

# JOURNAL OF TAXATION AND ECONOMIC DEVELOPMENT

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## **COVID-19 CHARITABLE DONATIONS AND TAX SHIELD OF DONORS IN NIGERIA**

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### **ABSTRACT**

*This study aimed at investigating the extent to which covid-19 charitable donation affects tax shield of donors in Nigeria. The study adopted a survey research design, and the population of the study consisted of donors of the N500 billion covid-19 crisis intervention fund established by the Federal Government of Nigeria to contain the effect of corona virus pandemic as at 18<sup>th</sup> April, 2020. However, a sample of forty-six (46) donors/businesses was considered for this study. The data for the study were obtained from the Nairametrics Business News of 18<sup>th</sup> April, 2020. The data were analysed with mean, standard deviation, minimum and maximum values, and Ordinary Least Square (OLS) regression technique. Findings of the study showed that charitable donation made by Nigerians to combat covid-19 pandemic has a significant relationship with tax shield of the donors as such contribution has resulted in an average tax savings of N167.9 million and a maximum tax savings of N600 million. It was also gathered in this study that size moderates the association between covid-19 charitable donation and tax shield. Large companies tend to donate more to the covid-19 crisis intervention fund in a bid to reduce their higher tax burden. In view of the above, the following recommendations were made: an aggressive tax campaign should be made by the appropriate government agency to sensitize tax payers of the tax benefit of such donations so as to encourage more tax payers to contribute to the fund; donation of a capital nature should be considered as tax deductible; the Personal Income Tax Act should be reviewed to accommodate private individuals to make tax deductible donation to such a cause; and the provision of the Companies Income Tax Act, which states that donations should not exceed 10% of gross profit or income should equally be reviewed upward to encourage donors to contribute more to the fund to achieve the set target of N500 billion.*

**Keywords:** Covid-19, charitable donation, tax shield, donors, Nigeria

### **1. INTRODUCTION**

Taxes are compulsory charges levied by the government on the income, gain, profit, property and consumption of private individuals and corporate entities. They are statutory obligations of all individual adults and businesses in a country. It is provided in the 1999 Constitution of the Federal Republic of Nigeria that every individual adult is expected to pay a certain percentage of his or her income as tax and the Nigerian Companies and Allied Matters Act, Cap. C20 Laws of the Federation of Nigeria 2004

also provides that a registered company is statutorily required to pay 30% of its net profit as income tax. Hence income tax constitutes a significant cost to both private individuals and companies. In a bid to reduce the impact of tax on income and profit, tax shield becomes imperative. Ayorinde (2007) describes tax shield as a reduction in taxable income for individuals and corporations achieved through claiming allowable deductions such as charitable donations, mortgage interest, medical expenses, amortization, and depreciation. These deductions reduce the tax expense of the tax payer.

RBC Wealth Management (2018) affirmed that the profit motive of a business has often been perceived as representing a lack of concern for all other objectives of a business organisation. In this regard, businesses are realising that in order to stay profitable in a rapidly changing environment, they would have to become socially responsible and promote their public image. Therefore, beyond making profit for the shareholders, business enterprises should serve the interests of all other stakeholders through the concept of corporate social responsibility (CSR). Similarly, individuals with political motive tend to seek for means of promoting their image as good citizens in their political adventure. It has been argued by scholars and researchers that to reduce tax expense and enhance public image, charitable donation serves as a veritable tool. In view of the above, companies and individuals globally are using charitable donation for this purpose.

According to Greenberg (2015), the term **charitable donation** refers to any financial contribution made by an individual or a corporation to a government or an organization to further its cause. It should be noted that not all charitable contributions are cash donations. Individuals and corporations can also donate investment assets or goods and claim those donations against their tax liability. In 2012 in the United States of America, 24.6 percent of all donations were non-cash, according to the Tax Foundation (Freeland, Wilterdink & Williams, 2015).

However, to qualify for donation tax deduction, RBC Wealth Management (2018) claims that individuals and corporations must make the donation to qualified donee, and a qualified donee is generally the organization that can issue a receipt for the donation received. Such organization includes charitable organizations, foundations, and government.

Odubunmi (2018) asserted that donations are made to charitable causes either to minimize the tax expense of the donor, or more commonly to help establish the public perception that the donor is a good corporate citizen. Donations in support of causes, charities or designated funds for charitable purposes go a long way in building communities and supporting the less-privileged in the society thereby promoting the company's image. As noted by Ayorinde and Esuga (2020), a major incentive/motive which perhaps often drive corporate entities into charitable causes is the tax advantage such charitable donations confers on the donor company. In this regard, such donations for charitable causes whether in cash or in kind is monetised and becomes deductible to a

maximum of 10% gross profit of the company for that year of assessment from the income tax liability of such company, and the ultimate burden passed on to the government under sections 25 and 25A of the Companies Incomes Tax Act, Cap. C21, Laws of the Federation of Nigeria, 2004 (CITA).

Covid-19, which is an acronym for corona virus disease that is caused by the severe acute respiratory syndrome (SARS), has as at 14<sup>th</sup> of May 2020, claimed globally, the life of over 300000 people with about 4.5 million people infected. In Nigeria, a total of 4971 people have been infected with a death toll of 164 persons (*Nigeria Centre for Disease Control, 2020*). As a result of the outbreak of covid-19, there is a global consensus by well-meaning individuals and corporations to support governments and health agencies leading the response to the covid-19 pandemic.

Following the above, the Minister of Finance in Nigeria Mrs Zainb Ahmed announced the establishment of a N500 billion covid-19 crisis intervention fund to upgrade healthcare facilities and fund special public works programme to generate employment.

In view of the foregoing, private individuals and corporate bodies in Nigeria have donated cash and other materials such as building for isolation centers, medical supplies and equipment to the covid-19 relief effort. As at 18<sup>th</sup> April, 2020, various media reports show that a total sum of N25, 893, 792, 792 has been realized from contributions made by 108 donors. As noted by Ango and Yetunde (2020), there is no express provision presently in Nigeria that allows for deductions of donations by individuals and enterprises under the Personal Income Tax Act (PITA), except companies, as provided in the Companies Income Tax Act (CITA) 2004. Similarly, some of those donations made by individuals and companies for covid-19 such as buildings donated as isolation centres, are of capital nature, and as such are not qualify as deductible expenses. However, section 20 (1) of PITA, 2007 provides that expenses made by individuals for research purpose is tax deductible. In any case, this does not provide sufficient basis for deducting personal donations made to combat covid-19 in Nigeria.

Nevertheless, Section 25 of the Companies Income Tax Act (CITA) paragraph 35 to the Fifth Schedule of the Act specifically provides that donations to any public fund established or approved by the Federal or State government in aid or relief for any national disaster will be tax deductible. The donation must, however, be made only out of the profits of the company and should not be of a capital nature. Additionally, the amount to be deducted must not be greater than 10% of the total profits of the company (for that year) unless the President directs otherwise by an order in the Federal Gazette. Following the provisions of paragraph 35 to the Fifth Schedule of Section 25 of CITA, 2004, on deductible donations which states that “for the purpose of ascertaining the profits or loss of any company for any period from any source chargeable with tax under this Act, there shall be deducted the amount of any donation made for that period by that company to any fund, body or institution in Nigeria. The Minister of Finance in Nigeria, Mrs Zainab Ahmed announced that corporate entities and individuals that have contributed to the federal government's covid-19 pandemic relief fund are to be granted some tax reliefs (Ango & Yetunde, 2020; Udo, 2020).

It has also been argued that the financial muscles of the private individuals and the size of the firm moderate the link between charitable donation and tax savings (Brooks, 2007). It therefore becomes worrisome whether the donations made by these individuals and companies will in any way impact on their tax burden. Despite the significance of charitable donation for tax shield by taxpayers, it appears that most of the prior empirical studies that established a link between charitable donation and tax shield are of foreign origin and concentrated in advanced economies, majorly United Kingdom, United States, and Asia Countries, and as such, are alien to our environment. The few available studies in Nigeria seem to be inadequate in currency, scope and methodology. An attempt to fill this existing research gap is of course the motivation for this study. Following the above premise, the objective of this study therefore is to investigate the extent to which covid-19 charitable donation affects tax shield of donors in Nigeria.

## **2. LITERATURE REVIEW**

### **Tax Shield**

Ayorinde (2007) describe tax shield as a reduction in taxable income for an individual or corporation achieved through claiming allowable deductions such as mortgage interest, medical expenses, charitable donations, amortization, and depreciation. These deductions reduce a taxpayer's taxable income for a given year or defer income taxes into future years.

As noted by Ezeoha and Ogamba (2010) tax shield is a reduction in taxable income by taking allowable deductions and it is the deliberate use of taxable expenses to offset taxable income. The intent of a tax shield is to defer or eliminate a tax liability. This can lower the effective tax rate of a business or individual, which is especially important when their reported income is quite high. Examples of taxable expenses used as a tax shield are: paying out funds for charitable contributions, to charge off the contributions as a taxable expense; incurring debt, in order to charge off the related interest expense as a taxable expense; incurring medical expenses, in order to charge off the payments as a taxable expense; and acquiring fixed assets, in order to charge accelerated depreciation or amortization (in the case of intangible assets) as a taxable expense.

The term tax shield references a particular deduction's ability to shield portions of the taxpayer's income from taxation. According to Charities Aid Foundation (2016) tax shields vary from country to country, and their benefits depend on the taxpayer's overall tax rate and cash flows for the given tax year. For example, because interest payments on certain debts are a tax-deductible expense, taking on qualifying debts can act as tax shields. Tax-efficient investment strategies are cornerstones of investing for high net-worth individuals and corporations, whose annual tax bills can be very high (Yusuf & Abubakar, 2017). Kliestik and Michalkova (2018) posit that tax shield is an allowable deduction from taxable income that results in a reduction of taxes owed. Tax shields differ between countries and are based on what deductions are eligible versus ineligible. The value of these shields depends on the effective tax rate for the corporation or individual (being subject to a higher rate increases the value of the deductions).

The issue of tax shields is an increasingly important object of interest for both business managers and academics. Worldwide in recent years, the volume of leveraged buyouts and management buyouts (MBOs) has increased. In this case, debt is an important component of value.

Therefore, tax shields are divided into two main categories: interest and non-interest tax shields (Kliestik & Michalkova, 2018). The tax shield strategy can be used to increase the value of a business, since it reduces the tax liability that would otherwise reduce the value of the entity's assets. The effects of the tax shield should be used in all cash flow analyses, since the amount of cash paid in taxes is impacted. Tax shield strategies are available for both business and individual tax returns. The classic example of a tax shield strategy for an individual is to acquire a home with a mortgage. The interest expense associated with the mortgage is tax deductible, which is then offset against the taxable income of the person, resulting in a significant reduction in his or her tax liability.

Tax expenses generate tax savings (tax shields), which significantly affect business decision-making, especially investment decision-making and capital structure issues. The most important sources of tax savings are interest and non interest. Tax shields lower the overall amount of a company income tax (Inaya & Ekwueme, 2016).

Ezeoha and Ogamba (2010) confirm that tax shields lower the overall amount of taxes owed by an individual or business taxpayer. To collaborate the above, Aigbangbee and Balogun (2015) revealed that Italian 'tax shield' programme was reported to have generated revenue of about US\$ 80 billion in 2009, while a record US\$ 5 billion was collected from about 30,000 voluntary tax disclosures made under the United States' IRS offshore voluntary disclosure programme.

The process for calculating the impact of a tax shield is relatively straightforward. The tax shield's value is the amount of money a tax payer saves on taxes. An interest tax shield equals the cost of interest multiplied by the company's tax rate. The cost of interest appears elsewhere on the cash flow statement as a payment to the lender. However, this is the cost of doing business that the company would incur regardless of its tax implications. Some cash flow statements can show multiple tax shields, each based on a simple multiplication, which can be added together to determine the total tax shield value for the period of time that the statement covers. The value of a tax shield is calculated as the amount of the taxable expense, multiplied by the tax rate. Thus, if the tax rate is 21% and the business has N100,000 of donation, the tax shield value of the interest expense is N21,000.

According to Kliestik and Michalkova (2018) tax shields increase cash flow because they keep more money in a business. The cash flow statement, which is one of the financial statements that a business produces, lists expenses, including taxes paid on operating activities and investment activities. Tax shields directly reduce these amounts without affecting income (The issue of tax shields is an increasingly important object of interest for both business managers and academics. Worldwide in recent years, the

volume of leveraged buyouts and management buyouts (MBOs) has increased. In this case, debt is an important component of value. Tax expenses generate tax savings (tax shields), which significantly affect business decision-making, especially investment decision-making and capital structure issues. The most important sources of tax savings are interest and non-interest (Inaya & Ekwueme, 2016).

### **Covid-19 Charitable Donation**

The term **charitable donation** refers to any financial contribution made by an individual or corporation to a government or an organization to further its course (Greeberg, 2015). Diamantopoulos, Schlegelmilch and Love (1993) and Brooks (2007) are of the opinion that giving such as time, money, and volunteers are all forms of donations. Covid-19 charitable donation therefore, is the financial contribution made by individuals and corporate entities to contain the effect of corona virus pandemic. It is the amount of contribution made by donors to the N500 billion covid-19 crisis intervention fund established by the Federal Government of Nigeria. A corporation gives to charitable causes either to minimize its tax liability, or more commonly to help establish the public perception that the corporation is a good corporate citizen (Ayorinde & Esuga 2020). Donations generally are not allowed unless they are for the benefit of the employees or to the approved bodies. Donation to political parties is non allowable except if it can be proved that such is of great advantage to the business (RBC Wealth Management, 2018).

Charitable donations are deductible in determining taxable income (Feldstein & Taylor, 1976). The challenge is when an individual makes a donation to a charity, the exchange equation is relatively simple: The individual donates money, possessions, or his or her labour, and receives gratitude (perhaps implied) from the charity as well as a self-congratulatory pat on the back. Corporations also make donations to charities, but the exchange equation is more complicated (Dean, 2004). Feldstein and Taylor, (1976) further explained that when corporate organisations make donations, it means assets have been given away and reduces the taxable income by the same amount of donation. This is why government being one of the key stakeholders needs tax information from every organization to ensure they are giving donations within the legal framework. A responsible corporate organization is concerned about the need of the stakeholders such as management, staff, government, public policy makers, society and the communities where it operate from (Uwuigbe, 2011).

Section 25 of CITA provides the conditions or circumstances under which donations made by companies shall be tax deductible as follows: the donation is made out of the profits of the company and is not expenditure of a capital nature; the deduction shall not exceed 10% of the total profits of that company for the year of assessment in which the donation is made ;the public fund, statutory body/institution, ecclesiastical, charitable, educational or scientific institution receiving the donation must be established/incorporated in Nigeria and specified in the Fifth Schedule to CITA (the Minister of Finance may by order amend the Fifth Schedule from time to time);donations made by a company should not include any payments made by the

company for valuable consideration; donations may be tax deductible notwithstanding the fact that such donation is revenue or capital in nature, where such donations are made to tertiary institutions and the deductions do not exceed an amount which is equal to 15% of the total profits or 25% of the tax payable in the year of the donation whichever is higher (Odubunmi, 2018).

According to Oyedele (2012) the Minister of Finance recently modified the Fifth Schedule to the Companies Income Tax Act effective from 12 December 2011. In addition to the existing bodies eligible for tax deductible charitable donations listed in the Act, more institutions, bodies or funds engaged in the following broad categories of activities are to enjoy tax deductible donations provided such organisations are not set up for the purpose of profits or gains to the individual members of the society, association or person. Namely, promotion or defense of human rights; women empowerment and development; re-orientation, rehabilitation, welfare support service for orphans, widows, physically challenged, refugees and all categories of persons that may require social or economic rehabilitation and transformation; youth empowerment and development; leadership and resource development; promotion of national unity and patriotism; promotion of social and economic development; accident prevention and control activities; information system development and awareness; creation of awareness for transparency in governance and electoral processes; promotion of national unity and patriotism; museum development and promotion of sports, arts and culture; rendering assistance in the provision of safe water, electricity, infrastructure and agricultural development; any professional body established under an Act of the National Assembly for the regulation and practice of the profession. The amendment is in line with global best practices and the recently launched National Tax Policy of the government in that tax waivers/incentives are broad based rather than for selected organisations.

Mohr (2020) noted that any cash donation over a certain amount requires written confirmation of the gift from the organization. The tax revenue authority requires that donors keep canceled cheques or other records of the gift for smaller donations. However, getting a receipt from the charity every time donation is made strengthens the donor tax records if not audited. If large donation is kept and the donor do not have or cannot find the receipt, it will be disallowed on audit. It is therefore important to keep records at the beginning of each year and file all donation receipts in the same place (Brooks, 2007).

### **Empirical Review**

Houqe, Ziji, Karim, St. George (2019) examine whether corporate donations, a form of CSR activity, have a positive impact on firm value. The impact of donations on value may suffer from agency problems or poor quality in the choice of donee. However, we expect that, on balance, donations would have a positive impact on value. We use a sample of 52,199 firm-year observations from 42 countries for the period 1998 to 2014 and conduct our tests using the Collins et al. (1999) adaptation of the Ohlson (1995) model. Our evidence supports our expectation that corporate donations have a positive

impact on firm value. They also find that CSR performance, and the country level variables for culture and corruption, moderate the contribution to value. The results are robust to several sensitivity tests including an alternative measure of donations, additional country-level control variables, and variation in the study sample.

Yusuf and Abubakar (2017) examined tax incentives and donations in a causal relationship. The population of the study includes 14 of a total of 15 money deposit banks listed on the Nigerian Stock Exchange and covered the period 2011-2015. Using the random effects regression models, the study found that current year and one year lag tax incentives have significant impact on donations made by quoted banks in Nigeria. However, while profitability impacts on donations with one year lag tax incentives, this is not the case with current year tax incentives. Indicating that last year tax incentives and current year profitability contributes significantly in determining corporate donations.

Inaya and Ekwueme (2016) investigated the relationship between corporate borrowing and tax shield among listed companies in Nigeria. Five specific variables namely tangibility, size, total debts, short-term debt and long-term debt as independent variables for thirty companies were used in order to measure their effect on firm's tax shield. The data for the study was analysed using the Pooled, Random and Fixed Effect Regression for the period 2010-2014. The finding suggests that tangibility is positively related to tax shield while firm size is negatively correlated with tax shield. Furthermore, the result shows that there is a significant relationship between interest tax shield, long term, short term and total borrowings of the firms studied. Based on the above findings, we recommend among others, that equity capital financing should be encouraged among listed companies since this could be used as basis for further borrowing. In addition, companies in Nigeria should utilize a mixture of short and long-term debts in order to have the most optimal tax shield for their debts.

A study, carried out by Charities Aid Foundation (2016), looks at 26 countries and investigates the way tax incentives are offered around the world. It showed that people are more likely to have donated to charity in the last month if they live in a country that offers tax relief. The study shows that in France, individuals are able to claim a 75% credit against tax liability on donations totalling up to €21 (£408). Incentives above the €21 threshold are calculated at 66% of the donation but limited at 20% of total taxable income. Also in the UK the study revealed that there used to be a high minimum eligibility criterion, Gift Aid was only eligible on donations of £600 or more. It was then lowered to £250 before being wiped out in 2000 as part of a measure to boost people giving to charity, with the amount of money being given via Gift Aid now increasing by roughly 3% per year. It concludes that individual donations and corporate donations are treated differently; with individual relief coming in the form of grossed-up donations and corporate reliefs coming in the form of tax deduction. As a result, individual donors have their donations topped up by 25% (with higher rate tax payers receiving a 20 or 25% deduction on top of this), meaning that the relief is passed on to the civil society organisation (CSO) rather than back to the donor. Companies, on the other hand, receive the full benefit of the relief.

Freeland, Wilterdink and Williams (2015) investigated the relationship between charitable giving and state taxes by asking the questions “how much charitable giving exists? Where does it come from and where does it go? The population for the study consisted of 1,507,231 tax-exempt organizations operating in the United States as provided by the National Center for Charitable Statistics. This includes a mixture of public charities, private foundations, non-profit organizations and others. In gathering the data for this study, the analysis focused on collecting data on state economic growth as well as accounting for varying populations and incomes in states by tracking adjusted gross income (AGI) and number of claimants of the charitable deduction in the state. The findings revealed that Americans have traditionally given about 2 percent of Gross Domestic Product (GDP) to charity over the past 40 years and this has reduced tax liabilities of donors. From 1997 to 2012, charitable giving in the United States grew by 43.03 percent after adjusting for inflation, according to Internal Revenue Service (IRS) statistics of income (SOI) tables. In 2014, total charitable giving was \$358.38 billion according to estimates by Giving USA, or about 2.1 percent of total GDP. While these figures describe charitable giving in the United States as a whole, giving rates and growth in charitable giving vary widely by State.

Freeland, et al (2015b) did another study on the effect of total tax burden on total state income and found that an increase in tax burden of roughly 1 percentage point of total state income results in roughly a 0.09 percentage point decrease in measured charitable donations as a percent of income. As noted earlier in the paper, charitable giving as a percent of annual gross income (AGI) ranges from roughly 5.2 percent down to 1.15 percent across states and years. As such, total tax burden appears to have a large effect on charitable giving. The opposite of this figure is also true—a decrease in taxes is associated with an increase in charitable giving. This is statistically significant at the 0.000 level, which is a strong statistical relationship.

Dean (2004) study investigated the effects of type of donation (conditional or not conditional upon corporate revenue) and reputation of the firm making the donation (firms described as scrupulous, average, or irresponsible in the discharge of their social responsibility) on consumer regard for the firm; perceived mercenary intent of the firm; and whether the social performance of the company is consistent with "good" management. Consumer responses were predicted based on the contrast effect and attribution theory. Results suggest that irresponsible firms increased their favor with consumers by pursuing either type of donation. The average firm enhanced its image by pursuing an unconditional donation, but a conditional donation did not damage firm image. Perception of the scrupulous firm was little changed after unconditional donation, but a scrupulous firm suffered a loss of favor by pursuing CRM. It is concluded that the average firm does not risk a loss of public goodwill when using CRM.

Milner (1996) study was undertaken to begin an initial investigation of determinants of corporate charitable giving. Factors analysed include tax burden of the donor, donor corporation demographics, forms of donations utilized, and corporate preferences with regard to the beneficiaries of their giving. Results indicate that tax relief by the donor,

age of the non-profit and age of the corporation as well as relationships between owners/managers and workers with the non-profit are positively related to donations.

### **Theoretical Framework**

This study is anchored on the profit maximization theory as proposed by Fry, Keim, and Meiners in 1982. They reported that profit is the prime impetus for the contributions of most top firms, with corporate donation serving as a marketing tool in which sales are increased through enhanced corporate image and visibility. From a profit-maximizing standpoint, why would a firm contribute to charity? At first glance, contributions represent another expense. They are treated for tax purposes the same as any expense, where the cost of a dollar of donation or contribution is still the complement of the marginal tax rate. If profit-maximizing firms make donations, it must be the case that managers and owners believe that the benefits from such donation outweigh the costs or that donations are in the firm's long-run self-interest. An economist's profit-maximization equation for a firm in any given time period may be expressed as a function of the firm's costs (expenses), the price the firm charges for its product (price X quantity sold = sales), the cost of donations, and potential benefits and costs of the actual donations (offsets). This type of profit-maximization model may explain the motivation of corporate executives in allowing various types of corporate donations. If contributions affect both the expense and sales of the firm, then expenditures, which affect either, or both, input or output sales, may increase firm profits.

