.472	.467
2010	.468	.462
2009	.463	.457
2008	.456	.453
2007	.449	.448
2006	.440	.444
2005	.432	.434
2000	.405	..462

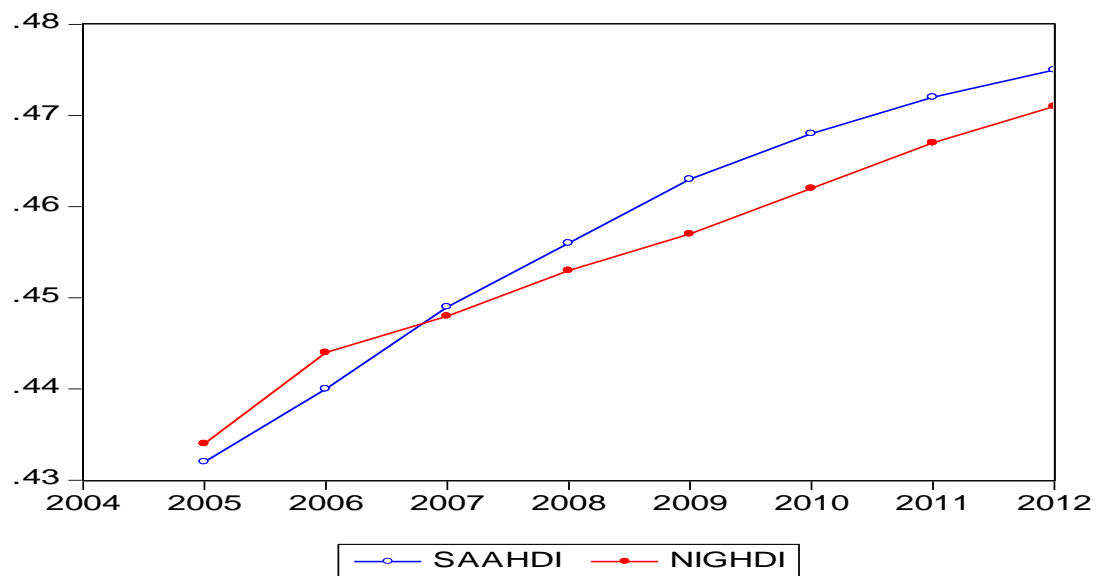


Figure II: Graph comparing Sub Saharan Africa Human Development Indices compared with that of Nigeria

From table IX and Figure II, it shows that Nigeria was ahead of Sub Saharan average on human development indices up to 2006. From 2007, the nation lost its efforts at improving the welfare of its citizens and is now operating below Sub Saharan average.

Table IX: Mann-Whitney Test Results of difference in Human development indices of Sub Saharan African Regions with that of Nigeria.

Ranks				
	NIG/HDI	N	Mean Rank	Sum of Ranks
	1.00	9	9.56	86.00
SAA/HDI	2.00	9	9.44	85.00
	Total	18		
Mann-Whitney U				40.000
Wilcoxon W				85.000
Asym. Sig (2tail)				.965
Exact sig (2tail)				.982

The result of the Mann-Whitney U comparison of human development indices of Sub Saharan Africa with that of Nigeria shows that the difference is not significant at 0.01, 0.05 and 0.1, even though they are operating at below Sub African average.

Table X: Descriptive Statistics Results of Uncensored CPI with untransformed Human development indices of Nigeria.

	UCPI	GNPPC	HDI	LEAB	PG
Mean	0.195333	1377.200	0.454667	48.35000	22.95333
Median	0.190000	1285.000	0.460000	48.35000	22.95000
Maximum	0.270000	2102.000	0.470000	51.90000	25.91000
Minimum	0.100000	795.0000	0.430000	45.50000	20.62000
Std. Dev.	0.054099	485.7025	0.011872	2.112040	1.862190
Skewness	-0.182984	0.145659	-0.448496	0.216199	0.166750
Kurtosis	1.864303	1.408035	2.444211	1.853779	1.879711
Jarque-Bera	0.889838	1.637011	0.695935	0.937993	0.853919
Probability	0.640876	0.441090	0.706122	0.625630	0.652490
Sum	2.930000	20658.00	6.820000	725.2500	344.3000
Sum Sq. Dev.	0.040973	3302696.	0.001973	62.45000	48.54853
Observations	15	15	15	15	15

