Insurance Culture, Financial Literacy, and the Corruption Rot in Nigeria

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Abstract

This paper carries out both exploratory and empirical examinations of life insurance, financial literacy and corruption as probable antidote for economic inclusive challenges in the Nigerian growth project. A review of Nigeria's corruption indexes (Ci) ratings give the perception that Nigerians are endemically corrupt, greedy, avaricious, and valueless. Though, highly contestable; this study hypotheses that Ci 'granger causes' life insurance penetration (LIP),income inequality (proxied by Gini coefficient), financial literacy (Flt)(proxied by Literacy rate), Regulatory quality (Rqt), and gross domestic product growth rate (Gdpgr). The study finds significantly that Ci actually granger causes Gini, Flt and Gdpgr; also Rqt granger causes Lip. The major findings of the variance decomposition is that the predominant source of fluctuations in all the 'economic inclusions' variables tested is income inequality, absorbing average of 85 percent of each through the short to long run periods. However, this study could not establish Lip led Ci, in their nexus, as postulated by literature. The study recommends fiscal measures to tackle income inequality, raise the income tax rate of the rich, focusing more on indirect taxes on luxuries, and eliminate all taxes for the poor. Institutional regulatory lapse in the insurance industry should better addressed by appointing tested technocrats.

Key words: Economics of corruption, Financial literacy, Insurance culture

1.0 Introduction

Corruption is not peculiar to Africa; it exists all over the world (Glynn *et al*, 1997). However, petty corruption seems to pervade developing economies with Nigeria ranking among the most corrupt nations (see figure 1 below). Insurance consumption or insurance culture, which this paper advances as market instrument for economic inclusion, is simultaneously low in Nigeria (see figure 1 below). Is there any causal linkage? Shabbir and Anwar (2007) citing World Bank source asserts that corruption is the single greatest obstacle to economic and social development. It undermines development by distorting the role of law and weakening the institutional foundation on which economic growth depends.

 The study is partly motivated to explore further this 'weakening of institutional foundations' particularly insurance culture and more so that Transparency International (TI) declared Nigeria most corrupt nation, 1996, 1997 and 2000 (Shabbir and Anwar, 2008). But the architecture or economics of corruption could be more aggravated if the institutional frameworks to tackle its risks are non-functional due to financial knowledge of its basis of existence. The noise of corruption woes in Nigeria rents the air and a topical hot issue from the current political competition- model of President Mohammadu Buhari (PMB). The solution being proffered is explicably political and legal by disgorging ill-gotten wealth and possibly meting out punishment from the weak penal codes. Corruption is clandestine and needs more of economic and financial inclusion solutions. Unfortunately, Ades and Di Tella (1997) note that even economists remain vague about how best to reduce corruption citing lack of evidence for policy alternatives. Corruption causes everything like cancer in the human body (Amundsen,1999 cited in Shabbir and Anwar, 2008); from economic inefficiency (Sharkar and Hassan, 2001), distorting competition (IAIS, 2014), poverty, income inequality and indeed, the hypothesized poor demand of life insurance, health insurance and private pensions may have causal relationship to it. The most inimical investment behavior of corruption as perceived in Osoba (1996) is the private accumulation of wealth function it assumes in Nigerian social life. This may have obfuscated the financial institutional functions of life and pension insurance. Life insurance penetration in Nigeria on the average in the last thirty years has not exceeded 0.6 percent. It is one of the worst in the world and insignificant in African ranking.

Table1 shows 2013 stylized facts of life insurance consumption (life insurance penetration) and Corruption perception Index (CPI) of Nigeria and selected African and Global Peers.

Table 1: 2013 Life insurance penetration in Nigeria and select African countries and the world

Countries	Population ('mill.)/rank	Life Premium($'m)	LIP	CPI Score	CPI Rank
Nigeria	173.6/7th	457	0.0009	25	144th
South Africa	52.9/27th	44,556	0.127	42	72nd
Egypt	82.0/15th	1,051	0.004	32	114th
Kenya	44.3/30th	520	0.009	27	136th
Chile	17.6/64th	6,986	0.025	71	22nd
Singapore	5.3	15,092	0.05	86	5th
S. Korea	50.2/26th	91,204	0.07	55	46th
Japan	127.3/10th	422,733	0.086	74	18th
Brazil	200.3/5th	49,417	0.02	42	72nd
China	1,357.4/1st	152,121	0.016	40	80th
India	1,252.1/2nd	52,174	0.027	36	94th
United States	316.1/3rd	532,858	0.03	73	19th

Source: Life Insurance Information is from: 2015 International-Insurance-fact-book: www.iii.org/publication/international-insurance-fact-book-2015/worldoverview; Population: 2014 World-Bank/indicator/N.E.GDI.TOTL.Zs, data.worldbank.org/, accessed February 15th, 2015; Life Insurance Penetration (LIP) is Authors' computation. Corruption Perception Index: Transparency International https://www.transperency.org/cpi2013, accessed Sept. 9, 2015

Figure 1 presents the glaring position of Nigeria as least life insurance penetrated economy and the most corrupt of the peers.

There are very few empirical researches on the relationship of corruption with private insurance market development or culture, a gap that is conceived to be filled in this study. Also, this paper aims to unearth the non-functionality of the insurance institution as a risk management tool against petty corruption with the incidence of financial illiteracy. The critical questions are therefore: Why is corruption a rapidly growing informal institution in Nigeria? Why is petty (quiet) corruption prevalent in Nigeria? Why would there be relationship between corruption syndrome and life insurance penetration? Why is insurance culture and financial illiteracy a prevention mechanism against petty corruption and low economic inclusion? The rest of the sections are arranged as follows: Literature review and theoretical framework; Methodology and Data; Results and Discussion of findings; Recommendations and Conclusion.