From the standpoint of profit-maximization theory, corporate executives choose to make donations only if they either increase sales or lower expenses or also promote their public image and goodwill.

### **3. METHODOLOGY**

In a bid to contain the effect of covid-19 pandemic in Nigeria, the Federal Government established N500 billion covid-19 crisis intervention fund. As at 18<sup>th</sup> April, 2020 when data were collected for this research work, one hundred and seven (107) donors have contributed to the fund. Therefore the population of the study consists of the one hundred and seven (107) donors of the N500 billion covid-19 crisis intervention fund. Since the donors are businesses of different sizes and sectors of the economy, this study only focused on the banking and manufacturing sectors' donors with applicable tax rate of 30% as shown in appendix 1. A total of forty-six (46) banks and manufacturing firms' donors was considered for this study, and a survey research design was adopted in obtaining data from the Nairametrics Business News of 18<sup>th</sup> April, 2020.

In this study, covid-19 charitable donation was defined as the amount of contribution made by donors to the covid-19 crisis intervention fund. For example, United Bank of Africa charitable donation is N1 billion while Dangote Industries Limited is N2 billion as shown in appendix 1. Tax shield on the other hand was measured as the product of charitable donation made by the donor and tax rate given at 30%. For instance, tax shield of United Bank of Africa is N1 billion x 30% = N300 million. Size, which moderates the relationship between covid-19 charitable donation and tax shield in this study, was

considered as a dummy variable. If the covid-19 charitable donation made is from N1 billion and above, it takes the value of 1, otherwise 0.

The data generated for this study were analysed with both descriptive and inferential statistics using the arithmetic mean, standard deviation, minimum and maximum values, and the Ordinary Least Square (OLS) Regression technique. These were computed with the aid of the Statistical Package for Social Sciences (SPSS) version 23.

The model specification for this study is given in functional form as:

$$COVDON = f(TAS, SIZE) \text{----- (i)}$$

In econometric form, the model becomes:

$$COVDON_i = \alpha_0 + \alpha_1 TAS_i + \alpha_2 SIZE_i + \epsilon_i \text{----- (ii)}$$

Where:

- COVDON = Covid-19 Donations (amount donated by different corporate bodies)
- TAS = Tax Savings (Tax rate x amount donated)
- SIZE = Size of the Donation (Dummy, if donation is above N1b it takes the value of 1, otherwise zero)
- $\alpha_0$  = Regression Constant
- $\alpha_1$  = Regression Coefficient
- $\epsilon_i$  = Stochastic term

In this study, the prior expectation is that increase in covid-19 charitable donations in Nigeria will bring about increase in tax shield of donors. In summary, it is expected that  $\hat{\alpha}_1$  and  $\hat{\alpha}_2 > 0$ .

#### 4. RESULTS AND DISCUSSING OF FINDINGS

The empirical analysis in this study involves both the descriptive analysis and test of hypothesis.

##### Descriptive Analysis

The descriptive statistics shows the description of the data in the study. The descriptive statistics describes the mean, minimum, maximum, and standard deviation of the distribution. Table 1 shows the descriptive statistics of the variables for in the study.

**Table 1: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
DON	46	1.00E8	2.00E9	5.5978E8	5.11818E8
TAS	46	3.00E7	6.00E8	1.6793E8	1.53545E8
SIZE	46	.00	1.00	.3696	.48802
Valid N (listwise)	46				

The descriptive statistics of the variables in the model are displayed in Table 1 above. The table shows that the minimum covid-19 contribution made by donors is N100million while the maximum is N2billion. The average charitable contribution made during the period is N559.8million. The value of the standard deviation, N511.8million is less than the mean value. This indicates that the mean is a good representation of the donations made. More so, the minimum tax savings made by donors is N30million while the maximum is N600million. The average tax savings during the period is N167.9million. The value of the standard deviation, N153.5million is less than the mean value. This also shows that the mean is a good representation of the tax savings made.

**Test of Hypothesis**

In this study, the following null hypothesis was raised.

**Ho:** There is no significant relationship between covid-19 charitable donation and tax shield of donors in Nigeria.

To test the stated hypothesis, data collected on covid-19 donation were regressed against tax savings and size of the contributions made by donors and the results obtained are presented in the Table 2 below.

**Table 2: Relationship between Covid-19 Charitable Donation and Tax Shield**

R	R Square	Adjusted R Square	F	Sig.	Durbin-Watson	VIF
0.906	0.820	0.812	98.049	0.000	1.573	3.962

As shown in Table 2 above, a percentage increase in donation for covid-19 in Nigeria will lead to about 11.6% increase in tax savings of donors. The coefficient of determination (R<sup>2</sup>) of 0.820 suggests that about 82% of change in tax savings of the donors is associated with the covid-19 charitable donations, which implies that the regression model is nicely fitted. Above all, the probability value of the multiple regression as displayed by the f-ratio (0.000), which is less than 0.05 level of significance, suggests that a significant relationship exist between covid-19 charitable donation and tax shield of donors in Nigeria. Hence the null hypothesis is rejected.

Table 2 also shows Durbin-Watson value of 1.573, which is within the acceptable region of 1.5-2.5. This suggests that there was no problem of serial correlation in the model. Similarly, the value for the Vector Inflation Factor (VIF) of 3.962, which is less than 10.0, also indicate that the model had no problem of multicollinearity.

From the analysis in this study, it is found that the average contribution for covid-19 made by the donors is N559.8million, and as such an average tax savings of N167.9million was made. The result of the analysis also shows that covid-19 charitable donation has a positive significant relationship with tax shield of donors in Nigeria. These findings are in agreement with prior studies such as Odubunmi (2018),

Yusuf and Abubakar (2017), Charities Aid Foundation (2016), Freeland, Wilterdink, and Williams (2015) and Milner (1996).

Odubunmi (2018) asserted that donations are made to charitable causes either to minimize the tax expense of the donor, or more commonly to help establish the public perception that the donor is a good corporate citizen.

Yusuf and Abubakar (2017), concludes that last year tax incentives and current year profitability contributes significantly in determining corporate donations. Charities Aid Foundation (2016) shows that people are more likely to have donated to charity if they live in a country that offers tax relief. The study shows that in France, individuals are able to claim a 75% credit against tax liability on donations totalling up to £408.

Freeland, Wilterdink, and Williams (2015) in their study found that Americans have traditionally given about 2 percent of Gross Domestic Product (GDP) to charity over the past 40 years and this has reduced tax liabilities of donors. Milner (1996) indicate that tax relief by the donor, age of the non-profit and age of the corporation as well as relationships between owners/managers and workers with the non-profit are positively related to donations.

## **5. CONCLUSION AND RECOMMENDATIONS**

The fight against covid-19 pandemic in Nigeria is a fight for all, hence well-meaning Nigerians have contributed to the N500 billion covid-19 crisis intervention fund established by the Federal Government of Nigeria to upgrade healthcare facilities and fund special public works programme to generate employment. The income tax deduction for charitable donation provides a substantial incentive to give by reducing the economic cost of making a donation.

Section 25 of the Companies Income Tax Act (CITA) paragraph 35 to the Fifth Schedule of the Act specifically provides that donations to any public fund established or approved by the Federal or State government in aid or relief for any national disaster will be tax deductible. In line with this provision of the tax law, we investigated in this study the extent to which covid-19 charitable donation influence tax shield of the donors in Nigeria. Our findings show that charitable donation made by Nigerians to combat covid-19 pandemic has a significant relationship with tax shield of the donors as such contribution has resulted in an average tax savings of N167.9million and a maximum tax savings of N600 million. It was also gathered in this study that size moderates the association between charitable donation and tax shield. Large companies tend to donate more to the covid-19 crisis intervention fund in a bid to reduce their higher tax burden.

In view of the above, the following recommendations were made.

- (i) To encourage more people to contribute to the fund, an aggressive tax campaign should be made by the appropriate government agency to sensitize tax payers of the tax benefit of such donations.
- (ii) Donation of a capital nature should be considered as tax deductible.

- (iii) The Personal Income Tax Act should be reviewed to accommodate private individuals to make tax deductible donation to such a cause.
- (iv) The provision of the Companies Income Tax Act, which states that donations should not exceed 10% of gross profit or income should equally be reviewed to encourage donors to contribute more to the fund to achieve the set target of N500 billion.

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## Appendix 1

### LIST OF SOME DONORS TO COVID-19 CRISIS INTERVENTION FUND

1	CENTRAL BANK OF NIGERIA	CENTRAL BANK OF NIGERIA	2,000,000,000.00
2	ALIKO DANGOTE	DANGOTE INDUSTRIES LIMITED	2,000,000,000.00
3	FLOOD RELIEF FUND	FLOOD RELIEF FUND	1,500,000,000.00
4	ABDULSAMAD RABIU	BUA SUGAR REFINERY LIMITED	1,000,000,000.00
5	SEGUN AGABJE	GUARANTY TRUST BANK	1,000,000,000.00
6	TONY ELUMELU	UNITED BANK OF AFRICA	1,000,000,000.00
7	OBA OTEDEKO	FIRST BANK OF NIGERIA	1,000,000,000.00
8	JIM OVIA	ZENITH BANK	1,000,000,000.00
9	MODUPE & FOLORUNSHO	FAMFA OIL LIMITED	1,000,000,000.00
	ALAKIJA		
10	NDIC	NIGERIA DEPOSIT INSURANCE CORPORATION	1,000,000,000.00
11	HERBERT WIGWE	ACCESS BANK PLC	1,000,000,000.00
12	MIKE ADENUGA	GLOBACOM	1,000,000,000.00
13	FEMI OTEDOLA	AMPERION POWER DISTRIBUTION LTD	1,000,000,000.00
14	RAJ GUPTA	AFRICAN STEEL MILLS NIG. LIMITED	1,000,000,000.00
15	MTN NIGERIA PLC	MTN NIGERIA PLC	1,000,000,000.00
16	JOHN COUMANTATOUS	FLOUR MILLS OF NIG LTD	1,000,000,000.00
17	DEJI ADELEKE	PACIFIC HOLDING LTD	500,000,000.00
18	FRIESLAND CAMPINA WAMCO	FRIESLAND CAMPINA WAMCO	500,000,000.00
19	BANK OF INDUSTRY	BANK OF INDUSTRY	500,000,000.00
20	TOLARAM AFRICA ENTERPRISE LTD	TOLARAM AFRICA ENTERPRISE LTD	500,000,000.00
21	RAHUL SAVARA	WACOT RICE LTD	500,000,000.00
22	UNION BANK PLC	UNION BANK PLC	250,000,000.00
23	STERLING BANK PLC	STERLING BANK PLC	250,000,000.00
24	STANDARD CHARTERED BANK	STANDARD CHARTERED BANK	250,000,000.00
25	STANBIC IBTC	STANBIC IBTC	250,000,000.00
26	CITIBANK NIGERIA LTD	CITIBANK NIGERIA LTD	250,000,000.00
27	FCMB	FCMB	250,000,000.00
28	FIDELITY BANK	FIDELITY BANK	250,000,000.00
29	ECOBANK PLC	ECOBANK PLC	250,000,000.00
30	AFRICA FINANCE CORPORATION	AFRICA FINANCE CORPORATION	250,000,000.00
31	MULTICHOICE NIGERIA LIMITED	MULTICHOICE NIGERIA LIMITED	200,000,000.00
32	APM TERMINALS APAPA LIMITED	APM TERMINALS APAPA LIMITED	150,000,000.00
33	FSDH	FSDH	100,000,000.00
34	FBN MERCHANT BANK	FBN MERCHANT BANK	100,000,000.00
35	RAND MERCHANT BANK	RAND MERCHANT BANK	100,000,000.00
36	CORONATION MERCHANT BANK	CORONATION MERCHANT BANK	100,000,000.00
37	SUNTRUST BANK	SUNTRUST BANK	100,000,000.00
38	PROVIDUS BANK	PROVIDUS BANK	100,000,000.00
39	WEMA BANK	WEMA BANK	100,000,000.00
40	UNITY BANK	UNITY BANK	100,000,000.00
41	HERITAGE BANK	HERITAGE BANK	100,000,000.00
42	NOVA MERCHANT BANK	NOVA MERCHANT BANK	100,000,000.00
43	POLARIS BANK	POLARIS BANK	100,000,000.00
44	KEYSTONE BANK	KEYSTONE BANK	100,000,000.00
45	KC GAMING NETWORKS LTD	KC GAMING NETWORKS LTD	100,000,000.00
46	PORTS AND TERMINAL MULTI SERV LTD	PORTS AND TERMINAL MULTI SERV LTD	100,000,000.00

## Appendix II

### REGRESSION

```

/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT TAS
/METHOD=ENTER DON SIZE
/RESIDUALS DURBIN.
    
```

### Regression

[DataSet0]

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
DON	46	1.00E8	2.00E9	5.5978E8	5.11818E8
TAS	46	3.00E7	6.00E8	1.6793E8	1.53545E8
SIZE	46	.00	1.00	.3696	.48802
Valid N (listwise)	46				

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	SIZE, DON <sup>a</sup>		Enter

a. All requested variables entered.

b. Dependent Variable: TAS

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.906 <sup>a</sup>	.820	.812	6.66125E7	1.573

a. Predictors: (Constant), SIZE, DON

b. Dependent Variable: TAS

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.701E17	2	4.351E17	98.049	.000 <sup>a</sup>
	Residual	1.908E17	43	4.437E15		
	Total	1.061E18	45			

a. Predictors: (Constant), SIZE, DON

b. Dependent Variable: TAS

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.969E7	1.538E7		2.580	.013		
	DON	.116	.042	.352	2.732	.009	.252	3.962
	SIZE	1.838E8	4.050E7	.584	4.538	.000	.252	3.962

a. Dependent Variable: TAS

**Collinearity Diagnostics<sup>a</sup>**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	DON	SIZE
1	1	2.518	1.000	.05	.02	.02
	2	.415	2.463	.65	.01	.11
	3	.067	6.135	.30	.97	.86

a. Dependent Variable: TAS

## **DETERMINANTS OF TAX COLLECTION BY LOCAL GOVERNMENTS: EMPIRICAL EVIDENCE FROM KWARA STATE**

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### **ABSTRACT**

*Local governments in Nigeria depend so much on monthly statutory allocations from the federation account. The allocations have not only been insufficient in meeting the financial needs of local governments but are also characterised by uncertainties and volatilities. Debt profiles of local governments have mounted as a result. Looking inwards to taxation and related internal revenue sources seem the best sustainable resort to avoid fiscal sustainability crisis. This study examined the determinants of revenue collection at the local government level in Kwara State, Nigeria. The study specifies and estimates a panel data econometric model using data set for the sixteen (16) local governments (LGs) of the State for the period 2009-2016. A set of three panel data models were estimated using Generalized Least Square (GLS) method. The results show that population density, a proxy for tax base and overhead expenditure, a proxy for fiscal needs/efforts are the most consistent significant determinants of tax and non-tax revenue generation in the local governments. The study recommends that LGs should strive to provide social amenities to attract more people and businesses (tax base) to their jurisdictions and intensify tax efforts to improve internally generated revenue.*

**Keywords:** Kwara State, Local Governments, Tax, Nigeria

### **1. INTRODUCTION**

The flow of statutory allocation from the federation account to sub-national governments, especially local governments has been characterised by uncertainties and volatilities. Some of the recent episodes occurred in 2015 and 2016 when Nigeria's economy slides into recession. Even when the flow of statutory allocation is stable, in most cases, the funds are inadequate to meet the financial needs of the local governments. The situation in local governments deteriorated in recent times that most of them only struggled to pay staff salaries. Provision of basic amenities by LGs in many states, including Kwara state had to be put on hold. Public debt profiles have mounted as a result, as well as pressure on the local government councils by citizens to provide basic social services. Thus, the need to raise revenue from alternative sources, particularly, internal and independent sources has been the front burner of national discourse on Nigeria fiscal federalism. Taxation has become one of the most sustainable alternatives. However, in the fiscal federal set-up of Nigeria, as provided in the 1999 Constitution and subsequent amendments, LGs are accorded the least taxing powers. The taxes they administer are low revenue yielding ones compared to those of States and federal government (Iniudu, 1999).

The skewed assignment of fiscal responsibilities, though, premised largely on efficiency principle of fiscal federalism, has made local governments almost totally dependent on federal transfers to fund their activities. The global picture of local government finances from the database of the Central Bank of Nigeria (CBN) shows that federal transfers account for nearly 98 percent of total revenue of LGs in the country (See Table 1). At individual LG levels, revenue generation particularly tax collections differ from local government to local government within a state and across states in the country. Some LGs are doing well, while some are not. The reasons for the differences in revenue performance remains largely unknown from empirical studies on Nigeria. While studies on determinants of tax collections on other countries abound, there appears to be a knowledge gap with respect to the determinants of tax revenue at local government level in Nigeria. Recent studies such as Eiya and America (2018) and Ohiokha and Ohiokha (2018) focus on the effects of some macroeconomic variables on tax revenue at the national level. Others studies such as Gurama and Mansor (2015) looked at the challenges of taxation. Lack of long time series data is partly responsible for the dearth of empirical studies focusing on LGs.

The current study partly fills this gap by looking at the determinants of tax revenue performance at LG level in Kwara state, broadly, the effects on tax revenue of economic variables. The study (i) analysed the revenue performance of the local governments in the State, and (ii) examined how the LGs' tax and non-tax revenues respond to changes in economic variables—tax base, fiscal needs/efforts and flow of federal transfers/fiscal dependence. The study provided some useful empirical evidence about revenue generation by LGs in Nigeria. The findings also provided useful policy guides for designing revenue generation strategies at local governments level.

The paper is divided into six sections. This section is the introduction. The next section, presents an overview of revenue performance of LGs in Kwara State. Section three contains review of literature. The fourth section elucidates the methodology, while the fifth presents the results and discussion, including those of preliminary data analyses. Section six concludes with some recommendations.

## **2. OVERVIEW OF REVENUE PERFORMANCE OF LGs IN KWARA STATE**

The local governments of Kwara State like other LGs in the federation have very limited taxing powers, hence the contribution of taxes to internally generated revenue (IGR) and aggregate revenue is very small. Table 1 shows the total IGR performance of the sixteen (16) LGs of Kwara, while Table 2 shows the percentage distribution of the IGR, and aggregate revenue of the LGs in comparison with all the LGs in the federation.

Table 1 shows that tax collections by the local governments in the State are unstable and probably sensitive to vagaries of macroeconomic dynamics. For instance, total sum of taxes collected by the LGs stood at N 31.59 million in 2014. This figure declined to N9.78 million in 2015, but rose to N11.99 million in 2016. Meanwhile, looking at the composition, the share of taxes in IGR of the local governments presented in Table 2 was low. It ranges between 3.83 percent and 11.05 percent during the period under review.

Non-tax revenue comprising of rates, licences, fines and fees, and earnings and sales; interest and dividends, and others overwhelmingly dominated the revenue profile of the LGs in the State. Non-tax revenue jointly accounted for between 89 and 96 percent of the internal revenue generated by the LGs.

In comparison to the aggregate performance of all LGs in the federation, the contribution of IGR of LGs in Kwara State to total revenue is fairly similar to the figure for all LGs in Nigeria, as shown in Table 2. The share of IGR of all LGs in the federation to aggregate revenue ranges between 1.61 percent and 2.83 percent, while that of LGs in Kwara state ranges between 1.44 percent and 2.80 percent. This implies that the LGs depend on federal allocations for over 97 percent of their revenue. The similarity between the composition of revenue of LGs of Kwara State and that all the LGs of the federation stresses the fact that the situation in Kwara could effectively represent the global picture of LGs in the federation. The main issues of daunting concern in LGs public finances revolve around instability and very low share of taxes in internal revenue, and overall IGR in the aggregate revenue of LGs in the country. Addressing these issues particularly of the poor performance of IGR is germane to the sustainability of local governments as a third tier of government in Nigeria.

**Table 1: Revenue Performance of the Sixteen (16) Local Governments of Kwara State (in Million N)**

Revenue Items	2009	2010	2011	2012	2013	2014	2015	2016
Taxes	24.75	25.18	32.14	25.75	26.70	31.59	9.78	11.99
Rates	8.84	35.09	20.40	5.90	2.65	-	-	-
Licences, Fines & Fees	97.72	108.52	85.50	83.83	78.62	56.71	52.98	154.74
Earning & sales	98.69	106.06	117.33	117.51	82.26	134.77	112.12	99.14
Rent on Govt. property	17.77	13.88	15.26	10.24	28.23	23.61	17.60	31.22
Interest & Dividends	2.58	0.11	0.26	0.96	0.84	4.01	0.00	0.42
Others	58.54	22.63	62.87	44.62	22.26	3.57	40.95	15.77
<b>Internal Revenue (IGR)</b>	<b>308.87</b>	<b>311.46</b>	<b>333.76</b>	<b>288.80</b>	<b>241.55</b>	<b>254.27</b>	<b>233.43</b>	<b>313.27</b>
Taxes	24.75	25.18	32.14	25.75	26.70	31.59	9.78	11.99
Non-Tax Revenue	284.12	286.28	301.62	263.05	214.85	222.67	223.65	301.28
<b>Federal Transfers</b>	<b>13,241.66</b>	<b>10,754.77</b>	<b>13,093.50</b>	<b>14,106.18</b>	<b>14,817.64</b>	<b>12,902.94</b>	<b>9,585.91</b>	<b>21,502.14</b>
<b>Total Revenue (Recurrent)</b>	<b>13,550.53</b>	<b>11,066.23</b>	<b>13,427.26</b>	<b>14,394.97</b>	<b>15,059.19</b>	<b>13,157.21</b>	<b>9,819.34</b>	<b>21,815.41</b>
External & Internal Loans	-	76.89	-	-	-	237.31	-	-
<b>Total Revenue*</b>	<b>13,550.53</b>	<b>11,143.12</b>	<b>13,427.26</b>	<b>14,394.97</b>	<b>15,059.19</b>	<b>13,394.52</b>	<b>9,819.34</b>	<b>21,815.41</b>

**Sources: Compiled from Annual Reports of Auditor General for Local Government, Kwara State**

**Table 2: Analyses of Revenue of the Local Governments of Kwara State compared with All Local Governments in Nigeria**

Revenue Items	2009	2010	2011	2012	2013	2014	2015	2016
<b>Percentage Distribution of IGR of LGAs in Kwara State</b>								
Taxes	8.01%	8.08%	9.63%	8.92%	11.05%	12.43%	4.19%	3.83%
Rates	2.86%	11.27%	6.11%	2.04%	1.10%	0.00%	0.00%	0.00%
Licences, Fines & Fees	31.64%	34.84%	25.62%	29.03%	32.55%	22.30%	22.70%	49.40%
Earning & sales	31.95%	34.05%	35.15%	40.69%	34.05%	53.00%	48.03%	31.65%
Rent on Govt. property	5.75%	4.45%	4.57%	3.55%	11.69%	9.28%	7.54%	9.96%
Interest & Dividends	0.83%	0.04%	0.08%	0.33%	0.35%	1.58%	0.00%	0.13%
Others	18.95%	7.27%	18.84%	15.45%	9.22%	1.41%	17.54%	5.03%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
<b>Tax and Non-Tax Revenue of LGs in Kwara State (as % Share of Aggregate Revenue)</b>								
Taxes	0.18%	0.23%	0.24%	0.18%	0.18%	0.24%	0.10%	0.05%
Non-Tax Revenue	2.10%	2.57%	2.25%	1.83%	1.43%	1.66%	2.28%	1.38%
<b>Internal Revenue (IGR)</b>	<b>2.28%</b>	<b>2.80%</b>	<b>2.49%</b>	<b>2.01%</b>	<b>1.60%</b>	<b>1.90%</b>	<b>2.38%</b>	<b>1.44%</b>
<b>Federal Transfers</b>	<b>97.72%</b>	<b>96.51%</b>	<b>97.51%</b>	<b>97.99%</b>	<b>98.40%</b>	<b>96.33%</b>	<b>97.62%</b>	<b>98.56%</b>
<b>External &amp; Internal Loans</b>	<b>0.00%</b>	<b>0.69%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>1.77%</b>	<b>0.00%</b>	<b>0.00%</b>
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
<b>All LGAs Revenue (as % Share of Total Revenue)</b>								
Internal Revenue (IGR)	2.42%	2.11%	1.92%	1.61%	1.61%	2.26%	1.92%	2.83%
<b>Federal Transfers</b>	<b>97.01%</b>	<b>97.63%</b>	<b>97.67%</b>	<b>98.13%</b>	<b>97.89%</b>	<b>97.54%</b>	<b>97.63%</b>	<b>96.59%</b>
<b>External &amp; Internal Loans</b>	0.56%	0.26%	0.41%	0.26%	0.50%	0.21%	0.45%	0.58%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

**Sources:** Computed from Annual Reports of Auditor General for Local Government, Kwara State for various years, and CBN Statistical Bulletin, 2016 and 2017

### 3. LITERATURE REVIEW

Literature on determinants of tax revenue collections highlighted some factors including economic, political and institutional factors. The economic factors include tax base of the government, usually measured by size of per capita income or population growth; efforts and capacity to collect such taxes, nature of economic activities, and macroeconomic dynamics. These do have direct impact on tax revenue (Karran, 1985). In India for example, increase in per capita income had a direct positive impact on tax revenue in some, but not in all states, while the effect of population growth on tax revenue in Nigeria was found to be insignificant. The later findings could be attributed to the social and economic characteristics of the population. Majority of Nigerians are poor and the rate of unemployment is high. Moreover, the economic growth experienced in the country has not been inclusive (Yaru, 2015). It is growth in productive population and inclusive growth that can impact positively on local tax revenue.