A descriptive statistics was conducted to detect any anomalies in the data that requires correction before actual analysis. The result from table X shows that GNPPC variable has high scale effect as can be seen from standard deviation of GNPPC with positive skewness and data transformation is needed to make it suitable for the desired analysis in order to reduce the scale effect that will affect the residual or error term.

Table XI: Partial Correlation Results of Uncensored CPI with untransformed Human development indices of Nigeria.

Control Variables			ucpi	gnppc	leab	pg
hdi	ucpi	Correlation	1.000	.905	.778	.808
		Significance (2-tailed)	.	.000	.001	.000
		df	0	12	12	12
	gnppc	Correlation	.905	1.000	.719	.804

	Significance (2-tailed)	.000	.	.004	.001
	df	12	0	12	12
leab	Correlation	.778	.719	1.000	.915
	Significance (2-tailed)	.001	.004	.	.000
	df	12	12	0	12
Pg	Correlation	.808	.804	.915	1.000
	Significance (2-tailed)	.000	.001	.000	.
	df	12	12	12	0

* Sig at $p < 0.01$

The result of partial correlation between the Nigerian human development indicators, show that there is strong and significant positive relationship between corruption perception index and gross national product, life expectancy at birth and poverty gap at \$1.25 per day at $p < 0.01$.

Table XII: Descriptive Statistics Results of censored CPI with transformed Human development indices of Nigeria.

	CENCPI	HDI	LNGNPPC	LNLEAB	LNPG
Mean	1.140000	0.454667	7.167333	3.878000	3.129333
Median	0.000000	0.460000	7.160000	3.880000	3.130000
Maximum	2.700000	0.470000	7.650000	3.950000	3.250000
Minimum	0.000000	0.430000	6.680000	3.820000	3.030000
Std. Dev.	1.268745	0.011872	0.363622	0.042628	0.077779
Skewness	0.167930	-0.448496	-0.047486	0.188759	0.099056
Kurtosis	1.073404	2.444211	1.364475	1.889418	1.858407
Jarque-Bera	2.390358	0.695935	1.677475	0.859946	0.839052
Probability	0.302650	0.706122	0.432256	0.650527	0.657358
Sum	17.10000	6.820000	107.5100	58.17000	46.94000
Sum Sq. Dev.	22.53600	0.001973	1.851093	0.025440	0.084693
Observations	15	15	15	15	15

The transformation of the human development data was carried out using natural logarithm and the censoring of the CPI data to make it suitable for Tobit regression analysis. As can be seen the scale

effect is reduced along with skewness. Being a non-parametric data, a model that does not require strict normality assumptions is required to test the data, hence the use of Tobit regression analysis.

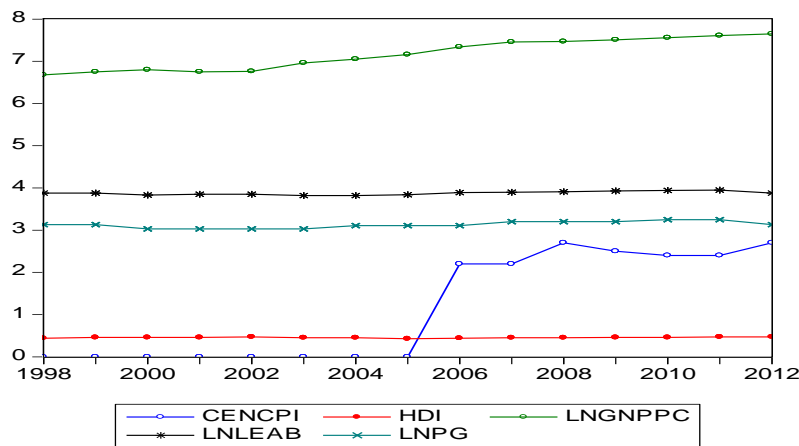


Figure III: Graph of censored cpi with transformed Human development indices of Nigeria.