2. Theoretical Framework

Corruption is multi-dimensional phenomena and hence has been defined in several ways. A common definition of corruption as "abuse of public power for private gains or illegal benefits" is echoed in Osoba(1996), Eker (1981), Word Bank (1997) Treisman (2000), Sarkar and Hasan (2001), Akçay (2002), Hwang (2002), Svensson (2005), Alt and Lassen (2003), Todaro and Smith (2003) and Buscaglia and Djik (2003) satisfies in part the objective of this study because corruption in Nigeria pervades all her socio-economic, private and political life . A more general definition is given by Eiras (2003) as 'a form of unethical behavior and wrongdoing'. Unethical means a general consensus by the society of what is wrongdoing (Nwabuzor, 2005)). And that means it is not only abuse of public power but all unethical actions that confers illegal benefit even in the private sector. What Smith and Smith (2010) describes as petty corruption and flaunts it that this has no place in the United States. He tags corruption as being used in discussions as a 'Nigerian factor'. Petty corruption involves the exchange of small amounts of money and granting of minor favors by those seeking preferential treatment (Lambert-Mogilansky, Majumdar and Radner, 2007), learnt by small government officials (Nwabuzor, 2005) from the untouchable small plutocrats (Osoba, 1996). In tackling this menace, all previous military governments had sworn to see to its end (Osoba, 1996) using legal means. The 2015 Buhari-led administration has internationalized the problem as a financial crime that inhibits national growth and inimical to global financial

stability. Despite these strategies, can it explain the atmosphere of economic insecurity being experienced in Nigeria?

2.1 Theory of Corruption

Why are we so concerned about the causes of corruption and how do economic institutions mitigate it? Corruption is bribery- the payment of money or in kind that is given or taken in a corrupt relationship (Wragg, Payne and Connor, 2009). Eker (1981) confines corruption to public life and contends that private corruption is not really classified as corruption but is rather labeled theft, fraud or embezzlement. Arslan and Saglam (2011) reiterate the existence of corruption in the private sector. Although, Eker argues very strongly on the necessary and sufficient conditions that make corruption to tick without any reference to the economic implication that corruption is a protection device against future need even though it is illegal. However, Osoba (1996) incisively connotes its investment function as being a tangible means of private accumulation in absence of other means in Nigeria. Smith and Smith (2010) consider the 'inequality trap' as the main factor that distinct Nigerian corruption from the rest of the world. A more realistic reason is that the criminal wants to raise some income and takes a risk (defined in Roumasset (1979a) as the probability that income will fall below a disaster level). This paper argues that as precautionary savings serve as insurance purpose that is well considered in literature so is corruption except for its illegal characteristics. The causes of corruption were broadly divided into economic and non-economic in Shabbir and Anwar (2008). Listed as education, level of development, income distribution and economic freedom; except the last, they theoretically equate to determinants of demand for insurance.

A large number of studies, Kunicova and Rose- Ackerman (2005), Lederman, et al (2005), Braun and Di Telia (2004), Chang and Golden (2004) infer negative correlation between corruption and income. The Chairman of TI identifies poverty in a lecture series in Lagos (Werlin, 2005). Though, positive relations were recorded in some other studies like Brauna and Di Telia (2004). The consequences of corruption elaborately examined in Mauro (1995 and 1996) establish that corruption lowers private investment and economic growth because private investors are discouraged through increased cost of transaction.

Within the same theoretical underpinnings, corruption can induce economic development by economic actors paying their way to by-pass inefficient rules and regulations. In essence, corruption reduces average income in the economy. It distorts the way government spends money thereby reducing the efficiency of health, educational, transport systems etc. by implication, it increases mortality rate, reduces literacy levels and arguably militates against insurance culture. In combating corruption, Osoba (1996) contends that in spite of its evils, the military government in 1983-1985 lost steam because of her anti social welfare behavior. Thus, the theory of corruption reduction could supposedly the promotion of economic security or inclusion

2.2 Economics of Risk and Insurance

Insurance provides risk management services (Ranade and Ahuja, 2000), against death, sickness accident, old age poverty, property loss and legal liabilities. Far back in time, it is seen as the business of human life under uncertainty. Relationally to income uncertainty, insurance is a mechanics by which risk-averse individuals transfer the fear of future uncertain event (Trowbridge, 1975). The word fear is used in this study instead of negative consequence to highlight its socio-psychological need just as corruption is social construct used as an accumulation function (Osoba, 1996). Hence, it is a financial planning instrument to smooth consumption shocks and address contingent needs. These risks are also referred to as life-cycle events. The risk-averse nature of human beings predisposes them to seek insurance or else, self-insurance in whatever form is activated (Szpiro, 1985 and Lee, 2010). Self-insurance is adopted in form of risk-budgeting for contingencies. This may induce petty corruption where income is inadequate to meet risk-budgeting or if there is no confidence in the insurance market. The construct is that risk management (insurance device) is the logical development and implementation of a plan to deal with potential losses (Dorfman, 2009). Since, there must be no vacuum in self-protection mechanism in nature; other means are innovated in the absence or low insurance take-up. Trowbridge (1989) provides the building blocks for this thinking in economics of risk. He deduces that the main reason for the establishment of security forces is to prevent whimsical criminal behaviour rather than the secondary reason which is enforcement. For the same reason the existence of financial security system of which insurance is one is to provide a risk management institutional framework for the society to reduce financial uncertainties. The financial security system is an economic inclusion mechanism which becomes effective by the access.