Meanwhile, the political factors affect tax revenue through economic factors (i.e., tax base, capacity, rates, and tax efforts) (Karran, 1985). They could also affect tax revenue by influencing the willingness of citizens to comply. Some empirical evidence from selected rural local governments in India however showed that the ideological leanings of political parties may not have significant effect on tax revenue generation. A similar finding was found for Britain (Karran, 1985).

That different politicians and political parties may have issues with the structure of tax or tax policy, but they all need tax revenue to fulfil some electoral promises.

The institutional framework governing intergovernmental fiscal relation that determines the scope of fiscal activities and extent of fiscal dependence of lower levels of government on central government also matter for potential and actual tax revenue generation by states and local governments. Institutional factors affect tax revenue through the tax base, fiscal needs and revenue efforts. But empirical evidences on how fiscal needs, fiscal dependence and fiscal efforts could affect local tax revenue are mixed. For instance, dependence on fiscal transfers or untied grants reduces tax efforts, and by implications, internal revenue of local governments (Nicholson-Crotty, 2008; Rajaraman & Vasishtha, 2000; Rao, 2001). Contrarily, Sobel and Crowley (2014) demonstrated that grants or stimulus by the federal government to sub-national governments may result in the introduction of new programmes. The increase in fiscal needs to continue the new programmes would result to increment in taxes or tax efforts. This fiscal behaviour is popularly known as “Ratchet Effect.” But Peacock and Wiseman (1961) referred to it as “displacement and inspection effects” of public expenditure growth.

Meanwhile, evidence from theories and empirics warns that a sudden increase in taxes may not result in corresponding increase tax revenue. An aggressive tax administration or ambitious increase in tax rate might affect economic activities negatively as suggested by “Laffer Curve”, or might lead to fiscal migration (Tiebout, 1956). For example, a high tax rate may hurt the employment level, and consequently tax revenue . High tax rate also provide incentive to corruption in the form of bribery of revenue collectors and evasion by taxpayers. These often affect tax revenue (Ajaz & Ahmad, 2010).

Other institutional factors such as governance and citizen perception of governance also matter (Ajaz & Ahmad, 2010). Good governance viewed by citizens as provision of basic amenities has been identified as an important determinant of voluntary tax compliance by taxpayers and to a large extent tax revenue collection. Empirical evidence from Latin America shows that taxpayers would be more willing to pay taxes when the government is performing . Similarly, Yaru and Awodun (2019) based on the experience of the Kwara State informal sector showed that taxpayers attributed their unwillingness to pay taxes to lack of social amenities and dismal trust in government. These studies suggest that rather than relying on aggressive enforcements and penalties, good governance would improve tax compliance and reduce cost of collections. Unfortunately, local governments in Nigeria have not been performing well enough with respect to the provision of basic amenities due largely to issues related to the inadequacy of revenue.

Another institutional factor identified in the literature is corruption (Ajaz & Ahmad, 2010). And this has been found to have had a negative and significant impact on tax revenue generation in Nigeria, though at the aggregate level. Corruption leads to revenue leakages and thus has a negative impact on tax revenue (Ajaz & Ahmad, 2010).

All the factors identified above, particularly, tax base, fiscal dependence and tax efforts have tendencies to influence tax and non-tax revenue generation at the local level. This is particularly true for Nigeria, given the perennial dependence of local governments on federal transfers in financing their activities. But the review of literature suggests

existence of knowledge gap on how these factors affect revenue collection by the local governments in Nigeria. Thus, this study intends to fill this gap by focusing on how economic factors impact on revenue collection.

### **3. METHODOLOGY**

The study uses both simple descriptive statistical analysis and panel data econometric modeling approach to achieve its objectives. The descriptive analyses include measures of central tendencies (mean) and deviations. Other measures include pairwise correlation analysis. The theoretical framework of the model specification and method of estimation have been elucidated below.

#### **Theoretical Framework of the Model**

The theoretical framework for the model presented in equation 4 stems from the Ability-to-Pay principle of taxation. This theory argues that citizens should be taxed based on their respective abilities to pay. An individual's ability-to-pay is gauged by his/her income, consumption or wealth, usually constituting the tax base. Tax revenue accrual from any source depends on the size of the tax base, rate and effectiveness of tax administration (Karran, 1985). Adhering to the ability-to-pay principle and taking into consideration the variables stressed by Karran (1985), tax revenue could be defined by the basic tax revenue models presented in equations (1-3), where T = tax revenue, t = tax rate/ tax per unit/head, and  $\beta$  = tax base (i.e., the statutory items/objects on which the tax is levied, usually defined by law). The aggregate tax base of a local government is the product of tax rate (t), tax bases of the respective individuals ( $\beta$ ) and the number of taxable individuals or items (Q). It is intuitive to note that as t,  $\beta$  or Q increases, T is expected to increase, "all things being equal". However, as "Laffer Curve" points out, the relationship between tax rate, and tax revenue, T may not be linear. Too high tax rate could result in lower revenue under certain conditions.

Meanwhile, for simplicity, a linear relationship is assumed in the model since the tax rate remains fairly stable and same across LGs. More so, tax cannot be collected without effort/administration. Hence, a more realistic tax model would include tax effort/administration as defined by equation 2.

$$T = t\beta, \dots\dots\dots (1)$$

$$T = t\beta + TE \dots\dots\dots (2)$$

TE = Tax Effort (policies, strategies and measures for effective tax administration).

Taking cognisance of the taxable units, equation 2 can be expressed as 3:

$$T = t(\beta) Q + TE \dots\dots\dots (3)$$

Where Q = the number of people/items in the tax net as defined by the tax law.

Due to dearth of data and limited number of observations, the empirical model for this study considers a few variables as measures of tax base, fiscal needs, government performance and fiscal dependence respectively. Details of the variables, measurement and sources are presented in Table 3.

### **Empirical Model**

The empirical model for the study is presented in equation 4. The model recognises four sets of explanatory variables—measures of tax base, fiscal needs/efforts, fiscal dependence and government performance<sup>2</sup>.

$$T_{it} = \beta_1 + \beta_2 \text{POD}_{it} + \beta_3 \text{LGEX}_{it} + \beta_4 \text{FDTRS}_{it} + \beta_5 \text{CAPEX}_{it} + e_{it} \dots \quad (4)$$

Where:  $T_{it}$  = Vector of Tax and Non-Tax Revenue of  $i^{\text{th}}$  LG at year  $t$ ,

$\text{POD}_{it}$  = Population density of  $i^{\text{th}}$  LG at year  $t$  as a proxy for tax base

$\text{FDTRS}_{it}$  = Vector of Federal transfers, specifically statutory allocations and capital receipts to  $i^{\text{th}}$  LG at year  $t$  as a proxy for fiscal dependence

$\text{Lg}_{it}$  = Vector of personnel and overhead expenditure of  $i^{\text{th}}$  LG at year  $t$  as a proxy for fiscal needs and efforts respectively.

$\text{CAPEX}_{it}$  = Capital expenditure of  $i^{\text{th}}$  LG at year  $t$  as a proxy for government performance.

$e_{it}$  = Error Term,  $i=1,2,3,\dots,16$  and  $t=1,2,3,\dots,8$ .

### **A-Priori Expectation**

Based on theory and empirical evidence we expect a positive relationship between tax revenue and tax base as well as fiscal needs/efforts. Fiscal needs stimulate fiscal efforts of government which may result to increased tax base through expansion of tax net, changes in tax laws/policies or improved collections.

Meanwhile, the a-priori expectation about federal transfers, a proxy for fiscal dependence of local government is conditional on revenue adequacy and fiscal response of the LG. Federal transfers in forms of statutory allocation or capital receipts may result to reduced internal revenue efforts/drive if they sufficiently meet the financial needs of receiving government (Nicholson-Crotty, 2008; Rajaraman & Vasishtha, 2001; Rao, 2001).

On the other hand, some studies argued that capital receipts, when used for temporary expansion of government that may have to be continued in future, would create a “ratchet effect” and this would, in turn, lead to improved future tax efforts and increased tax collection in response to the increased fiscal needs (Sobel & Crowley, 2014) or what was summed as “displacement effect” of public expenditure, and “inspection effects” on the revenue side according to Peacock and Wiseman (1961). The effect of this variable (fiscal dependence) on tax collections would depend on how a government responds to fiscal transfers.

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<sup>2</sup>Though mindful of possible pairwise correlations between fiscal variables,

### Data and Model Estimation

Table 3 presents details of the variables, measurement and sources of data. The data used for the study were panel data on demographics (population density), and public finances of the sixteen (16) local governments of Kwara State between 2009 and 2016. The demographic data, specifically on population density was computed based on annual population projection for the sixteen (16) LGs. The projections were based on the 2006 population census figures reported in Annual Abstract of Statistics, published by National Bureau of Statistics (NBS) in 2012, and 3.2 percent annual population growth rate estimate proposed by National Population Commission. Data on public finances of the local governments were compiled from the Annual Reports of Auditor General for Local Governments of Kwara State for various years.

**Table 3: Variables, Measurements and Sources of Data**

Variable	Classification	Measurements	Source
Revenue (T) represented by Tax revenue (Taxes), Non-tax revenues (NonTR) and Overall IGR (TIGR)	Revenue Collections	Nominal tax revenue and Non-tax revenue are measured in Naira.	Annual Reports of Auditor General for Local Governments, Kwara State for various years, 2009-2016
Population Density (POD)	Tax base	Number of persons per Km <sup>2</sup> measured as Population divided by Landmass	Annual Abstract of Statistics, 2012 & Author's computation.
Federal Transfers represented by Statutory Allocation (FedTRs) and Capital receipts (CAPReceipt)	Fiscal dependence	Nominal value of federal transfers in Naira	Annual Reports of Auditor General for Local Governments, Kwara State for various years, 2009 -2016
Recurrent Expenditure represented by Personnel cost (Pcost) and Overhead cost (Ohcost)	Fiscal Needs/Efforts	Personnel cost, overhead cost measured in nominal Naira value	
Capital Expenditure (CAPEX)	Government Performance	Capital expenditure measured in nominal Naira value	

**Source: Author, 2019.**

Three variants of the empirical model in equation 4 were estimated using Generalised Least Square (GLS) method. The GLS method is the best for short panel data such as the one used for this study. (Gujarati & Porter, 2009). Both fixed and random effects models' forms were considered. Hausman's test was used to determine the appropriate model between the fixed and random effect for each of the variants. Table 6-8 present the results of three variants of the estimated model respectively.

#### 4. RESULTS AND DISCUSSION OF FINDINGS

##### Preliminary Analysis

This section presents the results of the preliminary analysis (mainly descriptive statistics and pairwise correlations) of the data used for the study. Table 4 and 5 show the descriptive statistics and pairwise correlation matrix of the variables in the estimated models respectively. Among the variables, Taxes, NonTR and TIGR are the dependent variables, while POD, FedTRs, CAPReceipt, Pcost, Ohcost, and CAPEX constitute the explanatory variables. Table 4 indicates that the average tax revenue (Taxes) collections by the LGs was N1.86 million during the period covered. The value of non-tax revenue (NonTR) collections averaged N16.40 million, while value of IGR averaged N17.9 million. Federal transfers (FedTRs) averaged N412.00 million. These statistics suggest dominance of non-tax revenue in the IGR profiles of LGs and excessive dependence on federal transfers for funding. On the expenditure side, personnel cost (Pcost) averaged N 374 million, overhead cost, N 183.00 million and capital, N 218 million. Again this confirmed the skewedness of the LG expenditure towards recurrent expenditure.

**Table 4: Descriptive Statistics of Variables in the Model**

Variable	Obs	Mean	Std. Dev.	Min	Max
Taxes	101	1,860,200.00	2,713,024.00	450.00	16,500,000.00
NonTR	128	16,400,000.00	15,300,000.00	93,450.00	93,400,000.00
TIGR	128	17,900,000.00	15,700,000.00	1,047,862.00	94,400,000.00
POD	128	494	800	19	2,818
Pcost	128	374,000,000.00	143,000,000.00	149,000,000.00	772,000,000.00
Ohcost	123	183,000,000.00	96,000,000.00	56,700,000.00	645,000,000.00
FedTRs	128	412,000,000.00	225,000,000.00	48,700,000.00	1,210,000,000.00
CAPReceipt	127	412,000,000.00	168,000,000.00	82,500,000.00	880,000,000.00
CAPEX	126	218,000,000.00	87,000,000.00	400,000.00	986,000,000.00

**Source: Author's Computation**

Population density ranged between 19 and 2,818 persons per square(Sq) kilometres (Km) with a mean of 494 persons per Sq/Km. The LGs in the central and south senatorial districts of the State have relatively smaller land mass and moderate to high population densities, while those in the north have larger land mass and lower population densities. This explained the huge difference between the maximum value of population density and minimum.

Table 5 presents the pair-wise correlation matrix between the variables in the model. The correlation coefficients show that tax revenue correlates weakly with all variables in the model. The strongest correlate of tax revenue (Taxes) with the independent variables in the model is population density (POD) with a correlation coefficient of 0.2703, followed by overhead expenditure with 0.2246 and the weakest is capital receipt (CAPReceipt) with 0.0147. The weak correlation coefficients suggest that other factors rather than those considered in the model have significant influence on tax revenue collection by the

LGs. The results conform to some realities. Tax administration requires operational cost, while staff monthly salaries are sacrosanct. Operational expenditure if well channeled to collect revenue would result in higher tax collections.

**Table 5: Correlation Matrix of Variables in the Model**

	Taxes	NonTR	TIGR	FedTRs	CAPReceipt	Pcost	Ohcost	POD	CAPE X
Taxes	1								
NonTR	0.0598	1							
TIGR	0.2255	0.9872	1						
FedTRs	0.0834	0.5190	0.5157	1					
CAPReceipt	0.0147	0.5253	0.5193	0.3710	1				
Pcost	0.0192	0.4212	0.4208	0.1395	0.4647	1			
Ohcost	0.2246	0.4848	0.5119	0.2910	0.2886	0.2999	1		
POD	0.2703	0.2372	0.2756	0.2973	0.0903	0.2975	0.0107	1	
CAPEX	0.1372	0.3618	0.3759	0.2351	0.2979	0.0794	0.4722	0.1717	1

Source: Author’s Computation, 2019

Meanwhile, non-tax revenues (NonTR) which jointly account for the bulk of internally generated revenue have relatively higher correlation with other variables in the model as shown in column III of Table 5. The strongest correlation is with total IGR with 0.9872, followed by capital receipt (CAPReceipt) with 0.5253 and federal transfers (FedTRs) with 0.5190. The very high correlation coefficient between non-tax revenue and total IGR reiterates the overwhelming dominance of non-tax revenue (NonTR) in the total IGR of LGs in section two. In other words, the trend of total revenue collections is dictated by non-tax revenue. Surprisingly, the correlation between non-tax revenue (NonTR) and population density (POD) is the weakest, with a coefficient of 0.2372. The strong and weak correlation between federal transfers and population density and total IGR respectively seem to be in line with the findings of Karran (1985) in Britain. That tax revenue trends are largely dictated by macroeconomic dynamics and much less by tax base and rates.

**Panel Regression Results**

Table 6-8 present the results of three variants of the estimated model respectively. In estimating the models, the dependent revenue (T) was considered in three variants—Taxes, Non-taxes (NonTR), and then the total IGR (TIGR) which is the sum of Taxes and non-tax revenue. The Tax Revenue Model (Model I) examines the impact of population density (POD), federal transfers (FedTRs), a proxy for fiscal dependence and local recurrent government expenditure (Pcost and Ohcost), proxy for fiscal needs, and capital expenditure (CAPEX), proxy for government performance on tax revenue (taxes) of LGs, while Non tax Revenue Model (Model II) examines the impact of the explanatory variables on non-tax revenues, which include rates, licences, fines and fees, earnings and sales, investment income, etc. Model III examines the impact of the same independent variables on the overall IGR. The results of Model I, Model II and Model III

are reported in Tables 6, 7 and 8 respectively. The results are for both the Fixed Effects and Random Effects models. The appropriate model for each of the models was suggested by the Hausman test. The test statistics are presented along sides with the results. In Table 6, the test statistics suggest that Random Effects was the more appropriate for the Tax model (Model I), while Fixed Effects models were suggested for the Non-Tax revenue model (Model II) and Total Internal Revenue Model (Model III) in Table 7 and 8 respectively.

The individual effects of the explanatory variables on tax revenue (taxes) in Model I based on the Random Effects Estimates, show two variables were significant in the model at 1 and 5 percent significance levels, i.e., population density (POD), which represents tax base; and overhead expenditure, a proxy for fiscal needs/efforts respectively. Other variables including federal transfers, personnel expenditure, capital receipt and capital expenditure did not appear as significant determinants of tax revenue in the LGs. The results suggest that an increase in population density (POD) by one person would lead to an increase in tax revenue by N1,205.77 in Model I.

In Model II and III based of the Fixed Effect Estimates, it is only population density that came out significant and at 1 percent level of significance among all the independent variables in the models. Increase in population density would increase Non-Tax revenue by N47, 150.6 and overall IGR by N54,246.83. This finding contradicts (Ohiokha & Ohiokha, 2018) which found that population growth (a proxy for growth in tax base) had an insignificant effect on tax revenue at an aggregate level in Nigeria. The reason for the contradiction might be that Ohiokha and Ohiokha (2018) used aggregate data on population while the current study used local government level data on population density.

However, federal transfers, capital receipt and overhead expenditure appeared as significant determinants of the non-tax internal revenues based on the Random Effects Estimates in Table 7. Meanwhile, population density came out insignificant in the model. For overall IGR, the results of the Random Effects in Table 8 show all the variables that were significant in Model II based on the Random Effects Model are also significant, and besides, population density was significant, but marginally.

Meanwhile, capital expenditure which could be a proxy for the provision of local public amenities to citizens or government performance was not significant in any of the models. This might be due to the very low share of capital expenditure in the total expenditures of the respective LGs. In some years, the percentage share was as low as 1 percent of total expenditure.

**Table 6: Model I: Tax Revenue Model Estimates**

Variables	Fixed Effect Estimates			Random Effect Estimates ††		
	Coef.	T	P>t	Coef.	z	P>z
C	-1548850	-0.42	0.674	1333737	1.46	0.143
POD	7870.554	1.38	0.171	1205.722***	3.21	0.001
Ohcost	0.0065427*	1.66	0.100	0.0075385**	2.26	0.024
Pcost	-0.0039154	-1.2	0.236	-0.0036604	-1.53	0.126
FedTRs	-0.0018707	-1.09	0.281	-0.001665	-1.12	0.265
CAPReceipt	-0.0011185	-0.42	0.676	0.0011948	0.55	0.581
CAPEX	0.0030034	1.08	0.282	0.000373	0.21	0.836
Hausman test Chi2(1) = 1.28 Prob>chi2 = 0.2588	No. of Obs. 94 Group No. 16			No. of Obs. 94 Group No. 16		
	R-Sq= within = 0.0874 between = 0.4029 overall = 0.1020 F(6,72) = 1.15 Prob> F = 0.3433			R-Sq= within = 0.0605 between = 0.4422 overall = 0.158 Wald chi2(6) = 16.33 Prob> chi2 = 0.0121		

\*, \*\* and \*\*\* Significant at 10%, 5% and 1% respectively. Z-statistics are in parenthesis. †† more appropriate model

**Table 7: Model II: Non-Tax Revenue Model Estimates**

Variables	Fixed Effect Estimates ††			Random Effect Estimates		
	Coef.	T	P>t	Coef.	z	P>z
C	-4864177	-0.51	0.614	-11500000.00***	-2.83	0.005
POD	47150.6***	2.92	0.004	1768.036	0.98	0.326
Ohcost	-0.0018716	-0.15	0.877	0.0258824	1.98	0.047
Pcost	-0.0111792	-1.15	0.255	0.0130296	1.37	0.170
FedTRs	0.0072976	1.52	0.131	0.0200671***	3.85	0.000
CAPReceipt	-0.0039414	-0.52	0.607	0.0194377**	2.50	0.012
CAPEX	0.0072449	1.03	0.308	0.0067863	1.04	0.299
Hausman test Chi2(1) = 8.03 Prob>chi2 = 0.0046	No. of Obs. = 120 Group No. 16			No. of Obs. = 120 Group No. 16		
	R-Sq= within = 0.1422 between = 0.0748 overall = 0.0665 F(6,98) = 2.71 Prob> F = 0.0178			R-Sq= within = 0.0100 between = 0.8851 overall = 5257 Wald chi2(6) = 65.15 Prob> chi2 = 0.0000		

\*, \*\* and \*\*\* Significant at 10%, 5% and 1% respectively. Z-statistics are in parenthesis. †† more appropriate model

**Table 8: Model III: Total Internal Revenue Model Estimates**

Variables	Fixed Effect Estimates††			Random Effect Estimates		
	Coef.	T	P>t	Coef.	z	P>z
C	-6082508	-0.64	0.521	-9803875**	-2.35	0.019
POD	54246.83***	3.42	0.001	3118.928*	1.67	0.095
Ohcost	0.0050923	0.43	0.669	0.0323746**	2.47	0.013
Pcost	-0.0154339	-1.61	0.111	0.0094156	0.98	0.327
FedTRs	0.0056934	1.21	0.23	0.0184291***	3.53	0.000
CAPReceipt	-0.004673	-0.62	0.536	0.0192051	2.45	0.014
CAPEX	0.0096793	1.39	0.167	0.0070718	1.08	0.28
Hausman test Chi2(1) = 10.55 Prob>chi2 = 0.0012	No. of Obs. = 120 Group No. 16 R-Sq= within = 0.1638 between = 0.1040 overall = 0.0892 F(6,98) = 3.20 Prob> F = 0.0065			No. of Obs. = 120 Group No. 16 R-Sq= within = 0.0102 between = 0.8769 overall = 5431 Wald chi2(6) = 64.77 Prob> chi2 = 0.0000		

\*, \*\* and \*\*\* Significant at 10%, 5% and 1% respectively. †† more appropriate model

Overall, the results suggest that population density, a measure of tax base and overhead expenditure, which roughly estimates fiscal needs/efforts are the most consistent determinants of revenue in LGs. This is not surprising as Local governments depends on internally generated revenue for financing their operations, and on federal transfers for personnel cost (salaries), hence, a LG with higher overhead cost has to put efforts to generate more revenue from internal sources. The positive relationships between fiscal needs, efforts and overhead expenditures suggest the consistent significant coefficient of overhead cost in all models. Government overhead expenditure could also indicate it fiscal efforts because when the government fails to provide funds for the operation, tax and other revenue collectors would not be able to perform their functions.