From the graph of figure IV, that there is a positive covariance between human development index, Gross national product per capita, life expectancy at birth and poverty at \$1.25 per day from one year to another.

Table XIII: Granger Causality Tests Results of uncensored CPI with Transformed Human development indices of Nigeria.

Pairwise Granger Causality Tests

Date: 05/06/13 Time: 14:34

Sample: 1998 2012

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
HDI does not Granger Cause UCPI	13	0.56548	0.5892
UCPI does not Granger Cause HDI		1.83107	0.2214
LNGNPPC does not Granger Cause UCPI	13	11.6718	0.0042
UCPI does not Granger Cause LNGNPPC		6.85625	0.0184
LNLEAB does not Granger Cause UCPI	13	0.74725	0.5040
UCPI does not Granger Cause LNLEAB		3.19709	0.0954
LNPG does not Granger Cause UCPI	13	1.90468	0.2106
UCPI does not Granger Cause LNPG		13.2503	0.0029

From the result of the Granger causality tests, there is significant and dual causal relationship between corruption perception index and gross national product per capita at 5%. This means a country's Corruption perception depends on the level of citizen's individual wealth (Gross national product per capita). In other words low level of citizen's individual wealth can give rise to low corruption perception index and high level of citizen's individual wealth, to high corruption perception index. In addition, there is a significant positive relationship between corruption and poverty at 5%. This means corruption has the potential of causing poverty in a country and not the other way round.

Table XIV: Tobit Regression Results of censored cpi with Transformed Human development indices of Nigeria.

Dependent Variable: CENCPI

Method: ML - Censored Normal (TOBIT) (Quadratic hill climbing)

Date: 05/05/13 Time: 01:15

Sample: 1998 2012

Included observations: 15

Left censoring (value) at zero

Convergence achieved after 8 iterations

Covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-20.02519	29.08110	-0.688598	0.4911
HDI	-90.24919	48.36222	-1.866109	0.0620
LNGNPPC	12.59585	4.387009	2.871171	0.0041*
LNLEAB	-7.581391	6.493869	-1.167469	0.2430
LNPG	-0.598126	3.155521	-0.189549	0.8497
Error Distribution				
SCALE:C(6)	0.295720	0.081548	3.626319	0.0003
Mean dependent var	1.140000	S.D. dependent var	1.268745	
S.E. of regression	0.263695	Akaike info criterion	1.080035	
Sum squared resid	0.625815	Schwarz criterion	1.363255	
Log likelihood	-2.100259	Hannan-Quinn criter.	1.077018	
Avg. log likelihood	-0.140017			
Left censored obs	8	Right censored obs	0	
Uncensored obs	7	Total obs	15	

*Sign at 1% and 5%

The result of Tobit regression shows a significant positive impact of gross national product per capita on corruption at 5% with a positive coefficient. Life expectancy and poverty gap show insignificant and negative impact at 5%. This means corruption perception of Nigeria improves with improvement in per capita gross national product, while decrease in poverty gap accompanied with increase in corruption perception index.