The history of pension, social insurance and compulsory life insurance for example in France following the example of Bismarck's Germany is primarily to provide economic inclusion for the mass of workers blazing industrialization (Rubinow, 1911) and by implication insurance culture. Otherwise, workers may be alienated from risk-taking and economy suffers. The arguments for compulsory old age and life insurance which should have prompted insurance culture in Germany, France and the rest of Europe was used to promote social capital. It is arguably a plausible mechanism to hedge against petty corruption in Nigeria's case. Okere, Lawrence and Njoku (2015) trace the reasons for increase in demand for insurance to employee agitation for improved welfare package. The basis for participating in micro-insurance were enumerated to be; basis risk, credit constraint, house-wealth, risk aversion and trust (Giesbert, Steiner, and Bendig, (2011) mentioned in Wang and Rosenman, 2007; Gine, Townsend, and Vickery 2008; Cai et al., 2009; Cole et al., 2009; Thornton et al., 2010; Gine and Yang, 2009; Ito and Kono, 2010). On this account, Giesbert, Steiner and Bendig, (2011) argue that insurance mechanism is either an alternative to savings and loans or are complementarities. In recognition of this, a low insurance uptake, credit constraint, poor house wealth (savings) may stimulate petty corruption. Poor insurance pricing and management on the part of insurers could also induce weak insurance behaviour or culture.

The economics of insurance is its utility function in ministering to human welfare and by distributing the risks arising out of the uncertainty of human life bring about the highest attainable degree of economic security and aid in the equitable redistribution of wealth and the conservation of accumulated capital (Hoffman, 1911). He also justified that life insurance unlike savings is an economic necessity of the prosperous otherwise, life uncertainties becomes higher.

Theoretically, financial security systems increase personal economic security and economic inclusion (Trowbridge, 1989). Using Pareto efficiency, Seog (2010) demonstrates that insurance increases social welfare. In qualitative terms, it is deduced insurance gives economic confidence and peace of mind in risk-taking which is a path economic development. On this basis, Hopkins (2013) links reward seeking individuals to risk-taking behavior as the main source of risk. In the absence of adoption of insurance as economic protection instrument then, the risk management behavior is left open to other means in the economy. This may be the risk of the corruption rot prevalent in the Nigerian society.

2.3 Financial literacy, Insurance Culture and Financial inclusion

Financial literacy means ability to understand and make use of financial concepts (Anguelov *et al.*, 2004), also implies financial knowledge-ability to use financial information to take effective decisions. Education is presumed can help improve its level, although the effectiveness is not yet strong (LaBorde, Motter and Whalley, 2013 cited in Lyons *et al.,* 2006). By implication, financial knowledge is a critical determinant of life insurance consumption. In parallel terms, the supply of insurance in Nigeria is identified to be suffering huge knowledge gap (Daniel, 2015).

To understand insurance culture, the characteristics of Nigerian insurance market are further illustrated: Nigerian insurance market consist of 49 companies as at 2014 (compared with US market in 1860 with 47 companies (Hoffman, 1911), seven business classes of insurance serve only 1% of the population compared to South Africa's 30% . This is attributable to poor insurance literacy or culture (CBN Report, 2012). Motor insurance produces the highest premium volume with 470, 000 policies and life insurance a distant second (173, 000) attributable to compulsory nature of automobile and group life insurance (as at December, 2010). The industry focuses more on corporate products rather than retail insurance. The pensions market which was migrated from Defined Benefit (DB) to compulsory Defined Contributory (DC) Scheme in the Pension Reform (2004) characterized by the Chilean model, yet, cannot be said to be a financial inclusion mechanism. While the Nigerian Pension market is about 8% penetration after 10 years (Akpan and Ukpong, 2014), the Chilean penetration is 58.55% after 31 years. The staggering negative skewness of low insurance consumption portends poor financial literacy, insignificant economic inclusion and weak insurance culture.

Insurance culture or insurance inclusiveness is a road map to financial inclusion. In CBN report (2012), access to insurance products is listed as a financial inclusion strategy. Even though the attention of financial inclusion is on accessibility to banking credit products (Dev, 2006), the relationship between savings, credit and insurance compels strategic focus on insurance management. The insurance mechanism could reduce the elements of corruption rot when the combination of life, health and pension insurance is maximized as security products.

Life insurance is a veritable tool for individual risk management against death and old age risks and is mainly used as a contractual savings instrument (Curak, DŽaja, and Pepur, 2013).

The demand for life insurance as a means of life time allocation process is well considered in literature (Fisher, 1973; Campbell, 1980; and Lewis, 1989). In this framework, the consumer maximizes lifetime utility (Outreville, 2014). Although, demand for insurance is conditioned by several other factors such as culture and religion (Douglas and Wildavsky, 1982 mentioned in Houssels et al., 2005), income and education remain potent factors. Thus, any economic shock that drives income inequalities higher; lowers the quality of education and worsens mortality and life expectancy will negatively affect demand for life assurance. Succinctly hypothesized in Pörtner (2001) as risk-insurance; translated as, in a weak risk diversification system the need for insurance must be met by other means. It is expected that countries that are high on life insurance consumption have less incentives to be corrupt and vice-versa.