The overall explanatory power of the models, particularly of the fixed effects models were low. The random effect model appeared to have performed better but happened to have been less preferred as indicated by the Hausman test in two of three variant models estimated. The low explanatory power may be due the short period covered by the study, omission of relevant variables or similarity in the behavior of the LGs as regards IGR.

## 5. CONCLUSION AND RECOMMENDATIONS

This paper examined the determinants of tax and non-tax revenue collections by local government in Nigeria based on empirical data on the sixteen (16) LGs of Kwara State. The theoretical determinants of tax revenue revolve around the tax base and tax rate. Other determinants such as fiscal dependence, revenue efforts, institutional factors and willingness of citizens to comply with tax payment affect tax revenue through their respective influence on the tax base or rate. Due to the dearth of data, the study focused

on the relative influence of tax base, fiscal needs/efforts, government performance and fiscal dependence on tax and non-tax revenue generation by the LGs. The conclusion from the study is that population density, a proxy for tax base, and overhead expenditure, a proxy for fiscal needs/efforts appeared as the most consistent significant determinants of tax revenue generation in local governments. Given the Tiebout (1956) model of potential fiscal competition among local governments, a local government that intends to increase its revenue (tax and non-tax) should improve its efforts and adopt fiscal measures that would attract more people and businesses from other neighbouring local governments to its jurisdiction.

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## **ACHIEVING TRANSPARENT IFRS FINANCIAL REPORTING IN NIGERIA AND GHANA: THE B & B MODEL EFFECT**

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### **ABSTRACT**

*In Africa, the transparency quality of financial disclosures appears to rank below expectations after several years of adopting IFRS. Some scholars advocate for the deployment of multi investigative models as a complement during Financial Statements audit to help secure reasonable transparency in IFRS financial reporting. As a result, this study intends to ascertain the effectiveness of Benford's Law in evaluating the faithful representation quality of IFRS financial disclosures of public listed companies. It also intends to determine whether Beneish Ratios are suitable complements in evaluating faithful representation quality of financial disclosures. Being casual comparative research, the 2009 - 2011 and 2012 - 2016 IFRS Annual Reports of 44 listed manufacturing companies in Ghana and Nigeria were evaluated. Analyses were executed using Benford's Law and Beneish Ratios (B & B Model), Chi-Square, Multiple Regression and Mann Whitney U test. Findings obtained showed that Benford's Law, upon proper deployment and application, is effective in evaluating the faithful representation quality of financial disclosures in IFRS based Financial Statements of public manufacturing companies in Nigeria and Ghana. Also, Beneish Ratios were observed to be suitable complements in evaluating the faithful representation of IFRS financial disclosures of these companies studied in both countries. Based on the above findings, it was concluded that expected reasonable transparency in IFRS financial reporting is not the case in Nigeria and Ghana despite both countries' compliance with IFRS.*

**Key Words:** B & B Model, Faithful Representation Quality, IFRS Financial Disclosures, Manufacturing companies, Transparency.

### **1. INTRODUCTION**

The impact result of global economic crisis lends support to reasons behind the crusade for the uniformity of accounting frameworks and the consequent geometric rise in the adoption of the International Financial Reporting Standards (IFRS) across several reporting jurisdictions worldwide.

Observation across Africa showed that the continent was hit unprepared. The experience that followed in Nigeria and Ghana was the fold-up of notable public entities as Commercial banks and the later loss of billions of Naira and Cedis worth of business equities.

The collapse of notable corporate giants as Enron (USA), WorldCom, Global Crossing (Europe), Nationwide Airlines, Velvet Sky Aviation, 1Time Holdings (South Africa) and the consequent buy up or takeover of some notable Deposit Money Banks in Nigeria as AfriBank, Oceanic Bank, Intercontinental Bank, Bank PHB, First Inland Bank, Skye Bank, (Nwoye, Obiorah & Ekesiobi, 2015) and most recently Diamond Bank had all attracted stern public outcry against the accounting profession with External Auditors accused of conspiracy and breach of the public trust reposed on them. The consequence was that the existing confidence of users on Financial Statements of listed corporate organizations was forced below the bottom line, despite the sanctions of the Administrative Proceedings Committee on convicted Management Executive members and the External Auditor of Cadbury Nigeria Plc in 2007 for its purported overstatement of over N13 billion in its financial reports for the years 2002 – 2006. This event still lingers fresh in the historic memos of the nation.

Although Ghana's economic and corporate atmosphere cannot be said to have thrived well during this period of global economic failure, the August 14, 2017, and August 1, 2018 press release of the Central Bank of Ghana which revealed the collapse, takeover and/or merger of seven indigenous banks (wiki source, 2019b) namely UT Bank Ltd, Capital Bank Ltd (*both taken over by GCB Bank Ltd*), Unibank Ghana Ltd, Royal Bank Ltd, Beige Bank Ltd, Sovereign Bank Ltd and Construction Bank Ltd (*all latter five banks merged to form Consolidated Bank Ghana Ltd*) explicitly affirm the above possible fears. Though Ghana had in times past recorded corporate failures as Tano Agya Rural Bank, Tana Rural Bank Ltd, Meridian BIAO Bank, Bank for Credit and Commerce International, Gateway Broadcasting Services, Ghana Co-operative Bank, Bank for Housing and Construction, National Savings and Credit Bank, Merchant Bank Ghana Ltd, Ghana Airways Ltd, Juapong Textiles Ltd, Bonte Gold Mines, Divine Sea Foods Ltd et cetera, the outcry of Frimpong, Ameyaw, Bonsu and Abena (2017) that little or no study has been done in Ghana in the form of empirical research to ascertain the level of unfaithful representation in Ghanaian companies' financial reporting practices may have saved the situation from deteriorating further if it had received a follow up proactive investigative positive response from relevant regulatory authorities in Ghana. While local investor in Nigeria lamented the complexity of sensitive disclosures in the Financial Statements and tendencies of incomplete disclosures based on the requirements of the old Nigeria Generally Accepted Accounting Principles (NG GAAP), Oheneba, Muhammad and Kamran, (2011) noted that the Ghanaian local GAAP (Ghanaian National Accounting Standards) which the country relied on before January 1<sup>st</sup>, 2007 when it adopted IFRS, were highly insufficient for the preparation of an informative corporate financial report that represents the interest of both local and foreign investors.

The fear of possible loss of investments due to prevalence of different accounting basis for the preparation of Financial Statements in Nigeria and Ghana before January 1, 2012, and 2007 when both countries adopted IFRS equally overwhelmed foreign investors. As a result, international investors began to press for Financial Statements that are based on a uniform but globally accepted Accounting framework which makes financial information comparable across the globe. Herbert, Ene, and Tsegba (2013) concur to this stressing that global concern for a uniform financial reporting architecture gave rise to the movement for the harmonization of financial reporting standards of nation-states. It can almost be said that the financial crisis that ravaged the global Capital markets was mainly due to insufficiency of or the absence of trustworthiness in financial information disclosed (Bahrami & Bejan, 2015).

Callao, Ferrer, Jarne and Láinez (2010) upheld this view arguing that the introduction of a uniform accounting regime as IFRS is expected to ensure greater comparability and transparency of financial reporting around the world. The essence of this sensitive intervention by the International Accounting Standard Board (IASB) from April 2001, according to Ball (2008), is drawn from the fact that reliance of potential drivers of Capital markets on the disclosed figures of companies' financial records depend largely on how well such financial disclosures reflect the companies' financial position and performance during the investment decision making process. This implies that in the absence of investors' confidence in an entity's accounting information, the integrity of such financial information could be considered anything but a questionable one. Atu, Adeghe and Atu (2016) concur to this, stating that the adoption of IFRS increases the confidence level of global Investors and investment Analysts in the Financial Statements of public listed companies in Nigeria even as multinational companies ability to fulfil the disclosure requirements for Stock Exchanges globally is greatly enhanced.

This entails that the prevalence of a high-quality financial information system that permits transparency and proper accountability in a country or organization is considered a worthwhile goal. To this, Lepădatu and Pîrnău (2009) concur stressing that the transparency of Financial Statements is secured through commendable full disclosures by providing to a wide range of users with a fair presentation of useful information necessary for making economic decision. The discourse of transparency of Financial Statements and financial disclosures' integrity appear to be more meaningful when treated within the scope of transparency/faithful representation during financial reporting. This, in essence, is the very reason why Investors and Professional Accountants, according to Okoye, Nwoye and Abiahu (2018) must watch out for sensitive choking smogs that could pave way for creative accounting practices among entities. It could be recalled that despite the full adoption of IFRS in Nigeria and Ghana in 2012 and 2007, both countries have continued to witness sensitive corporate failures largely due to what the Central Bank of Nigeria and the Central Bank of Ghana referred to as 'insolvency/illiquidity challenges' and "weak regulatory oversight". For while Nigerian public listed giants like Intercontinental Bank Plc and Diamond Bank Plc got taken over by Access Bank Plc, seven (7) indigenous banks in Ghana (as outlined above) lost their trading feet in Ghana; all events happening in the post-IFRS adoption period of

both countries. It is on this premise that Mehta and Bhavani (2017) advocated for a more extensive review of financial reports through the joint application of the Benford's Law and the Beneish Predictive model (hereafter referred to as B & B models) as a means of strengthening the practice of transparent financial reporting and/or faithful representation built on good corporate governance among corporate organisations.

Hence, the study intends to examine the effect that the utilization of the B & B Model would have upon proper deployment to secure reasonable transparency in IFRS Financial Statements of selected manufacturing companies in Nigeria and Ghana. Specifically, the paper will aim to ascertain the effectiveness of the Benford's Law in evaluating the faithful representational quality of financial disclosures of Nigerian and Ghanaian publicly listed companies; to determine whether Benford's law digital analyses have implications in the post IFRS reporting periods of Nigeria and Ghana differ significantly; and to determine whether the Beneish Ratios are suitable complementary assessment tools in evaluating faithful representation quality of IFRS financial disclosures of Nigerian and Ghanaian manufacturing companies.

The rest of the paper is organized as follows: Section two presents a literature review on the concept of quality accounting information disclosures, the status of IFRS adoption in Africa, IFRS compliances in Ghana and Nigeria, faithful representation versus transparency during financial reporting, theories of Beneish model and Benford's Law, empirical summaries from prior studies and gap established. Section three of the paper presents the materials and methods used for data analyses. Data analyses proper, results and discussions are presented in section four whilst section five concludes the paper with relevant recommendations made.

## **2. LITERATURE REVIEW**

### **2.1 Concept of Quality Accounting Information Disclosures**

Financial Statements are a structured representation of the financial positions and financial performances of entities. The objective of Financial Statements is to provide information about the financial position, financial performance (Wallis, 2016) and cash flows of an entity which is considered useful to a wide range of users in making economic decisions. Effective regulation of accounting information often maintain emphasizes on the need to ensure at all times that Users of Financial Statements are availed the opportunity of accessing minimum but a quality quantum of financial information that is useful to them, especially at making decisions that could help them secure their interest in the reporting entity (Adetunji, Mamuda, & Wula, 2014).

The need to secure and sustain the practice of transparency and faithful representation of business stewardship among corporate organizations can perhaps be traced to the complexity of the modern-day business world that began in the 18<sup>th</sup> century. According to Ndibe and Okoye (1998) and Summers (2016), the rise of the industrial revolution brought in large scale production, steam power, improved facilities and better means of communication that consequently prompted the need for improved accounting system in organisations.

This, Summers (2016) reported, resulted in the origin of Joint Stock form of organizations such that Shareholders who contributed their money as capital to these companies did not manage or have control over the day to day working of the organization. Yet, these Shareholders were often interested in knowing what happened to their investment, its growth status at every point in time and its effect on the financial position of the company they owned (Maverick, 2015). This, of course, led to the formation of what today's modern business now refer to as the Board of Directors, who are accorded such powers that makes them responsible for the presentation of business financial report to the Shareholders at the end of each financial year (Summers, 2016). Thus, Financial Statements show the results of the management's stewardship (EFRAG, 2007) of the resources entrusted to it. To meet this objective, information about an entity's assets, liabilities, equity, income and expenses including gains and losses, contributions by and distributions to owners in their capacity as owners and cash flows should be provided in the Financial Statements.

Although it is Edogbanya and Kamardin (2016)'s expectation that a positive relationship exists between better-performing companies and corporate disclosure, Idialu (2014) posits that corporate financial information disclosed for public consumption is considered relevant when such accounting information is seen to be “*accurate, complete and fair*” for trustworthiness and faithfully representation purpose. Haka and Carcello (2016) stressed that it is important that accounting information possess these qualities due to its significance to individuals for essential investment or managerial decision making purposes.

Today, global effort is being intensified towards achieving a uniform ground for the preparation and presentation of a high-quality set of Financial Statements that are acceptable worldwide (Abata, 2015b). The International Accounting Standards Board (IASB) in the United Kingdom and the Financial Accounting Standards Board (FASB) in the United States of America have both shown mutual commitment towards this course at Norwalk (Ong, 2017) back in 2002 though progress has been slow-paced. Despite this, commendable milestones have been recorded in global accounting history especially as more than 170 countries have either required or permitted the adoption and implementation of the International Financial Reporting Standards (IFRSs), issued by IASB from April 1, 2001, as regulatory accounting Standards for financial reporting practices in their respective jurisdictions.

As a principle-based set of accounting Standards (Gill, 2003) that paves room for use of professional judgment and upholds comparability and transparency of Financial Statements as its core values through extensive disclosures (Ofoegbu & Odoemelum, 2018) across borders or between different reporting jurisdictions, IFRS is still considered a subject of intense controversy in the United States of America and some other countries, though many countries in Africa have either adopted it as December 2019 or plan to do so in the future.

## **2.2 Status of IFRS Adoption in Africa**

The financial reporting landscape was different for every country when the IASB took over from its predecessor IASC and began its work in late March 2001 with the issuance of IFRS (Asumadu & Das, 2018). Regardless of the benefits, the adoption of IFRS provides to developing nations, the loss of control on Standards setting by the regulatory body of adopting nation, possible abuse of monopoly by the global Standard setting body over the Standard setting process, unsuitability of global Standards to local economic environments and regulatory framework, possible complexity in the structure of international Standards, potential knowledge shortfall, difficulties in the application of the Standards and enforcement challenges (Inusah & Dwommor, 2017) were evident mountains that discouraged most developing countries from embracing the international reporting Standards (IFRS). Some African countries, because of this, are yet to adopt, require or permit the use of IFRS in their jurisdiction. Given below in Table 1 is the status of IFRS adoption in Africa as at December 2019.

Table 1 : Africa and IFRS adoption to date

S/N	Name of Adopting Country	Mode of Adoption	Year Adopted	Name of Stock Exchange	Region of Africa
1	Algeria	Not adopted		Algeria Stock Exchange	North Africa
2	Angola	Required for banks only	Jan. 2016	Angola Stock Exchange & Derivatives	Central Africa
3	Benin Republic	Required	Jan. 2019	Bourse Regionale des Valeurs Mobilières (BRVM)	West Africa
4	Botswana	Required and permitted	Sept. 2009	Botswana Stock Exchange	South Africa
5	Burkinafaso	Required	Jan. 2019	Burkinafaso Stock Market	West Africa
6	Burundi	Not adopted		No Stock Exchange	East Africa
7	Cameroun	Required	Jan. 2019	Douala Stock Exchange	Central Africa
8	Cape Verde	Required	2008	Bolsa de Valores de Cabo Verde	West Africa
9	Central African Republic	Required	Jan. 2019	Bourse Regionale des Valeurs Mobilières d'Afrique Centrale (BVMAC)	Central Africa
10	Chad	Required	Jan 2019	BVMAC	Central Africa
11	Comoros	Required	Jan. 2019	No Stock Exchange	East Africa
12	Cote d'Ivoire	Required	Jan. 2019	BRVM	West Africa
13	Democratic Republic Congo	Required	Jan. 2019	BVMAC	Central Africa
14	Republic of Congo	Required	Jan. 2019	Not available (N.A)	Central Africa
15	Djibouti	Not adopted		Not available (N.A)	East Africa
16	Egypt	Required	1993*	Egyptian Exchange	North Africa
17	Equatorial Guinea	Required	Jan. 2019	BVMAC	Central Africa
18	Eritrea	Required for unlisted companies	N.A	No Stock Exchange	East Africa
19	Ethiopia	Permitted	N.A	N.A	East Africa
20	Gabon	Required	Jan. 2019	BVMAC	Central Africa
21	The Gambia	Required and permitted	Jan. 2013	No Stock Exchange	West Africa
22	Ghana	Required	Jan. 2007	Ghana Stock Exchange	West Africa
23	Guinea	Required	Jan. 2019	N.A	West Africa
24	Guinea Bissau	Required	Jan. 2019	BRVM	West Africa
25	Kenya	Required	Jan. 1999	Nairobi Securities Exchange	East Africa
26	Lesotho	Required	2005	Maseru Securities Exchange	South Africa
27	Liberia	Required for banks only	2012	No Stock Exchange	West Africa

Source: Authors' compilation (2019), IAS Plus, <https://www.iasplus.com/en/resources/ifrs-topics/use-of-ifrs>.

**Table 1 : Africa and IFRS adoption to date**

28	Libya	Permitted	N.A	Libyan Stock Market	North Africa
29	Madagascar	Permitted	N.A	No Stock Exchange	East Africa
30	Malawi	Required	October 2009	Malawi Stock Exchange	East Africa
31	Mali	Required	Jan. 2019	BRVM	West Africa
32	Mauritania	Not adopted		No Stock Exchange	West Africa
33	Mauritius	Required and permitted	N.A	Stock Exchange of Mauritius	East Africa
34	Morocco	Required	Jan. 2008	Casablanca Stock Exchange	North Africa
35	Mozambique	Required for banks only	2007	BRVM	East Africa
36	Namibia	Required	Jan. 2005	Namibian Stock Exchange	South Africa
347	Niger	Required	Jan. 2019	BRVM	West Africa
38	Nigeria	Required	Jan. 2012	Nigerian Stock Exchange	West Africa
39	Sao Tome and Principe	Not Adopted		N.A	Central Africa
40	Rwanda	Required	2009	Rwanda Stock Exchange	East Africa
41	Senegal	Required	Jan. 2019	BRVM	West Africa
42	Seychelles	Not Adopted		Maif Exchange Limited	East Africa
43	Sierra Leone	Required	2009	Sierra Leone Stock Exchange	West Africa
44	Somalia	Permitted	N.A	Somali Stock Exchange	East Africa
45	South Africa	Required	Jan. 2005	Johannesburg Stock Exchange	South Africa
46	South Sudan	Permitted	N.A	N.A	East Africa
47	Sudan	Permitted	N.A	Khartoum Stock Exchange	North Africa
48	Swaziland	Required	2009	Swaziland Stock Exchange	South Africa
49	Tanzania	Required for MNC's only	2004	Dar es Salaam Stock Exchange	East Africa
50	Togo	Required	Jan. 2019	BRVM	West Africa
51	Tunisia	Not adopted		Bourse de Tunis	North Africa
52	Uganda	Required	1998*	Uganda Securities Exchange	East Africa
53	Zambia	Required	2005	Lusaka Stock Exchange	East Africa
54	Zimbabwe	Required	1996*	Zimbabwe Stock Exchange	East Africa

Source: Authors' compilation (2019), IAS Plus, <https://www.iasplus.com/en/resources/ifrs-topics/use-of-ifrs>, Wiki source (2018), [https://www.wikipedia.org/wiki/List\\_of\\_African\\_Stock\\_exchanges](https://www.wikipedia.org/wiki/List_of_African_Stock_exchanges)

\* These were already on IASs issued by IASB before the emergence of IFRS in April 2001 as issued by IASB.

From Table 1, 41 out of 54 African countries, as of December 31<sup>st</sup>, 2019, have adopted IFRS financial disclosures guideline. Of this number, 33 countries required the same for all listed companies across all sectors and some unlisted companies as in Eritrea while 8 of them as Angola, Botswana, Gambia, Liberia, Mauritius, Morocco, Mozambique, and Tanzania required IFRS for some category of companies that are mostly financial institutions, though a few of them equally permitted it (IFRS) side by side with its mandatory requirement in some sectors as in Botswana, Gambia, Liberia, Mauritius and Morocco, to pave room for the voluntary application of the same by some companies who may choose to apply the affected jurisdiction's local GAAP or US GAAP instead of IFRS. 6 countries as Ethiopia, Libya, Madagascar, Somalia, South Sudan and Sudan only permits (not require) the use of IFRS. The remaining 7 countries as Algeria, Burundi, Djibouti, Mauritania, Sao Tome, Seychelles, and Tunisia neither required not permits the use of IFRS in their jurisdiction.

The above details equally update the account of Tawiah (2019) who observed that as at 2017 (as published by IFRS Foundation), only 18 African countries required IFRS for all companies, 4 countries required the International Financial Reporting Standards for some companies, 9 African countries permitted the use of IFRS while 21 African countries did not permit the adoption and use of IFRS in its reporting jurisdiction. This paints a picture of unprecedented unique improvement in the embrace of IFRS guidelines by African countries.

The rise in adoption rate in Africa (76% African countries presently using IFRS) is a remarkable improvement compared to the continent's adoption status as at 2010 where only 20% of the 54 African countries (the equivalent of 11 African countries) were reported by Ismaila, (2010) cited in Abata (2015a) to have adopted IFRS then. This laudable progress can also be attributed to the unanimous action taken by 17 member countries of the Organisation for the Harmonization of Corporate Law in Africa (OHADA) such as Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Comoros, Côte d'Ivoire, Democratic Republic of Congo, Equatorial Guinea, Gabon, Guinea, Guinea-Bissau, Mali, Niger, Republic of the Congo, Senegal and Togo on 1<sup>st</sup> January 2019 when they all reportedly adopted IFRS (IFRS Foundation, 2019). Although the above response seems to reflect the external pressure and influence of some regulatory international organizations like the International Monetary Fund and the World Bank, Inusah and Dwommor (2017) point out that most developing countries adopted IFRS to gain acceptance in the international market knowing fully well that they could not produce a legitimate set of Accounting Standards that meet the expectation of the international community.

However, a sensitive observation made by Okoye and Nwoye (2018) in a comparative study that appraised the quality of compliance upheld by adopting African countries with emphasis on Nigeria and Ghana showed that IFRS Financial Statements of public listed companies studied were not consistent in their compliance to IFRS minimum disclosure requirements and as a result were incomparable (cross border wise) to the extent of that inconsistency even among multinational companies listed in the continent's various Stock Markets/Exchanges.