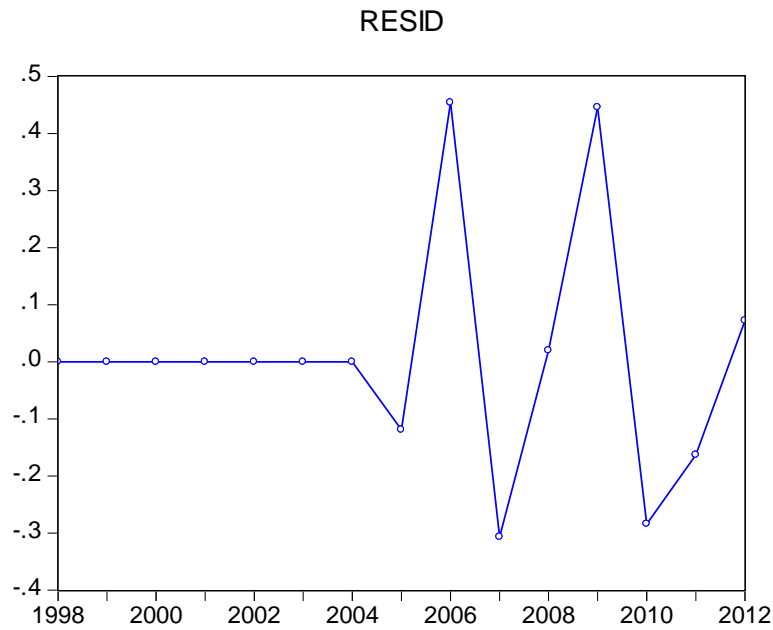


Figure IV: Residual plot of censored cpi with transformed Human development indices of Nigeria

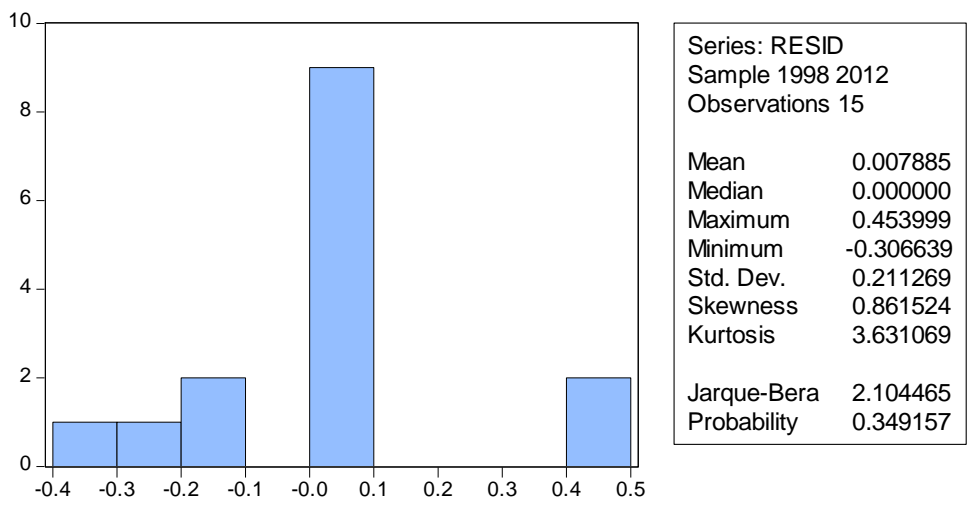


Figure V: Residual plot of censored cpi with transformed Human development indices of Nigeria

The graph in figure IV and histogram plots in figure V of the residual term show normality of the error term and this is confirmed by Jarque-Bera test.

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Since 1998, the Sub Saharan Africa has been in the news concerning corruption. Annual corruption indices developed by civil society organizations show that developing countries mostly from Sub Saharan Africa (SSA) are always among the top ten of the most corrupt countries (CPI,1998-2012).

The research finds that there is more corruption in Central African Countries, followed by East African Countries, then West African countries and less on Southern African Countries.

The result of partial correlation between the Nigerian human development indicators, show that there is strong and significant positive relationship between corruption perception index and gross national product, life expectancy at birth and poverty gap at \$1.25 per day at $p < 0.01$.

The result of Granger causality test and Tobit regression of corruption on human development indices however show a significant positive impact of gross national product per capita on corruption at 5% with a positive coefficient, while decrease in poverty gap is accompanied with increase corruption perception index.

The research also finds that Nigeria was ahead of Sub Saharan Africa average on human development indices up to 2006. From 2007, the nation lost it efforts at improving the welfare of its citizens and is now operating below Sub Saharan average.

The research concludes that low per capita gross national product and poverty in Nigeria has great impact on the country's corruption perception index. The research recommends that efforts at tackling corruption in Nigeria should target per capita gross national product and poverty and hence in Sub Saharan Africa particularly in the Central African region followed by East Africa, West Africa and then Southern Africa.

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