 In theory the model of consumption/savings behavior demands a rational and farsighted life time consumption utility. The expected utility is the expected value of sum per-period utility discounted from over the working life. A well illustrated framework in Lusardi (2008) as *"assets and consumption each period are determined endogenously by maximizing this utility function subject to any inter-temporal constraint, which represents the present discounted value of future resources (including earnings social security and pensions)."* Any devolution risk of this expected utility might naturally predispose any one to petty corruption. Traditionally, this is handled by relying on families' support and children as an insurance against life events in most parts of developing economies (Jensen, 1990 and Pörtner, 2001). According to Ogunshola (1984), Nigerian families depended on African traditional family consanguinities to manage individual and society risks. As educational realities breakdown these familial ties, this study argues that Nigerian households will be exposed to greater life risks that may prompt individuals to criminal tendencies such as corruption risk as a protective instrument. Corruption risk is here defined as the potential to assume petty corruption. A theoretical framework for decision making under uncertainty is explored to explain the possible connections of corruption to insurance culture.

2.4 Theoretical Framework

The risk-averse nature of human beings predisposes them to seek insurance or else, self-insurance in whatever form is activated (Schlesinger, 1981, Szpiro, 1985, Lee, 2010, and Seog, 2010). Self-insurance is adopted in form of risk-budgeting for contingencies. In a two state model, an increase in risk aversion attracts more self-insurance. Increase in risk aversion can be brought about by poverty and low education (Kangoh, 2010). This may induce petty corruption where income is inadequate to meet risk-budgeting or if there is no confidence in the insurance market. Seog (2010) advances the insurance mechanism for social welfare and Pareto resource efficiency, claiming that by insurance context one could work directly with losses, instead of returns or wealth.

Using the insurance principle in the risk allocation literature, it would be full-handy to conjecture an individual who is risk neutral and efficient (assumes others' risk). For two individual- 1 representing risk neutral, while the other 2 strictly averse, a Pareto efficient allocation of risk, i.e. Y= (y_1, y_2) between these two would be best captured by this framework (Soeg, 2010: 40).

Max $_{(Y)}$ EU_1 ($W_1 - y_1$)   1

s.t.EU_2 ($W_2 - y_2$) $\geq K$; taking that $y_1 + y_2 = z$, for each realized (x_1 x_2), that is $z = x_1 + x_2$

Imposing second constraint into the first, the program is simplified to solve for some K,

$\max_{(Y)}$E$U1(W_1 - y_1$)   2

such that E$U2$ ($W_2 - z + y_1$) $\geq K$

Introducing the Lagrange function produces

L=E$U_1(W_1 - y_1$) $+\lambda[$E$U_2 - z + y_1) - K$],   3

In this context, an efficient allocation should satisfy the following:

$$L_{y1} = EU_1'(W_1 - y_1) + \lambda U_1'(W_2 - z + y_1) = 0 \qquad 4$$

For each (x_1, x_2) the following relationship holds:

$$\Rightarrow \lambda = U'_1(W_1 - y_1)/U'_2(W_2 - z + y_1) \qquad 5$$

Equation 5 indicates that the marginal utility of individual 2 is constant in all states as follows:

$$U_2'(W_2 - z + y_1) = 1/\lambda, \text{for every } (x_1, x_2)$$

Implying that wealth is same across (x_1, x_2), since individual 2 is risk averse. Thus, since z represents total loss which is risky, and upon individual 1 being risk neutral, individual 2 faces no risk; all risk is assumed by individual 1 under a Pareto efficiency allocation arrangement. The risk transfer arrangement thus benefits both parties.

3. Methodology and Data

Being an exploratory and empirical study, we attempt to obtain the maximum information on the short and long–run relationships that may promote economic inclusion, through the variables associated with incidence of corruption in Nigeria. These are life insurance penetration (Lip), financial literacy (Flt), regulatory quality (Rqt), income inequality (Gini coefficient) and income growth (Gdprt). Granger causality technique and Variance autoregression (VAR) are applied.

Model Specification

In general, a structural Granger VAR model with k-lag can be of the compact form:

$$V_t = \sum_{i=1}^{K} C_i V_{t-i} + \mu_t \qquad\qquad 2$$

Where: $Vt = Ci, Gini, Rqt, Lip, Gdpgr, Flt;$ C is coefficient of matrix the 6 x 6; μ_t is vector of residuals of the reduced form equations. Vt stands for vector of variables. The Granger Variance autocorrelation model is patterned after Kammoun (2010) and specified explicitly as follows:

$$\Delta Ci_t = \alpha_1 + \sum_{i=1}^{P} \theta_{1i}\Delta Gini_{t-i} + \sum_{i=1}^{P} \delta_{1i}\Delta Rqt_{t-i} + \sum_{i=1}^{P} \phi_{1i}\Delta Lip_{t-i} + \sum_{i=1}^{P} \psi_{1i}\Delta Gdpgr_{t-i} + \sum_{i=1}^{P} \xi_{1i}\Delta Flt_{t-i} + \mu_{1t},$$

$$\Delta Gini_t = \alpha_1 + \sum_{i=1}^{P} \theta_{1i}\Delta Gini_{t-i} + \sum_{i=1}^{P} \delta_{1i}\Delta Rqt_{t-i} + \sum_{i=1}^{P} \phi_{1i}\Delta Lip_{t-i} + \sum_{i=1}^{P} \psi_{1i}\Delta Gdpgr_{t-i} + \sum_{i=1}^{P} \xi_{1i}\Delta Flt_{t-i} + \mu_{1t},$$

$$\Delta Rqt_t = \alpha_1 + \sum_{i=1}^{P} \theta_{1i}\Delta Gini_{t-i} + \sum_{i=1}^{P} \delta_{1i}\Delta Rqt_{t-i} + \sum_{i=1}^{P} \phi_{1i}\Delta Lip_{t-i} + \sum_{i=1}^{P} \psi_{1i}\Delta Gdpgr_{t-i} + \sum_{i=1}^{P} \xi_{1i}\Delta Flt_{t-i} + \mu_{1t},$$