Given this, it is pertinent to state that the need to also assess the faithful representation status of financial disclosures made in IFRS Financial Statements side by side with its compliance quality level cannot be overemphasized. This is more as the regenerated effort made towards assuring Investors and Users that the progress made so far by African nations towards achieving uniformity and comparability of Financial Statements (Okolie & Omoregie, 2014) across Africa and globally is explicitly complemented with the secure of transparency in financial disclosures (Lepãdatu & Pîrnãu, 2009) made per IFRS disclosure guidelines (KPMG, 2018). This has continued to raise serious observed concern and questions in regions repeatedly exposed to corporate scandals/failures on whether the adoption of IFRS readily enhances and secures transparency and accountability in corporate financial reporting of such jurisdictions. This is more as global economies have become more cautious and conscious of the enormous risk accrued to corporate liability in today's challenging International Capital Market.

### **2.3 Nigeria and IFRS Compliance**

The adoption of IFRS by different national jurisdictions (Hope, Jin & Kang, 2006) appear to cut across several reasons ranging from possible production of Financial Statements that are based on globally accepted financial reporting practices when full compliance has been duly observed and its consequent permissive room for the exercise of professional judgment especially when making accounting choices. All these are not without their implicative effects at the international Capital markets as well as its accompanying macroeconomic consequences (Palea, 2013).

According to Atu, Adeghe and Atu (2016), the importance and benefit that accrues to the adoption and implementation of IFRS in any jurisdiction need be weighed with the cost or challenges before taking such sensitive step. To these scholars, the first point of call whenever accounting issues of a nation is at stake should be the crafting and development of meaningful accounting system most suitable for the country rather than a rushed decision to adopt already structured International Accounting Standards (IASs) from developed countries. Their reasons have been that the idea of developed countries wanting to dominate the IASB structure and Standards setting process through strong lobbying and opposition need be considered thoughtfully, given its detrimental effect on developing countries. Suffice it to say that, although the views of Atu *et al*, (2016) mean well, history reveals that Accounting Standards setting in developing countries like Nigeria mostly mirrored the dictates of either the IASs issued by the defunct International Accounting Standards Committee (IASC) or the US GAAP.

Despite these threats/shortcomings facing reporting jurisdictions in developing countries in Africa, the attractive features of adopting IFRS such as enlarged accessibility to international Stock Exchanges for capital mobilization, the high tendencies of enlistment in international Capital Markets due to global acceptability of IFRS based Financial Statements, increased chances of commendable FDI inflows and the boost in the confidence of local and foreign investors on the investment environment of developing countries appear to overshadow the challenges earlier observed. Before

the adoption of IFRS in Nigeria on 1<sup>st</sup> January 2012 (being its transition date) with 31<sup>st</sup> December 2012 serving as the country's first reporting date of IFRS based Financial Statements, Edogbanya and Kamardin (2016) observed that the Company and Allied Matter Act (CAMA) 1990 was the legal and regulatory framework for accounting practice in Nigeria in respect of the preparation of the financial report. Aside from prescribed format and content of what a company's Financial Statement disclosures entail, it required that the Financial Statements of all corporate organizations comply with and adhere to Nigeria's old generally accepted accounting principles (GAAP), the Statement of Accounting Standards (SAS) which was then issued from time to time by the defunct Nigerian Accounting Standard Board (NASB) (Edogbanya & Kamardin, 2016). It could be recalled that the NASB came into being on September 9, 1982, as an independent body responsible for the development and issuance of Statement of Accounting Standards (SASs) for users and preparers of Financial Statements, Investors, commercial entities and regulatory agencies of the government. However, Madawaki (2012) recounted that the formal creation and establishment of NASB as an Inspectorate Unit through an Act of the National Assembly (NASB Act) became a reality in 2003.

With the campaign for the formal adoption of IFRS in Nigeria launched in September 2010 via a road map by the then Minister of Commerce and Industry, just a few months after the replacement of NASB with the Financial Reporting Council (FRC) of Nigeria (a new regulatory body for financial reporting practices and Standards' setting in Nigeria) through the FRCN Act of 2010, formal adoption and compliance by all the first tier companies of public interest listed on the floor Nigerian Stock Exchange (NSE) became inevitable with effect from January 1<sup>st</sup>, 2012. The year 2013 was set out in the roadmap as the deadline for companies of non-first tier category while 2014 became the peak target period for the adoption of its equivalent (IFRS for SMEs) for all Small and Medium-scale Enterprises (SMEs) in Nigeria (Owolabi & Iyoha, 2012). As at the end of 2019 reporting year, Nigerian corporate entities have mandatorily complied with IFRS disclosure guidelines in the preparation of its Financial Statements for eight (8) years (January 1<sup>st</sup>, 2012 – December 31<sup>st</sup>, 2019).

#### **2.4 Ghana and IFRS Compliance**

The Ghana National Accounting Standards Board (GNASB) was established by the Institute of Chartered Accountants of Ghana (ICAG), a professional Accounting regulatory body set up in 1963 by Act 170 of Parliament to develop, adopt, and publish Accounting Standards and to promote their acceptance. Despite been viewed as the yardstick for the existence of formal accounting in Ghana, it must be understood that the main legal framework for financial reporting and auditing for both private and public companies in Ghana is the Companies' Code of 1963 (Act 179) (Oheneba, Muhammad & Kamran, 2011). According to World Bank (2004), the Code does not deal with preparing Financial Statements under prescribed Standards such as IASs or Ghana National Accounting Standards even as some accounting requirements prescribed by the Code are incompatible with International Accounting Standards.

Before the adoption of IFRS in the country, Ghana financial reporting activities were duly regulated by relevant agencies established by law. The Securities Exchange Commission Ghana (SECG) and the Ghana Stock Exchange regulates financial reporting of all listed companies in Ghana in line with SECG financial reporting requirements, Bank of Ghana regulates financial reporting of listed banks and non-banking financial institutions in line with the Banking Law 1989 and Financial Institutions (Non-Banking) Law of 1993, the National Insurance Commission of Ghana regulates the financial reporting practices of insurance companies under the Insurance Law (1989) while the Unit Trust and Mutual Funds Regulations of 2001 regulated financial reporting of unit trusts and mutual funds in Ghana (World Bank, 2004).

Despite inconsistencies with the requirements of the Companies Code and the Listing Regulations, the Banking Law and Financial Institutions (non-banking) Law, aside from the Manual of Accounting for Banks and the Manual on Auditing of Banks, did not refer to the Standards to be applied by banks and other non-banking financial institutions in Ghana in the preparation of Financial Statements. The Listings Regulations equally had no requirements on which Standards listed companies in Ghana are expected to follow in the preparation and audit of annual Financial Statements. While Financial Statements of Insurers must comply with the requirements of the Insurance Law, the applicable accounting standards to be followed were not specified ((World Bank, 2004).

In 2007, precisely on January 1<sup>st</sup>, Ghana adopted and fully required the use of the International Financial Reporting Standards (IFRS) as the country's new national GAAP for corporate financial reporting. Inusah and Dwommor (2017) noted that the adoption of IFRS in Ghana was not only premised on the foreseen benefits of IFRS but also in response to the March 2006 recommendations of the Reports on Standards and Codes (ROSC) as issued by the World Bank. Oheneba, Muhammad and Kamran, (2011) lend a voice to this stressing that the International Federation of Accountants (IFAC) which Ghana is a member country, had also championed the implementations of IFRS, making it mandatory in 2005 for member nations to adopt.

Oheneba, Muhammad and Kamran, (2011) noted in their study that until the adoption of IFRS in Ghana, there was no equivalent Ghanaian National Accounting Standard (GNAS) for the following: IAS 19- Employee Benefit, IAS 32- Financial Instruments, Disclosure and Presentation, IAS 33- Earnings Per Share, IAS 34- Interim Financial Reporting, IAS 35- Discontinuing Operation, IAS 36- Impairment of Assets, IAS 37- Provision, Contingent Liabilities and Contingent Assets, IAS 38- Intangible Assets, IAS 39- Financial Instruments, Recognition and Measurement, and IAS 41- Agriculture. They argued that the GAS was outdated from inception since the ICAG had no clear legal mandate to set national Accounting Standards except Auditing Standards which later resulted in the formation of National Auditing Standards (NAS).

However, a 2014 World Bank Report on Observance of Standards and Codes in Ghana had revealed that some entities in Ghana, especially the Medium-sized firms, still maintained and prepared their financial reports in line with the guidelines of Ghana National Accountancy Standards (GNAS) instead of IFRS and/or IFRS for SMEs. This clearly shows that as of 2014, non-full mandatory compliance by some entities in Ghana

to IFRS and the IFRS for SMEs disclosure requirements was genuine and a challenge. Inusah and Dwommor (2017) in a study conducted also confirmed this stating that 7 years after the adoption of IFRS in Ghana (2007 – 2014), firms in Ghana as a nation were still facing some imminent challenges in achieving full compliance with IFRS in their annual financial reports preparation and presentations. It is worthy to note that before the adoption of IFRS in Ghana, the Ghana National Accounting Standards (GNAS) issued by the Ghana National Accounting Standard Board (GNASB) which was also a non-up-to-date reflection of guidelines of IASC's International Accounting Standards (IASs), was used (Abedan, Omane-Antwi & Oppong, 2016). As at 2019 reporting year, Ghana corporate entities have complied with IFRS disclosure guidelines in the preparation of its Financial Statements for thirteen (13) years (January 1<sup>st</sup>, 2007 – December 31<sup>st</sup>, 2019). Although World Bank Report of 2014 noted that the nature of compliance to IFRS in Ghana as at 2014 was not full compliance due to some entities' preference for the country's local Standard (GNAS), the country's regulatory body- GNASB had scheduled December 2015 as the deadline for the full adoption of IFRS by all Ghanaian companies during financial reporting.

### **2.5 Faithful Representation versus Transparency during Financial Reporting**

Faithful representation is the second fundamental quality that makes accounting information useful for decision-making (Beest, Braam & Boelens, 2009). It depicts a situation whereby the numbers and descriptions are seen to represent what existed or financial event that happened during a given period. Thus, by faithful representation, the accounting numbers and descriptions are believed to agree with the resources or events that these numbers and descriptions purport to represent (IFRS, 2018).

As a means of fostering accountability towards achieving faithful representation during financial reporting, Lepădatu and Pîrnău (2009) defined transparency as the principle of creating an environment where information on existing condition, decision and action are made accessible, visible, and understandable to all market participants.

Accordingly, transparency as a qualitative characteristic of a good financial reporting system compels institutions and/or organisations, Managers, Accountants, active Stakeholders and other managerial employees of corporate organisations to acknowledge its uphold in entities as a responsibility and requisite towards justifying the faithful representation status of various corporate decisions and actions during a business year. This is more as faithful representation is considered a necessity in a corporate environment since some users of accounting information neither the time nor the expertise to evaluate the factual content of financial information presented in terms of its *completeness* (ensuring that all information necessary for faithful representation is provided), *neutrality* (ensuring that bias approaches are not employed in selecting information in favour of a given group of interest parties over another) and *free from material error* (the effort to keep financial reports free from error can only be achieved through multiple checking/verification of financial records presented). (Beest, Braam & Boelens, 2009).

On the long run, financial reporting practice that is full disclosure compliant is considered beneficial though some problems may be encountered in the short term. This opinion was also upheld by Lepădatu and Pîrnău (2009) who believed that the cost of the absence of transparency in the financial system of any corporate enterprises is ultimately higher than the cost of such enterprise being transparent in its financial reporting practices. MacCarthy (2017) stressed that whenever the Financial Statement is manipulated, such action creates disagreement between a company's financial performance and its related non-financial measures. Indeed, persuasive, enticing but incomplete and dishonest financial disclosures could be very costly and devastating in the long run. Statistics have shown that this cost US businesses about US\$600 billion annually (Wenfei, 2015). In Nigeria, the private and public sectors as of 2015 were believed to have lost over N3 trillion through such fraudulent means (Nwoye & Okoye, 2018).

MacCarthy (2017) noted that linkage could be established between the prevalence of financial distress among corporate organisations and their consequent indulgence in acts of fraudulent financial reporting. To Mohammadi and Nezhad (2015), the financial crisis witnessed between 1997 and 2000 at the global market, especially the likes of black September in 1997, the ENRON financial scandals in the United States and other European and American corporate scandals of 2000 led to the uproar for transparency and faithful representation in financial reporting process across the globe.

Issues prompting the dire need for transparency among listed public companies in Nigeria have also been observed. Right from 2002 – 2006 when Cadbury Nigeria Plc. was indicted for financial scandal to the time of financial distress in the Nigeria banking sector through 2008 to 2019. Edogbanya and Kamardin (2016) reported that the result has been the inclusion of transparency in Securities and Exchange Commission (SEC) of Nigeria's framework of best practice in 2011.

This implies that commendable and ethical observances of transparency and faithful representation practices in corporate organisations, no doubt, improve the economic decision of other agents in and outside the organization, and thus considered a necessity in corporate enterprises for the concept of accountability to thrive meaningfully with little or no managerial obstruction. Mohammadi and Nezhad (2015) lean strongly on the above view contending that transparency is one of the most important qualitative characteristics or factors influencing companies' attractiveness to Investors.

Though transparency and faithful representation do not change the nature of risks inherent in financial reporting systems (Lepădatu & Pîrnău, 2009) of public listed entities, it observance during financial reporting by corporate organisations could help reduce the risk of financial distress and bankruptcy among corporate enterprises to the barest minimum. To this end, Edogbanya and Kamardin, (2016) argued on that corporate transparency is highly associated with corporate performance and company with better corporate governance have a very high standard of disclosure of material fact and transparency of the firm.

## 2.6 Theoretical Framework

### 2.6.1 The B & B Model

The consequences of non-transparent or poor financial disclosure are experienced in everyday life but often without making the necessary connections to their causes.

This study thus adopted and considered the relative performance of two competing models and financial ratios- the Benford's law and the Beneish Predictive ratios herein referred to as the B & B models.

#### 2.6.1.1 Benford's Law

The story of Benford's Law, also known as the first-digit law, began in 1881 when the American astronomer Simon Newcomb noticed that books of logarithm table always seemed grubby on the early pages and clean towards the back/end pages (Asllani & Naco, 2014).

Frank Benford, a Physicist, In 1938, discovered that the digits of naturally-occurring numbers such as death rates, areas drained by rivers, populations of cities, and many other phenomena are distributed in a predictable non-uniform manner such that if one were to examine the leading or first digit of a large set of such data, the number '1' would appear in about 30.1 per cent of the cases; '2' would appear in about 17.6 per cent; '3' would appear in about 12.5 per cent and so on in decreasing fashion. The number '9' would occur in only about 4.6 per cent of the cases (Asllani & Naco, 2014).

To apply Benford's Law, therefore, an Accountant must count the number of times a 1 appears as the lead digit in the data values, the number of times a 2 appears, etc., and then examine the resulting frequency distribution. The distribution is believed to be "natural" when it follows Benford's distribution, otherwise, suspicion becomes the case. In using Benford's Law, one must start with measuring deviation. The deviation of the distribution of digits between what is observed and what is expected in many ways. One method is the Chi-Square test, a standard statistical test for measuring the degree of similarity between elements in a table (Tota, Aliaj & Lamcja, 2016).

The probability that a number has any particular non-zero first digit is:

$$P(d) = \text{Log}_{10} (1+1/d)$$

$$\text{First Digits numbers: } (D_1 = d_1) = \text{Log} (1+1/d_1); d_1 = (1,2,3...9)$$

$$\text{The second digit number: } (D_2 = d_2) = \text{Log}(1+(1/d_1d_2)); d_2 = (1,2,3,..0).$$

$$\text{First Two Digit numbers: } (D_1D_2 = d_1d_2) = \text{Log}(1+(1/d_1d_2))$$

$$(D_1 = d_2 / D_1 = d_2) = \text{Log}(1+(1/d_1d_2)) / \text{Log}(1+(1/d_1))$$

Where:

D = number of 1,2,3...9,

P = probability

D<sub>1</sub> = first digit of a number

D<sub>2</sub> = second digit of a number

### **Benchmark:**

Benford Expected Frequency > Observed Frequency = Reasonable digit Transparency exists in disclosed financial data, otherwise Questionable digit Transparency is the case.

This principle is most suitable for timely spotting of irregularities in Financial Statements by Internal Auditors, Forensic Accountants, and External Auditors as well as discrete exposure of possible disclosure errors, financial disclosures alterations or other anomalies in revenue/turnover, accounts payable, fixed asset values, employee expenses, income tax forms, claims payments and other disbursements.

### **2.6.2.2 The Beneish Model**

These essential financial ratios were first developed in 1997 as 5-factored variables by Professor Beneish but later upgraded to 8-predictive variables in 1999 (Beneish, 1999; Nwoye, Okoye & Oraka, 2013), to enable professional Accountants in Academics and the industries strengthen their quest to detect and deter fraud and earnings manipulation in the Financial Statements of corporate organizations.

Unique as they appear, the 8 variables can be used individually as predictive and detective tools and collectively as a complete model towards obtaining a score known as M-Score. The output of this M-score is usually weighed against a general benchmark - 2.22 towards understanding whether a company has creatively produced the revenue reported in the Financial Statements or not.

However, the individual 8 predictive variables are not without their scores or benchmark that could readily help any concerned professional Accountant or Accounting Academics predict number anomalies tendencies of a company based on the outcome of its current year performance as depicted in her published Financial Statement.

Based on an eight-factor model that gives a score:

**M Score** =  $-4.840 + 0.920 \times DSRI + 0.528 \times GMI + 0.404 \times AQ + 0.892 \times SGI + 0.115 \times DEPI - 0.172 \times SGAI - 0.327 \times LVGI + 4.697 \times TATA$

- a) *Days Receivable Index (DSRI)* =  $(\text{Net Receivables}_t / \text{Sales}_t) / \text{Net Receivables}_{t-1} / \text{Sales}_{t-1}$ .
- b) *Gross Margin Index (GMI)* =  $[(\text{Sales}_{t-1} - \text{COGS}_{t-1}) / \text{Sales}_{t-1}] / [(\text{Sales}_t - \text{COGS}_t) / \text{Sales}_t]$ .
- c) *Asset Quality Index (AQI)* =  $[1 - (\text{Current Assets}_t + \text{PP\&E}_t + \text{Securities}_t) / \text{Total Assets}_t] / [1 - ((\text{Current Assets}_{t-1} + \text{PP\&E}_{t-1} + \text{Securities}_{t-1}) / \text{Total Assets}_{t-1})]$
- d) *Sales Growth Index (SGI)* =  $\text{Sales}_t / \text{Sales}_{t-1}$ .
- e) *Depreciation Index (DEPI)* =  $(\text{Depreciation}_{t-1} / (\text{PP\&E}_{t-1} + \text{Depreciation}_{t-1})) / (\text{Depreciation}_t / (\text{PP\&E}_t + \text{Depreciation}_t))$ .
- f) *SG&A Expense Index (SGAI)* =  $(\text{SG\&A Expense}_t / \text{Sales}_t) / (\text{SG\&A Expense}_{t-1} / \text{Sales}_{t-1})$ .
- g) *Leverage index (LVGI)* =  $[(\text{Current Liabilities}_t + \text{Total Long Term Debt}_t) / \text{Total Assets}_t] / [(\text{Current Liabilities}_{t-1} + \text{Total Long Term Debt}_{t-1}) / \text{Total Assets}_{t-1}]$ .
- h) *Total Accruals to Total Assets (TATA)* =  $(\text{Income from Continuing Operations}_t - \text{Cash Flows from Operations}_t) / \text{Total Assets}_t$ .

**Benchmarks:**

- i. *General Rule: MScore > -2.22 (that is, negative Nos. smaller than -2.22 or any positive Nos.) = tendencies of unfaithful representation exist. MScore < -2.22 (that is, negative Nos. higher than -2.22) = tendencies of faithful representation level exist.*
- ii. *DSRI > 1.465 = Possible inflation of revenue data, long stretching of credit collection period to boost more turnover to recognize revenue earlier enough in the current year's financial record even though cash for the said sales is recoverable the following year. ( $\leq 1.031$  as no financial data falsification region).*
- iii. *GMI > 1.193 = Signifies that Gross margin of the company is deteriorating and the company is more likely to take to financial data alteration measures to maintain confidence in her shareholders and the investors ( $\leq 1.014$  as no financial data falsification region).*
- iv. *AQI > 1.254 = Tendencies of capitalizing and deferring costs that should have been expensed. ( $\leq 1.039$  as no financial data falsification region)*
- v. *SFI > 1.607 = firms under possible pressure to alter figures in her favour to keep up appearance in the competitive market ( $\leq 1.134$  as no financial data falsification region).*
- vi. *TATA > 0.031 = Accruals possibly used to engage in financial data alteration. ( $\leq 0.018$  as no financial data falsification region).*
- vii. *DEPI > 1.077 = Tendencies of Assets being depreciated at a slower rate of depreciation to boost earnings. Thus, the company could be making changes in her accounting policies by embracing revenue friendly depreciation policies ( $< 1.001$  as no financial data falsification region).*
- viii. *SGAI  $\geq 1.041$  = Company pushed into possible financial data manipulation to defer costs and expenses and consequently improve her profitability picture. ( $< 1.001$  as no financial data falsification region).*
- ix. *LVGI > 1.111 = Reflecting pictures of Increase in leverage. An increase in the indicator subjects a firm to a greater risk of violating debt covenants and engages in creative accounting activities in other to avoid a breach. ( $< 1.037$  as no financial data falsification region).*

Upon proper application of the Benford's Law and the discovery of possible distortions in the financial disclosures of the company, further investigation should be made on the affected financial disclosures by deploying effective anti-financial disclosures manipulation models like the Beneish Predictive model to pinpoint key sensitive probable areas in the company's accounting system that might have been subjected to possible manipulation.

Although the Bedford's Law maintains the sole emphasis on ascertaining the integrity of frequency distribution of digits of IFRS financial disclosures, the Beneish Model has the capacity not only to assess the faithful representation status of amounts disclosed in these companies Financial Statements but equally points to areas or classifications in the Financial Statements that may have been unfaithful disclosed or represented in the financial reports evaluated.

Given these, the study anchored firmly on both models herein represented as the B & B Model with Beneish Model serving as a complement to the application of the Bedford's Law during audit trail performance and forensic investigation.

## **2.7. Prior Studies**

Auwalu (2015) investigated the impact of international financial reporting standards on financial reporting quality among Nigerian listed companies. They found that there is a positive relationship between less-earnings management and financial reporting quality as a result of the adoption of IFRS. Although the conduct of empirical research that could have evaluated analytically, the value relevance of disclosed figures of IFRS Financial Statements of undisclosed listed Nigerian companies was enabled in the study, the researcher ended up producing sensitive findings based on extant reviews.

Palea (2013) in his extant review study equally found out that adopting IAS/IFRS improves the quality of financial reporting and increases its usefulness to investors. Afiangbe, Eromonsele and Okoh (2017) also reported that full compliance of 10 Oil and Gas listed public listed companies in Nigeria (as at 2014 for the years 2010 – 2014) with disclosure requirements of various accounting standards recommended and issued for adoption in the Oil and Gas sector was found to improve the disclosure quality although at different levels of significance.

Agyei-Mensah (2013) who comparatively looked into the quality of pre (2006 financial year) and post (2008 financial year) IFRS financial reports in Ghana, discovered that the quality of financial reports has improved significantly in Ghana after the adoption of IFRSs. Boateng, Arhin, and Afful (2014) in their research which exploratory assessed eighteen (18) professional Accountants study revealed that IFRS improved the access of local companies to international markets. It was also observed that the local firms in Ghana gained more credibility, transparency, acceptance and consolidation following its adoption.

Umobong and Akani (2015) adopted a rather investigative approach to their research. After examining the Financial Statements of 4 listed Cement manufacturing firms and 7 listed Breweries companies, a total of 11 listed cement and breweries manufacturing companies, for the years 2009 -2013, revealed that earnings management has not declined after IFRS was adopted. They, however, noted that data from the post-IFRS period was too small to have shown any expected results.

Mehta and Bhavani (2017) chose to embrace a more robust approach than Umobong and Akani. Adopting the Beneish Model, Benford's law and the Altman Z-Score model jointly in the evaluation of Toshiba, Japan's financial reports for the years 2008 – 2014, they discovered that the Beneish model, Altman Z-score model and the Benford's Law were extremely useful in detecting fraudulent financial statements published by Toshiba, but that is only when the outcome of the three Financial ratios are judgmentally evaluated.

Although Aris (2016) in his empirical assessment of PT Pertamina (Indonesia)'s 2010 – 2015 financial reports found out that Benford's law and the Beneish model's score were biased such that the two digital analytical ratios were deployed as tools in predicting the risk of bankruptcy instead of material misstatements. Das (2017) while using Benford's law first, second, and first two digits analysis frame found out after examining financial accounting data of 34,346 firm years of selected Indian companies that Benford's law test is useful in the hands of Auditors to unveil data anomalies before auditing. The investigative research findings of Tota, Aliaj and Lamçja (2016) on accounting data of some Albanian cases also concur to this indicating that Benford's Law can help to detect cases where fictional numbers are involved or at least can be used as a signal to audit.

Aris, Othman, Arif, Abdul Malek and Omar (2013) also made a similar discovery as those of Mehta and Bhavani (2017) in their extant review study. According to their findings, joint use of Benford's Law and Beneish Model techniques will allow users of accounting data assist Auditors and Investigators in finding anomalies which can be translated into fraud occurrences by organisations. The study, however, failed to experiment with their views empirically.

### **2.8 Gap in the Literature**

Evidence from the above empirical reviews shows that majority of these studies concentrated their research effort on the effect or impact of IFRS on disclosure quality or Financial Statements quality with little effort made at ascertaining whether the transparency status of public companies' Financial Statements in Nigeria and Ghana has improved since their adoption and implementation of IFRS.

A few others such as Mehta and Bhavani (2017), Aris, Othman, Arif, Abdul Malek and Omar (2013), Tota, Aliaj and Lamçja (2016), Aris (2016), MacCarthy (2017) and Das (2017) who either adopted the Benford's Law, Altman model or the Beneish Model or jointly applied a combination of any two of these three models, ended up concentrating their investigative effort on financial records other than IFRS Financial Statements. More sensitive is the fact that a number of these studies who adopted two models for their investigation purpose eventually ended up anchoring their findings on one model. Also, it has been observed that some existing studies often fail to establish realistic bases for the adoption and joint application of more than one model in their research investigations. It is against this backdrop that this study is envisaged to deploy both models in such a way that the strength of one model complements the weakness of the other model most effectively.

### **3. METHODOLOGY**

The Casual Comparative research design also known as the Ex-Post Facto research design was adopted in this study. This is because, casual comparative research design permits the study of event of interest that has naturally occurred or was already manipulated earlier during its occurrence amidst no existent vacuum for manipulation of public-accessible post-event data by interest parties, Users or Researchers.

Nigeria and Ghana, both from West Africa, served as the area of study. Coincidentally, both countries were the very first two countries in West Africa to adopt IFRS as a replacement to its existing local Standards (Ghana National Accounting Standards and the Statement of Accounting Standards in Nigeria) though Sierra Leone had permitted IFRS for SMEs in 2009 amidst provisional conditions for public companies' application of full IFRS. The choice of area of study is to enable the research to achieve a more robust result towards appreciating the extent of transparency obtainable in cross-border IFRS financial reporting practices among countries in Africa. As a result, the IFRS financial reports of forty-four (44) public listed manufacturing companies (22 manufacturing companies each from Nigeria and Ghana) were evaluated in this study. Emphasis was on both countries first set of IFRS Financial Statements in five (5) years from the time of IFRS adoption (1<sup>st</sup> January 2007 in Ghana and 1<sup>st</sup> January 2012 in Nigeria). Thus, IFRS compliant Annual reports for the years 2007 – 2011 (*Ghana*) and 2012 – 2016 (*Nigeria*) were duly employed for the B & B model.

Outcomes of the model analyses were subjected to a further test of the Chi-Square, Multiple Regression and Mann Whitney U test statistical tools using the Minitab version 16 and SPSS version 22 statistical software. Unfaithful Representations served as a proxy for Reasonable Transparency (the dependent variable) while the Benford's Law 9 digits and the Beneish Model 8 Predictive Ratios were proxies for the independent variable (B & B Model).

#### 4. DATA ANALYSIS, RESULTS AND DISCUSSIONS

##### 4.1 Hypothesis One

H<sub>1</sub>: Benford's Law is not effective in evaluating the faithful representational quality of financial disclosures of Nigerian and Ghanaian publicly listed manufacturing companies.

Given below is the outcome of the analysis carried out:

Nigeria		
N		320.606
DF		21
Chi-Sq		218.377
P-Value		0.000
Ghana		
N		254.343
DF		21
Chi-Sq		85.5325
P-Value		0.000

Source: Minitab Version 16

##### 4.1.1 Discussion and Interpretation

Chi-square table above indicates that p-value (0.000) of the test conducted on Benford's law distribution frequency of IFRS financial disclosures of twenty-two (22) manufacturing companies studied each in Nigeria and Ghana is statistically significant ( $p < 0.05$ ) for both countries.

Also, Chi-square calculated values ( $X^2_{cal}$ ) of 218.377 for Nigeria and 85.5325 for Ghana are both greater than the Chi-square table value ( $X^2_{tab}$ ) of 32.70 (looking up the degree of freedom 21 against 0.05 per cent significant level in Chi-square table).

#### **4.1.1.1 Decision**

Given the decision rule- *accept alternate hypothesis if  $X^2_{cal}$  is greater ( $>$ )  $X^2_{tab}$  otherwise reject, and accept the null hypothesis*, we accept the alternate hypothesis since the  $X^2_{cal}$  (218.377 for Nigeria and 85.5325 for Ghana) are greater than  $X^2_{tab}$  (32.70). This means that Benford's Law is effective in evaluating the faithful representation quality of financial disclosures of Nigerian and Ghanaian public listed manufacturing companies.

A further closer look at the outcome of Benford's law analyses revealed that out of 198 *individual observations* (396 observations in all) made from five years IFRS Financial Statements of selected manufacturing companies in Nigeria and Ghana using Benford's law model, 90 and 82 tendencies of “questionable digit transparency” of first digits to IFRS financial disclosures were observed while 108 and 116 situations of “reasonable digit transparency” were confirmed in both countries studied.

For while digits 3, 1, 5, 8, 6, 2, 4, and 9 as first digits of financial disclosures made in the IFRS Financial Statements evaluated all recorded higher tendencies of questionable digit disclosures in Nigeria, digits 1, 2, 3, 4, 5, 8, 7, 6 and 9 signalled higher tendencies of questionable digit disclosures among selected Ghanaian manufacturing companies studied.

This also goes to show that, although more financial disclosures of IFRS Financial Statements of manufacturing companies in Nigeria and Ghana portrayed tendencies of reasonable digit transparency during the years covered in their respective IFRS reporting regimes, effort must be intensified by professional Accountants, External Auditors, Forensic Accountants, Analysts, and Anti Financial Crime Regulatory Agencies at ensuring that tendencies of questionable disclosures in the IFRS Financial Statements of manufacturing companies in both countries do not exceed 5% risk level.

#### **4.2 Hypothesis Two**

H<sub>1</sub>: Benford's law digital analyses implications in the post IFRS reporting periods of Nigeria and Ghana do not differ significantly.

The result below is a clear representation of the analysis carried out:

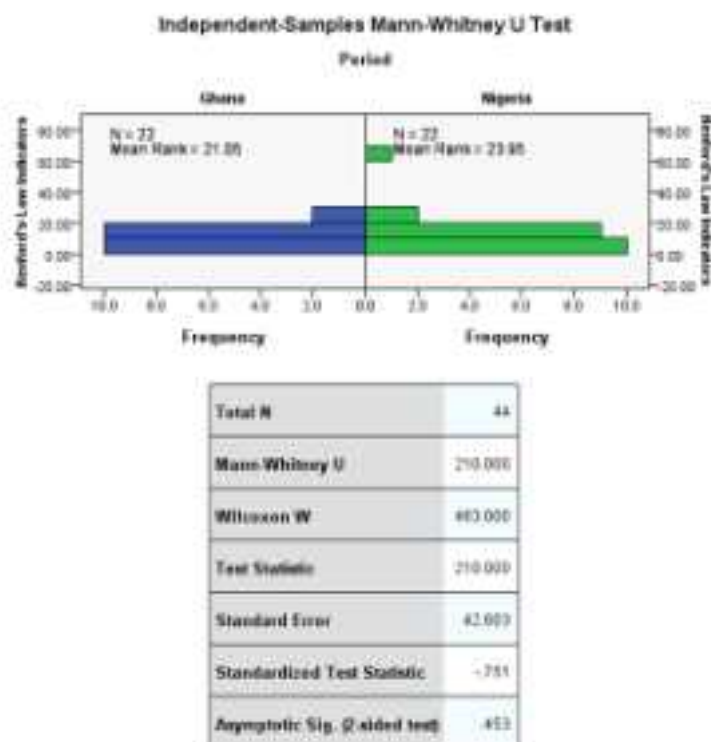


Figure 1: Mann Whitney U test result to hypothesis six

The above chart and figure 1 shows that the probability value (p-value) = .453 is greater than 0.05. Besides, the Mean Rank for both countries does not differ significantly. Nigeria ranked 23.95 while that of Ghana was 21.05.

#### 4.2.1 Discussion and Interpretation

The outcome of the above analysis shows that the implications of the Benford's law digital analyses conducted on the financial disclosures of post-IFRS reporting regimes of Nigeria and Ghana do not differ significantly. This is confirmed in the Mean Score Ranks of both countries where Nigeria ranked 23.95 and Ghana 21.05 (approximately 13.8% difference in the deviation observed in both countries' IFRS financial disclosures frequency distribution for the years 2007–2011 in Ghana and 2012–2016 in Nigeria).

This was further confirmed where the Mean Absolute Deviation (MAD), obtained through the Benford's Law analyses indicates that out of 198 individual/separate observations in both countries, higher deviation outcomes were recorded in Nigeria (90 tendencies observed) implying higher tendencies of a human intervention/possible financial disclosures manipulation in the assessed IFRS Financial Statements of selected Nigerian manufacturing companies than obtainable among Ghanaian manufacturing companies studied where 82 of similar tendencies were recorded.

This resolve was also based on the belief that the higher the MAD value obtained, the larger the difference between the actual and expected values, thus pointing to higher chances of unfaithful representation of financial disclosures in Financial Statement(s). Moreso, these observed deviations equally signal the fact that affected financial disclosures in the selected IFRS Financial Statements of Nigeria and Ghana are not naturally occurring due to their failure to follow and/or their overall non-conformity to Bedford’s Law distribution in the first digit test.

Notwithstanding these fears, evidence Benford's Law investigations show that only 45.4% and 41.4% of such financial disclosures were red-flagged in Nigeria and Ghana respectively. This implies that the level of good corporate governance upheld in both countries by its selected manufacturing companies during IFRS Financial Statements preparation and presentation is above 51%. Though this is considered an attractive feat in some quarters, prevalence of bad corporate governance practices above 40% is not in itself a haven and should be considered a direct threat to the Capital market, total market capitalization and the economy of the affected nation(s).

### 4.3 Hypothesis Three

H<sub>2</sub>: Beneish Ratios are not relevant complementary evaluative tools in evaluating the faithful representation of IFRS financial disclosures of Nigerian and Ghanaian manufacturing companies.

*The results are shown below:*

Table 3: Model Summary for Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.998 <sup>a</sup>	.996	.993	4.222206534000001

a. Predictors: (Constant), TATA (X8), DEPI (X5), DSRI (X1), AQI (X3), LVGI (X7), SGI(X4), GMI (X2), SGAI(X6)

Table 4: ANOVA<sup>a</sup> for Nigeria

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	52720.724	8	6590.091	369.668	.000 <sup>b</sup>
	Residual	231.751	13	17.827		
	Total	52952.475	21			

a. Dependent Variable: MSCORE (NY)

b. Predictors: (Constant), TATA (X8), DEPI (X5), DSRI (X1), AQI (X3), LVGI (X7), SGI(X4), GMI (X2), SGAI(X6)

Table 5: Model Summary for Ghana

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.867 <sup>a</sup>	.765	.741	2.098583521900000

a. Predictors: (Constant), TATA (R8), AQI (R3), SGI(R4), DSRI(R1), DEPI (R5), SGAI(R6), GMI (R2), LVGI (R7)

Table 6: ANOVA<sup>a</sup> for Ghana

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25620.000	8	3202.05	328.000	.000 <sup>b</sup>
	Residual	98.117	13	7.547		
	Total	25718.117	21			

a. Dependent Variable: MSCORE (GY)

b. Predictors: (Constant), TATA (R8), AQI (R3), SGI(R4), DSRI(R1), DEPI (R5), SGAI(R6), GMI (R2), LVGI (R7)

Pooled result for Nigeria and Ghana is given below:

Table 7: Model Summary for Nigeria and Ghana

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.887 <sup>a</sup>	.833	.796	2.734242919000000

a. Predictors: (Constant), TATA (X8), AQI (X3), SGI(X4), DSRI (X1), DEPI (X5), SGAI(X6), GMI (X2), LVGI (X7)

Table 8: ANOVA<sup>a</sup> for Nigeria and Ghana

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2638902448.000	8	329862806.000	44.122	.000 <sup>b</sup>
	Residual	254.187	34	7.476		
	Total	2638902448.000	42			

a. Dependent Variable: MSCORE (NY)

b. Predictors: (Constant), TATA (X8), AQI (X3), SGI(X4), DSRI (X1), DEPI (X5), SGAI(X6), GMI (X2), LVGI (X7)

#### 4.3.1 Discussion and Interpretation

Results from Tables 3 and 5-Individual model summaries for Nigeria and Ghana indicate that R<sup>2</sup> which measured the overall goodness fit of the regression model for Nigeria and Ghana recorded values of .996 and .765 (adjusted R<sup>2</sup> were .993 and .741 for both countries) attesting to the fit for use capacity of the models in testing this hypothesis. This implies that the independent variables (Day's Sales Receivable Index, Gross Margin Index, Asset Quality Index, Sales Growth Index, Depreciation Index, Selling, General and Administrative Expenses Index, Leverage Index, Total Accruals to Total Asset Index) in the model explained 99.3% and 76.5% variations in the dependent variable (Financial disclosures faithful representation). A look at their respective ANOVA tables (Tables 4 and 6) depicts that the models are statistically significant (p = 0.000 < 0.005).

Pooled result from Table 7- pooled Model summary of Nigeria and Ghana as a single linear regression show that the  $R^2$  recorded values of .833 (adjusted  $R^2$  was .796) equally attests to the fitness of the model for use in this study. The outcome of their relevant ANOVA table (Table 8) also shows that the p-value of .000 in both countries is less than 0.05. This implies that placing absolute reliance on the outcome of the individual and pooled regression models for use is statistically okay.

However, a Chow test was further conducted to help substantiate if the two separate linear regressions for Nigeria and Ghana can truly be represented as one single pooled linear regression as depicted in Tables 7 and 8.

The result of the Chow test is given below:

$$F = [(a-b)p] / [b/(n-2p)]$$
$$F\text{-critical value} = 22.52422068$$

Looking up 34 under 8 in the F-table distribution at 5% significance level, the outcome reveals that F-table value obtained is 2.23. Thus, when *F-critical value* is greater than *F-table value*, the null hypothesis which states that "there is no breakpoint (different data set can be represented as one single linear regression)" is rejected and the alternate hypothesis accepted. This implies that our decision will be based on the individual outcome of Tables 4 and 6 and not on the F-cal indicator of Table 8.

#### 4.3.1.1 Decision

Since calculated F-critical values for Nigeria and Ghana (369.668 and 32.8.000) are greater than the F-table value of 2.23, we reject the null hypothesis and accept the alternate. This means that Beneish Ratios are relevant complement in evaluating the faithful representation of IFRS financial disclosures of Nigerian and Ghanaian manufacturing companies.

We further substantiated the above finding from the faithful representation scores (MScores) outcome of the Beneish model analysis where out of 110 individual observations made in Nigeria and Ghana (220 observations in all), 54 tendencies of unfaithful representation was identified in Nigeria whilst 55 similar observations were made among the twenty-two Ghanaian manufacturing companies studied. On yearly basis, Ghana and Nigeria recorded their highest tendencies of unfaithful representation in IFRS Financial Statements in their very first year of IFRS implementation- 13 out of 22 IFRS Financial Statements presented in the year 2008 in Ghana were red-flagged for manipulation tendencies which rate peaked at 59% while 14 Nigerian manufacturing companies out of 22 companies evaluated had it's 2012 IFRS Financial Statements red-flagged after subjecting its financial disclosures to assessment using the Beneish ratios, thus exposing the country to about 64% manipulation tendencies rate. It should be recalled that even though Ghana had earlier earmarked all its public entities to adopt IFRS for Financial Statement preparation and presentation in 2007, majority of its public listed companies implemented the IFRS disclosure guidelines in the year 2008. Furthermore, Indicators for years 2007, 2009, 2010, and 2011 in Ghana explicitly

revealed that out of 22 IFRS Financial Statements evaluated in each of the affected years, 10, 9, 12 and 11 IFRS Financial Statements were red-flagged for tendencies of unfaithful representation at 45.5%, 41%, 55%, and 50% manipulation tendencies rate respectively. Similarly, in Nigeria, indicators for the years 2013, 2014, 2015, and 2016 showed that out of 22 IFRS Financial Statements evaluated, 8, 10, 12, and 10 IFRS Financial Statements were red-flagged for tendencies of unfaithful representation at 36%, 50%, 55%, and 45.5% manipulation tendencies rate respectively. The above statistics, though alarming, readily calls for effective deployment of result-oriented technical checks models as the B & B Models during interim and final audit conduct as well as the assessment of corporate entities' internal control system quality towards upholding good corporate governance practices during preparation and presentation of financial reports in line IFRS disclosure requirements.

At the Beneish model ratios level, the Asset Quality Index (AQI) made the highest contribution at predicting tendencies of unfaithful representation in the IFRS Financial Statements evaluated in Nigeria and Ghana. This was followed by the Day's Sales Receivable Index (DSRI), Sales General Administrative Expenses Index (SGAI), Growth Margin Index (GMI), and the Sales Growth Index (SGI). All these equally threw up sensitive red flags from the evaluated post-IFRS financial disclosures of the public companies covered in both countries.

## **5. CONCLUSION AND RECOMMENDATIONS**

Because of the findings made in this study, it is pertinent to conclude that a 100% reasonable transparency is not usually attainable in the accounting process of any well-established corporate organization though the commendable and acceptable level of transparency could be upheld. This is probably due to various limitations often encountered by businesses in their effort to maintain a reliable smooth level of operation of the business. And this challenges which differ unevenly across business environments, entities, industries, sectors and countries, if not treated, often threaten the survival or the profit-making abilities of a given business, thus leading to the pursuit of unfaithful representations during financial reporting.

It is therefore recommended that Professional Accountants, Forensic Auditors, and Analysts in Ghana and Nigeria embrace the Benford's law towards reducing questionable financial digit disclosures among its manufacturing companies. It is also recommended that close supervisory/evaluative attention be given by relevant regulatory bodies in Nigeria and Ghana to issues of undue capitalization of costs and expenses that should have been expensed (AQI), exploitative use of earnings friendly depreciation methods (DEPI), undue deferment of costs from loss period when they were duly incurred to profitable latter periods (SGAI), and the earlier recognition of turnover by companies even before it has been earned or the possible inflation of the same (DSRI) to maintain a big performance face in the Capital market.

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## **FAIR VALUE GAINS AND LOSSES AND PERCEPTIONS OF EARNINGS QUALITY: EVIDENCE FROM NIGERIAN DEPOSIT MONEY BANKS.**

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### **ABSTRACT**

*The need to increase the quality of reported earnings in Nigeria has led to many efforts, including the adoption of International Financial Reporting Standards, which introduced fair value measurement for certain assets and liabilities. This study determined whether the perception of investors on the quality of earnings reported by banks is affected by the fair value gains and losses (FVGL) reported in income statements (NI) and other comprehensive income (OCI). The study used cross-sectional research design, and analysed data obtained over the period 2012 to 2016, from thirteen banks in Nigeria. Two hypotheses were tested using ordinary least square (OLS). The result revealed that investors' perception of earnings quality is not associated with the FVGL reported in NI and OCI. We attribute this result to learning curve and preponderance of unsophisticated investors in the Nigerian stock market. The paper recommends regular training and retraining on accounting for financial instruments for preparers and users of financial statements, auditors and regulators.*

**Keywords:** Fair value gains and losses, financial instruments, perceptions of earnings quality, International Financial Reporting Standards

### **1. INTRODUCTION**

All publicly listed firms in Nigeria mandatorily commenced the preparation of financial statements and financial reporting based on the International Financial Reporting Standards (IFRS) on January 1, 2012. The adoption of IFRS was recommended by the

World Bank whose investigations revealed deficiencies in the quality of financial reporting in Nigeria (World Bank, 2004, 2011). One of the prominent and predominant features of IFRS is the application of fair value accounting in the measurement of certain assets and liabilities. The use of fair value as a measurement basis has generated a great deal of controversy that remains unresolved to date. Proponents of fair value accounting argue that it better reflects the underlying economics of the firm, reduces earnings management and improves earnings quality (Ahmed & Takeda, 1995; Barth, 1994; Bhat, 2008; Bischof, Daske, & Gebhardt, 2011; Bratten, Causholli, & Khan, 2012; Eccher, Ramesh, & Thiagarajan, 1996; Goh, Li, Ng, & Owyong, 2015; Song, Thomas & Yi, 2010; Venkatachalam, 1996). On the other hand, opponents contend that fair value accounting results in volatility in earnings, procyclicality in earning, exacerbates managerial opportunism and therefore decreases earnings quality (Benston, 2008; Laux & Leuz, 2009; Ryan, 2008).

In response to the evolution of financial markets and the development of complex financial instruments, the International Accounting Standards Board (IASB) issued IAS 32, IAS 39, IFRS 7, IFRS 9 and IFRS 13 making fair value accounting the main measurement attribute of financial instruments. The use of fair value produces fair value gains and losses (FVGL). Bhat and Ryan (2015) state that FVGL are changes in fair value during periods that are not yet realized through cash received or paid. FVGL is the sum of realized and unrealized gains and losses on financial instruments (Barth, 1994; Venkatachalam, 1996). IFRS 9 and 13 require the FVGL to be reported in Income Statement (NI) and in Other Comprehensive Income (OCI). Reporting FVGL in NI and OCI should have implications for the properties of earnings, and fair value based earnings components could serve as a signal for unobservable managerial effort not fully captured by the traditional historical accounting measures of earnings (Manchiraju, Hamlen, Kross & Suk, 2015).