$$\Delta Lip_t = \alpha_1 + \sum_{i=1}^{P} \theta_{1i}\Delta Gini_{t-i} + \sum_{i=1}^{P} \delta_{1i}\Delta Rqt_{t-i} + \sum_{i=1}^{P} \phi_{1i}\Delta Lip_{t-i} + \sum_{i=1}^{P} \psi_{1i}\Delta Gdpgr_{t-i} + \sum_{i=1}^{P} \xi_{1i}\Delta Flt_{t-i} + \mu_{1t},$$

$$\Delta Gdpgr_t = \alpha_1 + \sum_{i=1}^{P} \theta_{1i}\Delta Gini_{t-i} + \sum_{i=1}^{P} \delta_{1i}\Delta Rqt_{t-i} + \sum_{i=1}^{P} \phi_{1i}\Delta Lip_{t-i} + \sum_{i=1}^{P} \psi_{1i}\Delta gdpgr_{t-i} + \sum_{i=1}^{P} \xi_{1i}\Delta Flt_{t-i} + \mu_{1t},$$

$$\Delta Flt_t = \alpha_1 + \sum_{i=1}^{P} \theta_{1i}\Delta Gini_{t-i} + \sum_{i=1}^{P} \delta_{1i}\Delta Rqt_{t-i} + \sum_{i=1}^{P} \phi_{1i}\Delta Lip_{t-i} + \sum_{i=1}^{P} \psi_{1i}\Delta gdpgr_{t-i} + \sum_{i=1}^{P} \xi_{1i}\Delta Flt_{t-i} + \mu_{1t},$$

Where: $\theta, \delta, \phi, \psi, and \xi$ are unknown parameters; α is constant term; μ is the residual for each equation. Both α_i and μ_i are N x 1 vectors.

Data and Descriptive Statistics

Data for 34 years (1980-2013) were sourced from the National Bureau of Statistics (NBS) and the Central Bank of Nigeria (CBN) Statistical Bulletin. The data for gross domestic product growth rate (Gdpgr) is obtained from NBS. Life Insurance Penetration (Lip) is computed from data obtained from Central Bank of Nigeria (CBN) statistical bulletin and National Insurance Commission of Nigeria (NAICOM). Data on corruption index (Ci) is sourced from Transparency International (TI) organization. The TI index sums up the perceptions of the degree of corruption as seen by business people and country analyst, and range between zero (0) representing highest corrupt, and ten (10), which is very clean (Transparency International, 2014). Financial literacy (Flt) represents literacy rate was obtained from the National Bureau of Statistic (NBS). Regulatory quality (Rqt) represents financial regulatory standard index for Nigeria institutions obtained from World Governance Institute (WGI, 2013) Report. The Regulatory index is organized by the World Bank experts annually for global governance rating of each nation's institutions regulatory quality ranked from -0.25(lowest score) to +2.5 (highest score).

Descriptive Statistics

The descriptive statistics of the set of data within the study period in context provides an overview of the behavior of the variables. The highest incidence of corruption occurred in 2012 while the lowest was in 1980 and 1981. It indicates that incidence of corruption has been on an increasing trend in Nigeria. Financial literacy's highest rating occurred in 2013 with 62% of adult Nigerians, while the least occurred in 1983. The growth rate in Gdp has its highest achievement in 2004 while the least growth rate was occurred in 1981. On level of income inequality (Gini co-efficient), the nation's highest rating occurred in years 1997-2003 , while the lowest is 2012. Life insurance penetration (Lip) has the highest record in 1983 while the lowest performance occurred in 1995; an indication that demand for life insurance is not correlating with the pattern of population, literacy and economic growth. Regulatory quality has its highest rating in 1985 while the lowest is in 1994.

Table 1: Descriptive statistics

	LCI	LGINI	LFLT	LLIP	RQT	GDPGR
Mean	0.314508	3.527675	3.979450	-2.106326	-1.187353	3.756471
Median	0.222343	3.777348	3.998159	-2.107849	-0.820000	4.525000
Maximum	0.993252	3.923952	4.127134	-1.347074	-0.200000	10.60000
Minimum	-0.356675	-0.717440	3.806662	-3.055482	-8.430000	-13.30000
Std. Dev.	0.391041	1.078967	0.081813	0.392860	1.372464	4.937615
Skewness	0.193193	-3.693717	-0.400908	-0.159950	-4.520501	-1.311298
Kurtosis	2.101277	14.79965	2.396676	2.913172	24.27953	5.568542
Jarque-Bera	1.355745	274.5585	1.426456	0.155657	757.2904	19.09018
Probability	0.507696	0.000000	0.490060	0.925123	0.000000	0.000072
Sum	10.69327	119.9409	135.3013	-71.61510	-40.37000	127.7200
Sum Sq. Dev.	5.046138	38.41760	0.220879	5.093182	62.16066	804.5414
Observations	34	34	34	34	34	34

Unit Root Test: Unit root test (*see table 5*) examines each variable's trending characteristics. All variables exhibit trending behavior but subsequently became stationary at first difference *I(1)*. By transforming the variables and subsequent test for stationarity, it could produce *I(0),* particularly the stochastic error e_t (Asteriou and Hall, 2011). The cointegration (linear combinations) (see table 4) test gave more than one linear combinations, an indication for long run study and forecasting possibility (Hill *et al.*, 2011).