This study focuses on financial instruments in the banking sector because financial instruments are integral to banks' core operations and risk-management strategies and form substantial components of banks' statement of financial position. Financial instruments are characterized by two primary types of risk, market risk and credit risk requiring managerial discretion in estimating fair values. Managerial discretion in estimating fair values of financial instruments can be used opportunistically with consequences on earnings quality. Indeed several firms have suffered huge losses on their derivative positions causing concern among regulators and investors that firms may be using derivatives for speculative purposes (Manchiraju et al., 2015).

There is a plethora of research on the consequences of fair value accounting on earnings quality (Bratten et al., 2012; Dechow, Myers, and Shakespeare, 2010; Ryan, 2008; Song et al., 2010) but most of the studies focused on settings in which the use of fair value is voluntary and in developed capital markets – USA, Europe, Australia and China. Only a few of the studies examined the effect of fair value measurement on earnings quality. Thus there is scanty research on the impact of fair value measurement of financial instruments on earnings quality using data from deposit money banks (DMBs) in Nigeria.

Nigeria is a country that is plagued by institutional weakness and weakened regulatory enforcement (World Bank, 2004; 2011). The Nigerian stock market is shallow and bereft of large number of information intermediaries (analysts) relative to capital markets in the US and UK. Therefore, it is germane to ascertain what quality of earnings signals is conveyed to the market following the inclusion of FVGL in earnings. The objective of this study is to determine whether investors' perception of earnings quality of Nigerian listed DMBs is associated with FVGL reported in NI and OCI..

Analyses of 65 firm-year observations from a sample of 13 DMBs from 2012 to 2016, revealed that investors' perception of earnings quality of listed DMBs is not associated with the FVGL of financial instruments reported in NI and OCI. The result is of significance to the regulators, standard setters, users and preparers of financial statements. The study provides a more recent assessment of one of the consequences of the adoption of IFRS with respect to financial instrument on earnings quality in an emerging economy. The result should guide the regulators to evolve policies to improve understanding of IFRS and in particular fair value accounting for financial instruments.

The rest of the paper is organized as follows: Section 2 presents a literature review and develops the hypotheses. This is followed by the methodology in Section 3. The empirical findings and discussions are in Section 4 while the conclusion is in Section 5.

## **2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT**

Banks are financial intermediaries, mobilizing funds from the surplus units for onward lending to the deficit units and providing platforms for payments. With increased competition and in the search for higher returns, banks expanded their traditional banking activities into investment banking and trading in securities. This expansion involves financial instruments. Prior to 2012, the defunct Nigerian Accounting Standards Board did not issue any specific accounting standards to regulate financial instruments' recognition and measurement. From January 1, 2012, firms listed on the Nigerian Stock Exchange mandatorily began to report according to IFRS. One of the prominent and predominant features of IFRS is the use of fair values for measurement. IFRS 13 defines fair value as the price at which an asset can be sold or liability paid for or settled between market participants in an orderly transaction at the measurement date. IAS 32 defines financial instrument as any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. Examples of financial instruments according to IAS 32 as cited in Mirza and Holt (2011) include: cash; an equity instrument of another equity; a contractual right to receive cash or another financial asset from another equity or to exchange financial assets or liabilities with another equity under conditions that are potentially favourable to the entity; a contract that may or will be settled in the entity's own equity instrument and is not classified as an equity instrument of the entity; payables, loans from other entities; issued bonds; obligations to deliver own shares worth at a fixed amount of cash.

Proponents of fair value contend that fair value allows firm to better reflect the underlying economics of the firm. It is argued that since fair value utilizes up to date market values it will enhance earnings quality. It is also argued that fair value accounting restricts accounting choices open to managers and therefore would improve earnings

quality. However, opponents of fair value counter the arguments and claim that market inputs might not be available for all financial instruments especially in inactive and inefficient markets thereby necessitating the use of internally generated inputs. This clearly affords managers discretion in choice of inputs which can lead to opportunistic earnings management practices and consequently lower the quality of reported earnings. Fair value accounting is also criticized for amplifying earnings volatility (Hodder, Hopkins and Wahlen, 2006; Maganan, 2009; Sun, Liu, and Cao., 2011). Barth, Landsman, and Wahlen (1995) identified three possible sources of financial statements volatility that are associated with fair values: inherent volatility, estimation error volatility and mixed measurement volatility. Inherent volatility is related to the characteristics of the assets or liabilities being measured. Estimation error volatility results from imperfect measurements because of valuation inputs used. Third, “artificial” source of volatility is mixed-measurement volatility attributable to the mixed measurement model.

The use of fair value for measuring financial instruments produces FVGL. Accounting for financial instruments during the study period is guided by IAS 32, 39, IFRS 7, 9 and 13. IFRS 9 permits a mixed measurement model for financial instruments whereby some financial assets are measured at amortized cost while others are measured at fair value. The choice of the models is based on the business model of the reporting entity and the cash flows characteristics of the financial instrument.

IFRS 13 requires that fair values of financial instruments be measured based on sources of inputs (Fair Value Hierarchy) which are Level 1, Level 2 and Level 3 respectively. At Level 1, the sources of inputs are quoted market prices (unadjusted) in active markets for identical instruments. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis (United Bank for Africa Plc, 2015). For Level 2 measurers, all significant inputs are directly or indirectly observable from market data for similar or identical financial instruments. For Level 3, all the significant fair value inputs are not from observable data but from the entity-specific estimates or entity generated estimates.

It is argued fair values' ability to predict future earnings is constrained in a financial reporting environment. In inactive or inefficient markets, valuation techniques are based predominantly on Level 3 inputs. Song et al. (2010) analyzed the value relevance of fair values (earnings quality) based on the source of inputs used to estimate fair values. They find that fair value assets based on Level 3 fair value hierarchy are priced less than fair value assets which derive their fair value estimates from Level 1 fair value hierarchy.

The accounting standards stipulate that FVGL on financial instruments be reported in NI and in OCI. Financial instruments are measured initially at fair value but subsequent measurement can be either at fair value or amortised cost depending on the classification of the financial instruments. Financial instruments are classified as held-to-maturity (HTM), at fair value through profit or loss (FVTP), and available-for-sale (AFS). HTM financial instruments are financial instruments with fixed determinable payments and

fixed maturities that management has both the positive intent and ability to hold to maturity. HTM is measured at amortised cost but if classified as AFS, it is designated as FVTP and the difference between amortised cost and fair value is accounted for in OCI. Financial instruments classified as FVTP on initial recognition consist of two sub categories, namely: Financial instruments held for trading (HFT) and financial instruments designated at fair value through profit or loss (FVTP). HFT financial instruments are acquired or incurred principally for the purpose of selling in the short-term or as part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent pattern of short-term profit making. All FVGL on HFT financial instruments are recognized in the NI. Generally, AFS financial instruments are those financial instruments that are not designated as HTM or HFT or FVTP and which may be sold in response to needs for liquidity or changes in interest rates, exchange rates or equity prices. Subsequent to initial measurement, AFS financial instruments are carried at fair value and all FVGL are recognized directly in fair value reserve in OCI until the financial instrument is derecognized or impaired. When AFS financial instrument is disposed of, the fair value adjustments accumulated in OCI are recognized in the NI. This study focuses on only financial instruments measured at initial recognition and subsequent to initial recognition at fair value.

FVGL has attracted a great amount of research since it constitutes an important element of bank risk and profitability (Hodder et al, 2006). Furthermore, earnings are oriented towards the interest of shareholders who are an important group of financial statement users (Brown, 1999 as cited in Deegan & Unerman, 2011).

Based on 202 US commercial banks which recognize FVGL on virtually all financial instruments over the period 1996 to 2004, Hodder et al (2006) examined properties of GAAP net income, GAAP comprehensive income, and full fair value income to determine which accounting income measure best reflects firm risk. They found that investors regard the full fair value income as the measure that better reflects a firm's underlying economic risk. This implies that fair value income enhances the earnings quality of the sample firms.

Barth (1994) empirically examined the extent and determinants of the value-relevance of fair values and the returns-relevance of FVGL for financial instruments. The study reported that unrealized securities gains and losses are not priced by the market as a component of earnings. This is at variance with Hodder et al (2006) and the result may be driven by changes in the macro-economic environment of the US in the two distinct sample periods.

Barth, Beaver, and Wolfson (1990) investigated the realized securities gains and losses components of bank earnings and found that the multiple on realized securities gains and losses generally are insignificantly different from zero. They interpret this result as suggesting that the market does not value realized securities gains and losses because they view the realized securities gains and losses as transitory, lacking timeliness and tainted by managerial opportunism.

Using 854 firm-quarters observations from US banks, financial firms and insurance firms for the period 2009 to 2012, Chung, Lobo and Owyong (2017) examined the economic implications of fair value liability gains and losses. They documented a positive relationship between a firm's fair value liability gains and losses and current period stock returns, and a negative association with future returns, suggesting that investors misprice this earnings component.

Kanagaretnam, Mathieu, and Shehata (2009) studied 228 firm-year observations derived from 75 Canadian firms cross listed on the US Stock Exchanges from 1998 to 2003, focusing on the capital market valuation of the change in the balance of unrealized holding gains and losses on available-for-sale securities, the change in the fair value of cash flow hedges, and the change in cumulative foreign currency translation adjustment. They provide evidence that these three items included as components of OCI are significantly associated with price and market returns.

Dhaliwal, Subramanyam, and Trezevant (1999) investigated the predictive ability of NI and OCI using data based on a US sample consisting of 11,425 firm-years and documented that fair value changes in marketable securities improve the association between income and returns.

The effect of FVGL on earnings quality was also studied by Goncharov and Hodgson (2008). They empirically confirmed that unrealized fair value gains (losses) in OCI reduce the level of earnings conservatism. Earnings conservatism is one of the proxies of earnings quality (Francis, LaFond, Olsson & Schipper, 2004).

Soda (2015) hypothesized that banks and companies in Eastern Europe with high proportion of FVGL in the income statement will have lower level of aggregate earnings quality. He provided evidence showing that FVGL is negatively related with aggregate earnings quality for both companies and banks. This suggests that FVGL affects earnings quality negatively. The study by Soda (2015) is closely related to our study. While Soda (2015) examined the effect of FVGL on aggregate earnings quality, the current paper assesses the perception of the investors with respect to the earnings quality following the recognition of FVGL on financial instruments in the NI and OCI. While this study tested the FVGL in both the NI and OCI, Soda (2015) did not. Furthermore while Soda (2015) constructed aggregate earnings quality, this study uses the earnings response coefficient to capture the perception of investors concerning earnings quality.

One of the criticisms of fair value accounting is that it affords managers earnings management opportunities. To this end, Dechow, Myers and Shakespeare (2010) examined fair value and gains from securitization and reported that managers use the discretion inherent in fair value accounting rules to report larger gains thereby influencing the quality of reported earnings.

Prior studies of earnings quality provide evidence that institutional differences affect the properties of earnings (Ball, Robin, and Wu, 2003, La Porta, 1998, Nobes 1998). ***Fiechter and Novotny-Farkas (2017)*** used a global sample of IFRS banks and provided evidence that institutional differences across countries (e.g., information environment or

market sophistication) affect investors' ability to process and impound fair value information in their valuation.

Nigeria is a country that is plagued by institutional weakness, weakened regulatory enforcement and insufficient information intermediaries (World Bank, 2004; 2011). The Nigerian stock market is shallow and bereft of large number of information intermediaries (analysts) relative to exchanges in the US and UK. The country's experience with IFRS is nascent and investors generally are unsophisticated. Accounting for financial instruments generally is more complicated and complex than non-financial instruments and demands expertise. Johnson (2007) provided a survey evidence suggesting that even some auditors appear not to fully understand the application of fair value accounting rules. It follows that financial statement users might likely have difficulty evaluating the reasonableness of reported FVGL especially that of DMBs as the operations of DMBs are highly opaque (Levine, 2004) given the opportunistic behavior of managers. Lipe (2002) reported that FVGL is very confusing to the market because firms report a gain when its financial strength deteriorates and a loss when its financial strength increases. This misinterpretation could be worse for less sophisticated participants. The above submissions lead to the following hypotheses of this study:

- H<sub>1</sub>: Investors' perception of earnings quality of Nigerian listed DMBs is not associated with the FVGL reported in NI.
- H<sub>2</sub>: Investors' perception of earnings quality of Nigerian listed DMBs is not associated with the FVGL reported in OCI.

### **3. METHODOLOGY**

#### **3.1 Data.**

The study obtained price data and market returns from the Nigerian Stock Exchange. FVGL, EPS and corporate governance data are derived from the annual reports of DMBs obtained from the Library of the Nigerian Stock Exchange in Port Harcourt.

#### **3.2 Population and sample.**

The population of this study comprises all the DMBs listed on the Nigerian Stock Exchange between 2012 and 2016. The Fact Book of the Nigerian Stock showed that fifteen DMBs were listed on the Nigerian Stock Exchange at December 31, 2016. Of the fifteen DMBs, two DMBs have incomplete data and were consequently deleted thereby giving a sample of thirteen DMBs that yields 65 firm-year observations.

#### **3.3 Empirical Model.**

This study follows Ghosh and Moon (2005) and Barber, Krishman, and Zhang (2012) who used the earnings response coefficient as a proxy for investors' perception of earnings quality. The study employed the following regressions to analyze whether investors' perception of the earnings quality of the Nigerian listed DMBs is affected by the FVGL of financial instruments.

Accordingly the empirical model is stated in explicit form thus:

$$CAR_{it} = \emptyset_0 + \emptyset_1 EPS_{it} + \emptyset_2 ? EPS_{it} + \emptyset_3 FVGLN_{it} + \emptyset_4 EPS * FVGLN_{it} + \emptyset_5 ? EPS * FVGLN_{it} + \emptyset_6 BETA_{it} + \emptyset_7 SZE_{it} + \emptyset_8 LEV_{it} + \emptyset_9 GROWTH_{it} + \emptyset_{10} RCAD_{it} + \emptyset_{11} AGE_{it} + \emptyset_{12} ACEF_{it} + \hat{a}_i \dots\dots\dots(1)$$

$$CAR_{it} = \emptyset_0 + \emptyset_1 EPS_{it} + \emptyset_2 ? EPS_{it} + \emptyset_3 FVGLC_{it} + \emptyset_4 EPS * FVGLC_{it} + \emptyset_5 ? EPS * FVGLC_{it} + \emptyset_6 BETA_{it} + \emptyset_7 SZE_{it} + \emptyset_8 LEV_{it} + \emptyset_9 GROWTH_{it} + \emptyset_{10} RCAD_{it} + \emptyset_{11} AGE_{it} + \emptyset_{12} ACEF_{it} + \hat{a}_i \dots\dots\dots(2)$$

Where for DMB i at year t:

- CAR = Cumulative abnormal stock return. Based on the market model, CAR is obtained by accumulating abnormal security returns over the 15-month period beginning 12 months prior to the fiscal year-end and ending three months after the end of the fiscal year.
- EPS = Earnings per share as in the financial statements.
- ? EPS = Change in EPS ie EPSt – EPSt-1.
- FVGLN = Fair value gains and losses on financial instruments reported in Income Statement scaled by market value of equity.
- FVGLC = Fair value gains and losses on financial instruments reported in Other Comprehensive Income scaled by market value of equity.
- EPS\*FVGLN = Interaction between EPS and FVGLN.
- ? EPS\*FVGLN = Interaction between ? EPS and FVGLN.
- EPS\*FVGLC = Interaction between EPS and FVGLC.
- ? EPS\*FVGLC = Interaction between ? EPS and FVGLC.
- BETA = Beta. We estimate each DMB’s Beta for each year from the market model using a DBM’s security return data and the return on the NSE equally weighted market portfolio over the 60 months ending three months after the fiscal year end.
- SZE = Size computed as natural logarithm of total assets at fiscal year end
- LEV = Leverage, computed as total liabilities divided by total assets.
- GROWTH = Growth opportunities calculated as change in gross earnings divided by lagged gross earnings.
- RCAD = Total regulatory capital adequacy ratio.
- AGE = Natural logarithm of Age of DMB; age computed as the number of days since the DMB was listed on the Nigerian Stock Exchange .
- ACEF = Index of audit committee effectiveness. Following extant literature on the factors influencing audit committee effectiveness we selected the following characteristics: Audit committee frequency of meeting to proxy diligence, Number of independent directors on the Audit committee to proxy independence, Number of professional accountants on the audit committee to proxy accounting expertise and financial literacy and the number of women on the committee to proxy gender diversity. Each characteristics except independence is scored on a scale of 1 to 4. Independence is scored 1 for each

independent director subject to a maximum of 2. The individual scores of each characteristics are summed up for each DMB and divided by the overall expected total of 14 to obtain the ratio of audit committee effectiveness.

$e_i$  = Error term.  
 $\beta_0, \dots, \beta_{12}$  = Regression parameters.

In the above regressions, the earnings response coefficient (ERC), i.e. the sum of the coefficients of earnings and earnings level changes ( $\beta_1 + \beta_2$ ) is the proxy for markets' perceptions of earnings quality. However, the variable of interest is the sum of coefficient on  $\beta_4 \text{EPS} * \text{FVGLN}_{it} + \beta_5 \text{EPS} * \text{FVGLN}_{it}$  ( $\beta_4 + \beta_5$ ) in Equation (1) and  $\beta_4 \text{EPS} * \text{FVGLC}_{it} + \beta_5 \text{EPS} * \text{FVGLC}_{it}$  ( $\beta_4 + \beta_5$ ) in Equation (2) respectively. If investors perceive earnings quality to be associated with the FVGL in NI and OCI respectively,  $\beta_4 + \beta_5$  in each case is expected to be positive and significantly different from zero.

The paper includes several control variables which prior studies found to be other determinants of ERCs. BETA is used to proxy for the riskiness of earnings and systematic risk and is negatively related to ERC (Collins & Kothari, 1989; Easton & Zmijewski, 1989). Size (SZE) is included to control for political cost. The Political Cost hypothesis holds that large firms are likely to manage earnings to deflect political attention (Han & Wang, 1998; Watts & Zimmerman, 1986). A negative sign is expected.

Leverage (LEV) also captures the riskiness of earnings and is included in the regression to minimize the potential effect of model misspecification. It is documented that firms with high leverage are likely to exploit the accounting rules to avoid debt covenant violation (DeFond & Jiambalvo, 1994). Consistent with Dhaliwal, Lee, and Fargher, (1991), leverage is predicted to have a negative sign with CAR. Collins and Kothari (1989) documented that ERCs are increasing in growth opportunities (GROWTH). Goh et al (2015) provided empirical evidence that capital adequacy influences investors' assessments of banks' reported fair value estimates, justifying the inclusion of capital adequacy ratio in the regressions (RCAD). The inclusion of age (AGE) is informed by evidence that older firms are more likely to be more stable and have less information asymmetry problem leading to a positive association with CAR.

The audit committee oversees financial reporting and prior studies document that the audit committee effectiveness depends on its characteristics which the market values in assessing earnings quality (Carcello & Neal 2003; DeFond, Hann, & Hu, 2005; Krishnan, 2005; Vafeas, 2005). A positive coefficient of audit committee effectiveness (ACEF) suggests the audit committee is effective but a negative sign suggests otherwise.

#### 4. RESULTS AND DISCUSSION

Table 1 reports the descriptive statistics of the variables used in the study, The average cumulative abnormal returns is positive (7.02). The standard deviation of 52.37 suggests high variability in the CAR of the DMBs. The earnings per share ranges from (N0.59) to N4.67 with a mean of N1.35. The negative EPS of N0.59 suggests that some DMBs

incurred losses during the period studied. The mean value of FVGL in the NI is 10% compared to less than 1% reported in OCI. The mean regulatory capital adequacy ratio of 17% suggests most DMBs exceed the minimum of 15% prescribed by the Central Bank of Nigeria and are therefore sound.

**Table 1 Descriptive Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
car	65	7.024696	52.36947	-116.1361	207.2762
Eps	65	1.354	1.231948	-.59	4.67
? eps	65	.4421538	1.762265	-1.92	12.9
fvgl <sub>ln</sub>	65	.1030188	.1949503	-.0787111	1.151359
fvgl <sub>c</sub>	65	.0008296	.0919917	-.5702259	.1960717
Beta	65	1.380593	.7069091	.30503	4.67604
size	65	20.68255	1.695904	13.75115	22.27927
lev	65	.8766688	.104057	.767	1.6375
growth	65	.1920466	.288293	-.64584	1.60079
rcad	65	.1718446	.1441923	-.4698	.809
age	65	8.731296	.6272759	7.8501	9.73365
acef	65	.3519231	.1107994	.125	.5625

Source: Authors’ analyses of annual report data

Table 1 shows a mean of 35% for the audit committee effectiveness of the DMBs suggesting a majority of the audit committees are not effective. That majority of the audit committees are ineffective is in agreement with the submission of prior studies (Chukwu & Nwabochi, 2019; Owolabi & Ogbechi, 2010) that most audit committees in Nigeria neither have the commitment to watch for details in financial reporting nor the skill to design and implement a strong internal control system to prevent poor reporting.

In conducting the study, we performed some regression diagnostics which included a test for outliers, normality, linearity, multicollinearity, homoscedasticity, and serial correlation using Stata 12. Based on the results we transformed the data and reported the regression results based on standard robust errors. We scaled FVGL by market value of equity at fiscal year-end, reported CAR, earnings and earnings changes on per share basis and computed the natural logarithms of total assets for “size”.

Table 2 presents the correlation matrix. Table 2 shows that all the variables except size, leverage and regulatory capital adequacy ratio are positively but insignificantly correlated with CAR. Beta is negatively and significantly correlated with earnings but positively and significantly correlated with FVGL reported in Income Statement. Size exhibits positive correlation with earnings at 5% level of significance thereby providing preliminary support for the political cost hypothesis.

**Table 2 Correlation Matrix**

	car	Eps	Δeps	fvglm	fvglc	Beta	Size	Lev	growth	rcad	age	acrf
car	1											
eps	0.02	1										
Δeps	0.13	0.08	1									
fvglm	0.03	-0.14	-0.11	1								
fvglc	0.15	0.11	0.00	-0.04	1							
beta	0.14	-0.38*	0.02	0.39*	0.04	1						
size	-0.13	0.24*	0.06	0.04	-0.04	-0.05	1					
lev	-0.02	0.08	-0.10	-0.07	-0.04	-0.18	-0.02	1				
growth	0.22	0.12	0.17	-0.12	-0.06	-0.16	0.25*	-0.26*	1			
rcad	-0.14	0.25*	0.09	-0.5*	0.24	-0.5*	0.08	0.01	0.08	1		
age	0.05	0.00	0.12	-0.07	-0.01	-0.12*	0.27	0.02	0.02	-0.05	1	
acrf	-0.21	-0.07	-0.18	0.09	-0.12	-0.05	0.00	-0.05	0.01	-0.19	0.09	1

\*Correlation is significant at 5% level

Regulatory capital adequacy ratio indicates a negative correlation with both FVGL in Income Statement and Beta at 5% level of significance. The significant association in the correlational analysis suggests multicollinearity is a serious concern. However, the values of the variance inflation factor (VIF) as shown in Table 3 indicate multicollinearity poses no threat to the regression results because the values are below the threshold of 10 (Hair, Black, Babin, and Anderson, 2010).

Table 3 reports the results of estimating equation 1 and equation 2. The coefficient of determination (R<sup>2</sup>) is 27% in Model 1 and 28% in Model 2. This shows that the independent variables jointly explain 27% and 28% variation in CAR in Model 1 and Model 2 respectively. The F statistics in Table 4 reveal that the models have excellent fit (p-value = 0.019) for Model 1 and (p-value=0.005) for Model 2.