Table 2: Unit root table

Variables	*ADF test: Level & First difference (Intercept and Trend)*	*Remark: Order of integration*	*% Level of Significance*
lCi	*-5.164479*	**I(1)**	**1**
Flt	*-7.038538*	**I(1)**	**1**
Gdpgr	*-7.830062*	**I(1)**	**1**
lGini	*-6.114396*	**I(1)**	**1**
Rqt	*-6.658251*	**I(1)**	**1**
lLip	*-7.259483*	**I(1)**	**1**

Source: **Authors' estimation using E-view 7.0; MacKinnon (1996) one-sided p-value.**

Note: the variable's critical values at 1 and 5 percents are -4.273277 and -3.557759 respectively.

4. Results and Discussion of Findings

Granger Test:

Granger (1969) examines short run predictive influence on variable *y* by a predetermined variable *x*. Asteriou and Hall (2011) state that the standard test results in the relationship would be of four outcomes: bidirectional; unidirectional- pairwise; and no-causality. The outcome herewith (see *table 3* below) at 5% significant level produces unidirectional granger causality as follows -corruption index (Ci) 'granger cause' financial literacy(Flt); Ci 'granger cause' Gdp growth rate(gdpgr); Rqt 'granger causes' Lip. At 10%, Ci 'granger causes' income inequality (gini), and Flt 'granger causes' Gdpgr.

Examining the predetermined influence of Ci on financial literacy encapsulated in the granger result makes it apt, that corruption as an anti-development agent (Furphy, 2010) retards socio-economic progress, giving the cost on the nation's resources, which would have been invested in advancing literacy. To the World Bank (2010), incidence of low level of corruption, which the bank regards as "quiet corruption" is prevalent in many African government -run education, health and agricultural services, damaging the long term education of the very poor and vulnerable, who mostly rely on government services.

Corruption also granger-causing Gdpgr indicate that corruption has the tendency of denying the economy legitimate investment and development opportunities, alienating the poor and hence widening the nation's income gap. Todaro and Smith (2011) reveal that reduction in corruption encourages investments and "effort to expand the pie" rather than its distribution, which also leads to growth.

Regulatory quality (rqt) granger causing life insurance penetration is in relation to the supply of regulatory standards for insurance management which should boost insurance demands. The quality of insurance is determined by the nature of price, solvency and market conduct regulations as it informs the soundness and safety of the industry.

Ci granger causing Gini indicates reinforces the literature that a potent cause of rising inequality in less developed countries is rising evidence of corruption. . Gupta et al. (2002) found that high corruption correlate with high income inequality and poverty as corruption is found to reduce social service meant for the poor. Smith and Smith (2010) suggest the distinguishing factor of Nigerian-type corruption from the rest of the world is the 'inequality trap'.

Pairwise Granger Causality Tests
Date: 08/29/15 Time: 20:44
Sample: 1980 2013
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
LGINI does not Granger Cause LCI	33	0.34112	0.5635
LCI does not Granger Cause LGINI		3.33892	0.0776
LFLT does not Granger Cause LCI	33	0.54205	0.4673
LCI does not Granger Cause LFLT		4.10384	0.0518
GDPGR does not Granger Cause LCI	33	0.03925	0.8443
LCI does not Granger Cause GDPGR		7.52610	0.0102
GDPGR does not Granger Cause LFLT	33	0.41387	0.5249
LFLT does not Granger Cause GDPGR		3.02830	0.0921
RQT does not Granger Cause LLIP	33	14.8815	0.0006
LLIP does not Granger Cause RQT		0.29074	0.5937

Source: Author's estimation using Eview 7.0

Cointegration

Having established that the variables are stationary at I(1), cointegration test becomes necessary. The cointegration test below reveals 4 ranks in the trace and eigen values criteria respectively (see table 7 below), suggesting that the model variables are eligible for combination in a long term relationship test.

Table 4: Cointegration Rank Test

Date: 08/27/15   Time: 16:58
Sample (adjusted): 1983 2013
Included observations: 31 after adjustments
Trend assumption: Linear deterministic trend
Series: CI FLT GDPGR HDI LIP RQT UMP
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.979635	293.5605	125.6154	0.0000
At most 1 *	0.906743	172.8479	95.75366	0.0000
At most 2 *	0.779062	99.30349	69.81889	0.0000
At most 3 *	0.595215	52.49743	47.85613	0.0172
At most 4	0.414891	24.46109	29.79707	0.1816
At most 5	0.218325	7.846443	15.49471	0.4820
At most 6	0.006771	0.210626	3.841466	0.6463

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.979635	120.7126	46.23142	0.0000
At most 1 *	0.906743	73.54444	40.07757	0.0000
At most 2 *	0.779062	46.80605	33.87687	0.0009
At most 3 *	0.595215	28.03634	27.58434	0.0438
At most 4	0.414891	16.61465	21.13162	0.1910
At most 5	0.218325	7.635817	14.26460	0.4169
At most 6	0.006771	0.210626	3.841466	0.6463

Max-eigenvalue test indicates 4 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Vector Error Correction Term

Upon achieving cointegrating status with differenced stationary variables, it is imperative that the error correction term be established for long run equilibrium. Error correction mechanism reflects the current "error" in achieving long-run equilibrium. Otherwise called the disequilibrium response, as presented in *table 5* below, it posses the standard adjustment negative sign (-0.003). It suggests that 0.3% disequilibrium in the short run dynamics model is adjustable for long run equilibrium.

Table 5: Vector Error Correction

Vector Error Correction Estimates
Date: 09/13/15   Time: 05:37
Sample (adjusted): 1982 2013
Included observations: 32 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Error Correction:	D(LCI)	D(LGINI)	D(FLT)	D(LLIP)	D(RQT)	D(GDPGR)
CointEq1	-0.003081	0.051077	-0.173495	0.076908	-0.136539	0.691449
	(0.01175)	(0.09057)	(0.27352)	(0.01880)	(0.17427)	(0.42968)
	[-0.26222]	[0.56393]	[-0.63430]	[4.09090]	[-0.78350]	[1.60920]

Variance Decomposition test

The Variance Decomposition (VD) is a forecast error decomposition process, which provides the amount of information each variable contributes to the other variables error in the autoregression system. In other words, it determines how much of the forecast error variance of each of the variables can be explained given exogenous shocks of other variables in the VAR system, through the immediate, short to long run periods. From table 5 below, corruption index (Ci)'s standard error (SE) in the immediate and short run periods (0-3 years) is attributed to itself and Rqt. In the medium term to long term periods Income inequality (Gini) assumes the dominant contributor to the variance. It suggests that the corruption issues are basically influence by poor regulatory issues in the short run, while income inequality assumes dominant factor in subsequent periods.

In examining income inequality (Gini) variance in the period, it is also evident that though a higher percentage is due to itself, the next attributable is corruption index (Ci), and on a smaller scale life insurance penetration. This implies that aside from the income gap being due to the characteristics or behavior of the variable, Ci has its impact on accentuating income inequality.

 The variance for financial literacy (Flt) is more attributed to Gini and corruption index from the short to long period analysis, while the immediate period's variance is self induced. The variance of life insurance penetration is largely absorbed in the immediate and short term by self and regulatory quality (Rqt), while in the medium to long term periods Gini absorbed the largest error, with small percentage due to Ci.

The Gdp growth rate's variance decomposition is largely absorbed by Gini from short to long term periods. The immediate period variance is attributed and shared between the Gdp, Rqt and life insurance. In the very long run Ci becomes more pronounced in the Gdpgr error forecast. This paper here recalls Rose-Ackerman (2008) work that irrespective of the prescriptions of macroeconomists, where a country's private and public institutions are very corrupt and dysfunctional, it will never succeed in promoting growth, albeit inclusive one.

Table 6: Variance Decomposition

Variance Decomposition of LCI: Period	S.E.	LCI	LGINI	LFLT	LLIP	RQT	GDPGR
1	0.124194	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.189682	91.04899	0.518866	1.676663	0.029598	6.679196	0.046689
3	0.287907	63.08945	30.30751	1.273874	0.660800	3.772712	0.895655
4	0.633176	26.17861	71.86359	0.370790	0.145782	1.128828	0.312393
5	1.103026	18.98711	79.21286	0.757008	0.464601	0.430088	0.148334
6	1.873723	15.56420	82.19878	0.978577	0.909215	0.278552	0.070680
7	2.822523	15.84526	81.00857	1.149330	1.556024	0.408690	0.032128
8	4.204112	16.14440	80.24256	1.075932	1.933443	0.589154	0.014506
9	6.205247	16.60084	79.51218	0.958531	2.109574	0.809331	0.009543
10	9.360474	16.53491	79.65000	0.831622	2.077937	0.896755	0.008779

Variance Decomposition of LGINI: Period	S.E.	LCI	LGINI	LFLT	LLIP	RQT	GDPGR
1	0.922094	2.796455	97.20354	0.000000	0.000000	0.000000	0.000000
2	1.196469	6.597653	91.05204	1.104622	1.195308	0.002906	0.047470
3	2.205037	7.625877	90.13808	0.947420	1.226789	0.047363	0.014469
4	3.017540	11.34362	84.70526	1.334742	2.184229	0.396723	0.035427
5	4.497262	12.96960	83.05704	1.102316	2.329484	0.521075	0.020479
6	6.499421	14.88559	80.84134	0.979291	2.398539	0.868261	0.026976
7	9.836896	15.42066	80.63189	0.815692	2.215029	0.895529	0.021198
8	15.24359	15.45281	80.90027	0.744810	1.995899	0.888093	0.018113
9	23.94549	15.26382	81.30453	0.736964	1.873075	0.807258	0.014353
10	37.78944	15.07274	81.59609	0.756975	1.814247	0.748345	0.011606

Variance Decomposition of LFLT: Period	S.E.	LCI	LGINI	LFLT	LLIP	RQT	GDPGR
1	0.048046	0.830599	6.415139	92.75426	0.000000	0.000000	0.000000
2	0.056081	4.443848	11.42205	82.10305	1.615803	0.004102	0.411151
3	0.214370	1.989778	91.29526	5.673748	0.117675	0.846694	0.076840
4	0.317794	4.661342	90.41741	3.275090	1.111629	0.397876	0.136655
5	0.623061	6.387452	90.78441	1.487206	1.147003	0.148538	0.045394
6	0.910739	9.778945	86.29738	1.547068	2.005920	0.312106	0.058576
7	1.390258	11.71762	84.36329	1.251464	2.212602	0.420132	0.034888
8	2.035949	13.83121	81.96419	1.096237	2.359734	0.714064	0.034565

9	3.069667	14.82259	81.17857	0.908143	2.254669	0.809822	0.026204
10	4.715303	15.23070	81.01529	0.801661	2.073285	0.857686	0.021382

Variance Decomposition of LLIP:

Period	S.E.	LCI	LGINI	LFLT	LLIP	RQT	GDPGR
1	0.191165	0.249657	5.916396	4.891820	88.94213	0.000000	0.000000
2	0.270255	2.210491	8.946722	2.817059	54.48035	30.10075	1.444634
3	0.466538	2.936754	55.37065	2.187053	22.37749	13.97947	3.148589
4	0.502939	3.191178	53.01498	5.480907	19.29326	14.80700	4.212674
5	0.569940	2.754394	58.68148	4.981818	15.04087	13.19009	5.351343
6	1.269710	3.555376	88.34791	1.075422	3.139451	2.657971	1.223873
7	2.327039	6.315524	89.94793	1.010130	1.488874	0.817852	0.419692
8	3.922122	8.620879	88.18051	1.194781	1.519172	0.327472	0.157183
9	6.033849	10.99564	85.43093	1.287481	1.879514	0.332264	0.074170
10	8.908023	13.13155	82.90025	1.216590	2.211287	0.498755	0.041567

Variance Decomposition of RQT:

Period	S.E.	LCI	LGINI	LFLT	LLIP	RQT	GDPGR
1	1.667376	0.022731	0.022027	0.013408	2.303964	97.63787	0.000000
2	1.681558	0.025387	0.027299	0.338248	2.316696	96.68893	0.603438
3	3.024782	4.052742	63.84300	0.104617	0.814103	30.53875	0.646784
4	4.110609	7.758740	73.44977	0.505091	1.223526	16.59037	0.472495
5	8.108804	8.242553	85.87626	0.612062	0.821015	4.324289	0.123819
6	12.16974	11.25115	83.98257	1.070340	1.502983	2.120378	0.072581
7	19.12950	12.44947	83.63326	1.047837	1.761218	1.077236	0.030974
8	28.35546	14.20152	81.75136	1.045467	2.049998	0.929296	0.022352
9	42.68174	15.07286	80.99913	0.929838	2.118141	0.864371	0.015661
10	64.94228	15.51173	80.69655	0.837422	2.055960	0.884153	0.014186

Variance Decomposition of GDPGR:

Period	S.E.	LCI	LGINI	LFLT	LLIP	RQT	GDPGR
1	3.758345	1.214201	2.378168	4.778062	8.682902	6.573313	76.37335
2	4.126075	10.72153	3.939001	3.979118	11.37122	6.179787	63.80935
3	9.927627	2.347218	81.92946	0.919302	2.362416	1.115406	11.32620
4	11.45080	4.672483	79.58692	2.280185	3.381708	1.105740	8.972960
5	19.91584	5.629892	87.93988	1.433354	1.650196	0.378578	2.968102
6	25.28069	9.834509	83.43331	1.898914	2.426146	0.520418	1.886699
7	35.60995	12.17884	82.35576	1.492301	2.551409	0.470105	0.951591

8	48.98383	14.86245	79.84834	1.237982	2.609071	0.923612	0.518546
9	71.26702	15.93978	79.46174	0.939829	2.421219	0.984396	0.253043
10	108.9149	15.93242	80.12076	0.766602	2.076444	0.986824	0.116948

Cholesky Ordering: LCI LGINI LFLT LLIP RQT GDPGR

4. Discussion of Result

The Granger causality and the Variance decomposition tests unveil the claim that corruption is like cancer as it is found to significantly influence education (a proxy for financial literacy), income inequality, national income growth in the short run study but to a lesser extent income inequality, financial literacy, life insurance penetration , regulatory quality, and income growth in the long run. Regulations granger- predicts the poor level of life insurance. Likewise, VAR shows vividly the greatest source of influence against life insurance penetration in the medium to long-run as income inequality, and to lesser extent corruption which the Nigerian theory of corruption is premised of in Smith and Smith (2010) 'equality trap'. The short-run influence came from poor regulatory quality. The income inequality is attributable more to self, then to corruption and a lesser extent life insurance and financial literacy. In fact, the VAR result shows glaringly that income inequality crises permeates all other variables by about 85% through the short to long run forecast, an issue which the Nigerian State must urgently address. However, the study hypothesizes that the lack of insurance culture through high demand of life insurance influences the significant prevalence of corruption. It is evident this relationship is not clearly proven except in the very long run, and from the theoretical perspective. This may be so if demand for insurance in Nigeria is more connected to factors like religion and culture as found in related literature.

4.1 Recommendations

In the light of the findings of this study and extant literature on corruption and economic efficiency on one hand and utility of insurance as income uncertainty protection mechanism on the other, the study suggests insurance-based solution to drive economic and financial inclusion and reduction of petty corruption. As a first step, insurance companies must be developed with the concept of socio-economic institution with low probabilities of market failure from regulatory quality. Corporate governance of insurance companies should urgently establish who is a 'fit and proper person' to be the CEO and Board of Directors of insurance and pension companies. In addition stiffer penalties that are already put forward in Pension reform (2014) is suggested for insurance managers. In line with Dodd-Frank Act of the US Securities and Exchange Commission, insurance contract should be made to disclose all information at the point of purchase decisions and not to avoid claims payment on flimsy non-compliance by insured. Financial literacy and insurance education should be integrated to all tertiary level education to drive home the need for financial planning early in life. Income inequalities and poverty reduction should aggressively be addressed. A social insurance package must be designed at the state level for the poor through taxation. The Nigerian financial sector needs urgent reforms that engender financial inclusion and insurance culture to institutionally tackle corruption apart from the commendable legal and ethical war.

5. Conclusion

Income inequality regulatory quality and financial literacy was found to influence corruption to a good extent. The result is surprisingly not supportive of the economics of insurance that predicts that demand is influenced by income inequality and financial literacy in the immediate and short run, but it is highly supportive of theory in the long run for income inequality. Regulations had greater correlation to life insurance as a proxy for insurance culture. Since extant literature establishes that the same factor as this is found to influence corruption, it affirms

the existing understanding on corruption risk. In the same vein the conjecture that if these factors influence corruption and weaken demand of life insurance; corruption indirectly will negatively be related to its utility. The attempt of the study give an exploratory and empirical light to the use of corruption as an accumulation (Osoba, 1996) or saving function, or insurance function needs to be further explored in further research as this is not yet tested.

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