Table 3 also shows that reported earnings and the earnings level change are different from zero and positively associated with returns (CAR) in Model 1 but the association is not significant (p-value = 0.623 for EPS and 0.918 for ΔEPS). The result is in consonance with prior studies on earnings-return association. The sum of coefficients of earnings and earnings level change (ERC) is 3.250 and insignificant in Model 1 (p-value = 0.696). Though insignificant, the positive direction of ERC shows that investors perceive earnings as informative in their investment decision.

**Table 3 Regression Results**

Variable		Model 1				Model 2			
		Coef	SE	p-value	VIF	coef	SE	p-value	VIF
Eps	$\Psi_1$	2.735	5.537	0.623	1.20	4.027	5.153	0.438	1.17
$\Delta$ eps	$\Psi_2$	.5156	4.967	0.918	2.30	1.304	5.338	0.808	2.40
	$\Psi_1 + \Psi_2$	3.250	10.50	0.696		5.332	10.49	0.562	
Fvglm	$\Psi_3$	-51.56	57.59	0.375	2.97				
eps*fvgln	$\Psi_4$	47.183	58.12	0.421	1.52				
$\Delta$ eps*fvgln	$\Psi_5$	48.447	100.8	0.633	1.45				
	$\Psi_4 + \Psi_5$	95.630	158.97	0.535					
Fvglc						111.4	133.4	0.407	2.98
eps*fvglc						60.26	179.5	0.738	2.03
$\Delta$ eps*fvglc						302.7	615.0	0.625	1.32
Erc						363.03	794.5	0.645	
Beta	$\Psi_6$	21.514	12.68	0.096	2.48	10.50	10.25	0.311	1.84
Size	$\Psi_7$	-9.069	3.510	0.013	1.28	-9.15	3.708	0.017	1.28
Lev	$\Psi_8$	47.519	38.57	0.223	1.18	39.40	36.29	0.283	1.17
Growth	$\Psi_9$	62.752	24.26	0.013	1.28	67.12	24.72	0.009	1.28
Read	$\Psi_{10}$	-50.35	52.48	0.342	1.69	-73.66	54.23	0.180	1.83
Age	$\Psi_{11}$	11.217	11.88	0.350	1.22	8.588	10.83	0.432	1.36
Acef	$\Psi_{12}$	-91.17	76.27	0.237	1.28	-98.77	77.01	0.205	1.26
Constant	$\Psi_{13}$	50.065	115.12	0.665		99.67	106.4	0.354	
No of obs		65				65			
Prob > F		0.0187				0.005			
R-squared		0.2703				0.281			

Source: Results of data analyses

From Table 3, it is revealed that FVGLN is negatively (-51.56) and insignificantly associated with CAR (p-value = 0.375) suggesting that FVGL reported in NI does not provide information incremental to that explained by EPS and  $\Delta$ EPS.

Our interest is the sign and magnitude of the coefficients of EPS\*FVGLN and  $\Delta$ EPS\*FVGLN in Model 1 and EPS\*FVGLC and  $\Delta$ EPS\*FVGLC in Model 2. The coefficients of EPS\*FVGLN and  $\Delta$ EPS\*FVGLN are positive and different from zero (47.183) and (48.447) respectively. The relationship with CAR is statistically insignificant (p-value = 0.421 for  $\Delta$ EPS\*FVGLN and 0.633 for  $\Delta$ EPS\*FVGLN. The sum of the coefficients on  $\Delta$ E\*FVGLN and  $\Delta$ E\*FVGLN (i.e. ERC) in Model 1 is positive and different from zero (95.63) but this is not significant (p-value = 0.535). The result indicates that investors' perception of earnings quality is not associated with the FVGLs reported in income statement. In other words, FVGL reported in income statements do not affect investors' perception of earnings quality reported by DMBs in Nigeria. Thus the result provides support for H1.

The FVGL reported in OCI is positive and different from zero (111.4) but insignificant (p-value = 0.407). Similarly the coefficient on the interactive term E\*FVGLC is positive and different from zero (60.26) and insignificant (p-value = 0.738). In the same fashion, the coefficient on  $\Delta$ E\*FVGLC is positive and different from zero (302.77) and insignificant (p-value = 0.623). The results show that FVGL reported in OCI exhibits

insignificant incremental explanation in variations in returns (CAR). The coefficient of the sum of  $\text{EPS} \cdot \text{FVGLC}$  and  $\beta \cdot \text{EPS} \cdot \text{FVGLC}$ , our proxy for investors' perception of earnings quality (ERC) is positive and different from zero (363.0345) but insignificant (0.6456). This implies that FVGLs on financial instruments reported in OCI do not affect investors' perception of the earnings quality of listed DMBs. In other words, bank investors in Nigeria do not perceive that the earnings quality of listed DMBs is affected by the FVGL on financial instruments reported in OCI. Thus H2 is sustained.

The control variables in Table 3 that indicate statistical significance are beta, size and growth opportunities. Beta is positively and significantly related to CAR in Model 1 (p-value = 0.09) but is not significant in Model 2 (p-value = 0.311). As beta increases by 1%, CAR increases by 215% in Model 1 and by 105% in Model 2. This is inconsistent with the findings of Collins and Kothari (1989). A 1% increase in the size of DMB leads to a 90% decline CAR in both Models and this is at 1% level of significance. This suggests that DMBs are conscious of the political scrutiny their reported earnings; and this is consistent with the Political Cost Hypothesis (Han and Wang, 1998; Watts & Zimmerman, 1986). Growth is positively associated with CAR with p-value < 0.01 in both Models. This confirms the evidence in Collins and Kothari (1989) who documented that ERCs are increasing in growth opportunities.

## **5. CONCLUSION AND RECOMMENDATIONS**

This paper examines whether investors' perception of earnings quality of Nigerian listed DMBs is affected by the FVGL reported in NI and OCI as prescribed by IFRS 9. Evidence shows that investors' perception of earnings quality of Nigerian listed DMBs is not influenced by FVGL reported in NI and OCI. We attribute this result to the learning curve, preponderance of unsophisticated investors, persistent accounting scandals in the Nigerian banking industry occasioned by weak institutional framework which fosters managerial opportunism, insufficient information intermediaries and the shallow stock market. It is possible that with time, consistent with the law of effect theory, the opaque nature of the banking industry will constrain investors to consider all available information in assessing the earning quality of banks in Nigeria. In view of the above findings, it is recommended that training and retraining in respect of accounting for financial instruments be conducted regularly for preparers and users of financial statements, auditors and regulators. The stock market should be deepened and regulators should be strengthened to enforce relevant laws.

A limitation of this study is our proxy for investor perception (ERC). Though ERC is widely used in earnings-return associations, it is considered noisy. Its widespread and long term use as a model for identifying how the market responds differently to the information on earnings, justifies our use of ERC in this study. Another limitation is the relatively small sample size due to data constraints resulting from relatively recent IFRS experience and our focus on a single industry. Further research may use other measures of investors' perception and a wider sample base which may include insurance firms.

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## **EFFECT OF TAX REVENUE ON PUBLIC DEBT AND CAPITAL EXPENDITURE IN NIGERIA**

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### **ABSTRACT**

*The citizens' need for accountability by the governments' continuous receipt of tax revenue without a corresponding reduction in public debt and increase in capital expenditure has raised questions on the effect of tax revenue on public debt and capital expenditure. It is against this background that the study examines the effect of tax revenue on public debt and capital expenditure in Nigeria during the period 1999 - 2018. Secondary data was sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin. It adopted the ordinary least square regression method by E-views program to study the effect of the independent variables (represented by value added tax, company income tax, petroleum profit tax and customs and excise duty) on the dependent variable (external debt, internal debt and capital expenditure). The data treatments used for the times series secondary data are Descriptive Statistics, Unit Root using Augmented Dickey–Fuller; Co- integration tests using Bounds Test and Vector Error Correction Model. The findings revealed that tax revenue had a statistically significant, positive and negative effect of on public debt and capital expenditure. Tax revenue had both positive and negative effects on external debt in Nigeria ( $R^2 = 0.789$ ,  $f = 0.00010$ ,  $p < 0.05$ ); Tax revenue had both positive and negative effects on internal debt in Nigeria ( $R^2 = 0.959$ ,  $f = 0.00000$ ,  $p < 0.05$ ) and Tax revenue had both positive and negative effects on capital expenditure in Nigeria ( $R^2 = 0.692$ ,  $f = 0.00164$ ,  $p < 0.05$ ). The study concluded that tax revenue has effect on public debt and capital expenditure in Nigeria. It was recommended that the government should ensure that revenue gotten from taxes are spent on profitable investments like capital expenditure. Also, to reduce public debt, fiscal authorities should enhance the effectiveness of the tax system by sealing loopholes and enforcing compliance. The government should also look to other sources of income in order to further reduce the burden of public debt.*

**Key words:** Capital Expenditure, Company Income Tax, Customs and Excise Duty, External Debt, Internal Debt, Petroleum Profit Tax, Public Debt, Tax Revenue, Value Added Tax,

### **1. INTRODUCTION**

Government Expenditure has a vital role to play in infrastructural development, economic growth, employment, health and education. This expenditure can be broadly categorized into revenue expenditure and capital expenditure. The government spending is mainly financed by tax revenue although they may be sources from non-tax revenues. Tax is generally imposed on income, consumption, production, and human skill. Where

there is budget deficit, the government results to public borrowing, which can either be foreign debt or domestic debt, in order to finance its expenditure. The net borrowing of government is called fiscal deficit. According to Battaglini and Coate (2008), if public expenditure is financed by public debt, then the maintenance of sustainability of fiscal balance becomes a priority. If available funds in the budget are allocated to unproductive heads, then growth suffers, tax revenue declines and it becomes difficult to repay the debt with interest. This then makes fresh loans to be taken out in order to repay previous ones. This will adversely affect the fiscal balance.



Figure 1: Nigerian Government Revenues  
Source: www.tradingeconomics.com

Nigeria incurs both domestic and external debts. The external debt is typically owed to foreign creditors. These are multilateral agencies such as the Africa Development Bank, the World Bank, or the Islamic Development Bank, and bilateral agencies such as the China Exim Bank, the French Development Bank, or the Japanese Aid Agency. There are also foreign private creditors such as investors in Nigeria’s Eurobonds. The domestic debt, however, is contracted within Nigerian borders, usually through bond and Treasury bills which are purchased by Nigerian banks, local pension funds, and other domestic and foreign investors. The government also has some contractor arrears, and other local liabilities which form part of total public debt. The concern is that excessive domestic borrowing could crowd out private sector investment as the government competes with the private sector for available funds.

Infrastructure is a strategic tool used in basically all human endeavors in various fields of life such as production, construction, technology and procurements. In the 1970s, due to an unprecedented increase in Nigeria’s oil revenue, there was a massive increase in federal government expenditure. A significant increase in capital expenditure was noticeable between 1974 and 1980, reflecting the significant increase in government revenue following favorable developments in the international petroleum market. The period thus witnessed a boost in the provision of economic and social infrastructure such as highways, air and sea ports, hospitals, schools and housing. However, capital expenditures of the Federal Government as a percentage of GDP decreased from 1980 to 1995. These reflected adherence to the prescriptions of Structural Adjustment Program

(SAP) and also the impact of the oil glut of the 1980s on revenue of government and by extension on its expenditure. Between 1999 and 2010, it had, once again, significantly fallen. In general, the period from 1990 to 1998 was characterized by high growth in capital expenditure in nominal terms, though in real terms, growth was only marginally. The upward trend in nominal capital outlay during the period reflected high rates of inflation and the consequent low value of the naira (Oni, 2014).

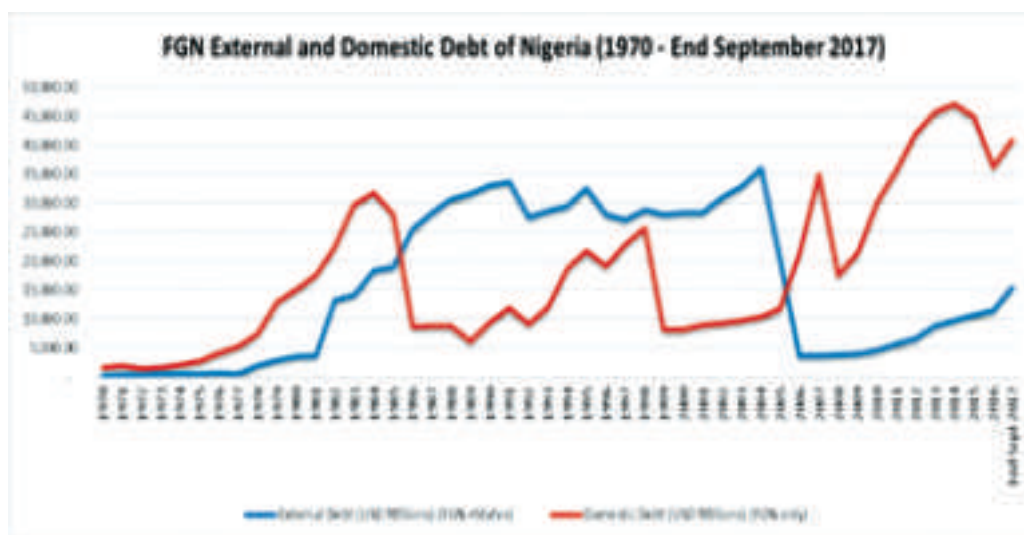


Figure 2: External and domestic Debt of Nigeria

Source: Office of the Accountant General of the Federation (OAGF) & 2017 Appropriation Act

In order for the tax revenue collected to meet the capital expenditure demands and debt repayments, the Government must pay attention to its economic and financial situation. Therefore, this study will analyze the impact of tax revenue on external and internal public debt in Nigeria and the impact of taxes on capital expenditure in Nigeria.

In the early 1970s, developing countries borrowed to finance their current account deficit. Such borrowing was geared towards boosting the level of economic growth and development. As the debt piled up, the international financial institutions from the 1980s started providing both technical and financial debt-management assistance to debtor countries. On the other hand, not much attention was being paid to the domestic debt. Thus some countries, Nigeria inclusive, have been witnessing bloated domestic debt. In recent times there seems to be a consensus among public opinion leaders that huge external debt was adversely affecting economic growth and development in developing countries (Mojekwu & Ogege, 2012).

Soludo (2003) opined that countries borrow for majorly two broad categories: macroeconomic reasons [higher investment, higher consumption (education and health)] and to finance temporary balance of payments deficits [to lower nominal interest rates abroad, lack of domestic long-term credit, or to circumvent hard budget constraints]. According to Chukwuemeka, Richardson and Chinanuife (2018),

infrastructural development has been the major concern of countries all over the world due to its significant impact in the growth of a country. They also opined that in Nigeria, it has been observed that the level of infrastructure posed serious threat to attaining sustained growth poverty in the country.

According to Canning (1999) other than giving a better understanding of the function of the country in the growth process, opportunity could be taken to carefully restructure and scrutinize the composition of public expenditure so as to enhance growth and development as well as promote the needed environment for private sector development. Therefore, this study investigates government spending on debt servicing as well as its effect on capital expenditure in Nigeria.

According to the Nigerian Ministry of Finance, Nigerian Federal and State governments have borrowed so much that debt servicing now consumes about 70% of tax revenue generated. From the words of Garba Shehu (2015), "it would appear that the country might be heading for a fiscal crisis if urgent steps are not to halt the negative trends in target setting and target realization in tax revenue". For a developing country like Nigeria, capital expenditure ought to constitute a substantial portion of her total public expenditure to lay the foundation for economic growth and sustainability (Iheanacho, 2016). There is need for a new and updated study to identify and assess the effect of tax revenue on public debt and capital expenditure in Nigeria from 2009 to 2018. The present study intends to contribute to existing body of knowledge on how the government can efficiently allocate collected tax revenues to public debt and capital expenditure.

## **2. LITERATURE REVIEW**

According to Odum, Odum and Egbunike (2018), fiscal policy is the way and manner whereby the government manages the economy through income and expenditure to bring about certain desired macroeconomic objectives. Dada (2016) opined that it the means by which the government adjusts its spending levels and tax rates to monitor and influence a nation's economy. He said that it is the sister strategy to monetary policy through which a central bank influences a country's money supply. These two polices are combined to achieve a country's economics' objectives. However, Afolabi and Atolagbe (2018) believe that fiscal policy has no dominance in Nigeria.

According to Charles (2018), government expenditure is a determinant of fiscal policy. In a recession, governments stimulate the economy with deficit spending (expenditure exceeds revenue). During periods of expansion, they restrain a fast growing economy with higher taxes and aim for a surplus (revenue exceeds expenditure). Fiscal policy helps the government with stable resources for the provision for government to provide basic public goods and services (e.g healthcare, transport, education, infrastructure, etc). According to Ibronke (2018), the implementation of Fiscal policy in Nigeria had reduced deficit and increased fiscal discipline.

Taxation is known as an essential instrument for National development and growth in many countries all over the world. It is one of the main guides by which development and growth is measured in any civilization to the extent of wealth generated by the economic activities undertaken in the society.

The Nigeria's revised “2017 National Tax Policy” defines tax as any compulsory payment to government imposed by law without direct benefit or return of value or a service whether it is called a tax or not (Federal Ministry of Finance, 2017).

Abdulahi (2012) opined that tax can be defined as “a charge on income of individuals and corporate bodies by the government”. Tax is a compulsory levy imposed on individuals and companies by government which serves as a source of income to the government to perform various legitimate function of the state (Olaoye, Ashaolu & Adewoye, 2009).

This comprises of rules and regulations relating to tax revenue and the various kind of tax in Nigeria. These laws are made by the legislative arms of the government. The following are some of the tax laws prevailing in Nigeria:

Capital expenditure (CAPEX) is spending on long term assets. It is the purchase of items that will last and will be used time and time again in the provision of a good or service. In the case of the government, examples would be the building of a new hospital, the purchase of new computer equipment or networks, building new roads and so on (Modebe *et al*, 2012).

The effect of capital expenditure usually extends to the future. It has a huge impact on the long-term strategic goals of the government. The evidence of capital expenditures can be seen years after they have been constructed or purchased. Idiake, Danjuma, Saidu and Anunobi (2019) are of the opinion that's the Nigerian budget is unconcerned with the provision of basic infrastructure for the long term growth of Nigeria but rather on spending on expenditure that do not contribute to the GDP of Nigeria.

According to Essays (2018), in a country, the needs of its citizen constantly increases, therefore, government spending has to increase as well to meet those needs. Public expenditure is usually met through taxes, fees, duties and penalties. However, government is not able to meet up its expenditure from these revenues due to budget deficit. To overcome this situation, they borrow (Campbell, 2019). Borrowing is the taking of money and similar values for repayment at a future time. Public borrowing is the legal obligation of a government to repay the principal and interest to the lender at a predetermined period in the future (Sibel, 2019).

Adam Smith and D. Ricardo opposed public borrowing. In their view, borrowing can be irresponsibly spent because it is an unearned income. In this context, they believe that the capital is wasted and the debt burden would be shifted to the next generation due to inability of the present government to pay and the inefficiency of the public expenditure. Nigeria incurred both domestic and external debts. The external debt is typically owed to foreign creditors. The domestic debt, however, is contracted within Nigerian borders, usually through bond and Treasury bills which are purchased by Nigerian banks, local pension funds, and other domestic and foreign investors.

**Table 1: Nigeria's Total Public Debt Portfolio as at June 30, 2019**

	CATEGORY OF DEBT	AMOUNT OUTSTANDING (US\$'M)	AMOUNT OUTSTANDING (N'M)	% OF TOTAL DEBT
<b>A</b>	<b>INTERNAL DEBT</b>	<b>27,162.63</b>	<b>8,322,629.83</b>	<b>32.38</b>
	FGN ONLY	22,887.96	7,012,870.94	27.29
	STATES & FCT	4,274.67	1,309,758.89	5.10
<b>B</b>	<b>EXTERNAL DEBT</b>	<b>56,720.03</b>	<b>17,379,015.91</b>	<b>67.62</b>
	FGN ONLY	43,775.44	13,412,796.09	52.19
	STATES & FCT	12,944.58	3,966,219.82	15.43
<b>C</b>	<b>TOTAL DEBT (A+B)</b>	<b>83,882.66</b>	<b>25,701,645.74</b>	<b>100</b>

Source: Debt Management Office (2019)

**Note:** CBN Official Exchange Rate of US\$1 to NGN306.40 as at June 30, 2019 was used in converting External Debt to Naira.

The Debt Management Office (DMO) was established on October 4, 2000 to centrally co-ordinate the management of Nigeria's debt for all the tiers of government. While the state governments' external borrowing is guaranteed by the Federal Government (FG), their domestic borrowings required analysis and confirmation by the Federal Government based on clear criteria and guidelines that the states can repay based on their monthly allocations from the Federation Account Allocation Committee (FAAC) and Internally Generated Revenue (IGR).

The theory that underpins this study is The Theory of Public Finance. The Theory of Public Finance was propounded by Richard A. Musgrave in 1958. This theory talks about the raising and spending of public finance. According to Smriti (2018), Public finance is divided into four broad branches. These are Public Expenditure, Public Revenue, Public Debt and Financial Administration. Public expenditure talks about the various principles, effects and problems of expenditure made by public authorities. Public revenue discusses the various ways of raising revenue by public bodies especially through taxation. Most public finance is raised through taxes (Bailey, 2004). Public debt is the study of the different principles and methods of raising debt and their effects. It also talks about the methods of repayment and management of public debt. Financial administration deals with the methods of budget preparation, various types of budgets, war finance and development finance. This theory encompasses Tax Revenue (Independent variable) and Public Debt and Capital Expenditure (Dependent variables). It talks about how tax revenue can be raised and spent on public debt servicing and capital expenditure. Therefore this theory would be adopted for this study.

Other works have been carried out by my variables independently but not in relation to each other. Based on the article review, the gap is the effect of tax revenue and public debt in relation to capital expenditure.

Omotor (2017) focused only on the education aspect of capital expenditure in Nigeria. Akpu and Ohaka (2017) worked on the tax revenue yield in Rivers State alone. Obasikene (2017) worked on government expenditure in Nigeria and its impact on the Nigerian Economy using data from 1986-2014. Therefore, it doesn't cover the expenditure of recent years. It also did not take cognizance of public debt in Nigeria. Other sources of financing education should be encouraged in order increase national development. Areghan, Babajide, Akinjare, Oladeji and Osuma (2018) worked on the effect of Public Debt on Economic Growth in Nigeria. However, it focuses on the economy and did not take cognizance of Tax Revenue on its own. This research therefore intends to overcome this gap by studying how public debt and capital expenditure and been impacted by tax revenue using recent data.

### **3. METHODOLOGY**

The research design that was adopted for this study is the ex-post facto research design because historical data and reports would be used. The population of this study is Nigerian economy for the period of 20 years (1999-2018). The population of this study is its sample size. The Central Bank of Nigeria (CBN), Federal Inland Revenue Service (FIRS) and Debt Management Office (DMO). The tax samples to be used for this study are Petroleum Profit Tax (PPT), Company Income Tax (CIT), Customs and Excise Duty (CED) and Value-Added Tax (VAT).

Data were be collated from the Central Bank of Nigeria Statistical Bulletin. The reason for using data from the CBN Statistical Bulletin is to derive direct analyzed data from the government itself. To capture Tax revenue in Nigeria, we will use Company Income Tax, Value Added tax and Personal Income Tax. For Public debt in Nigeria, we used data on domestic debt stock and external debt stock while Capital expenditure will be taken as a whole. The research employs only quantitative method of data analysis. This study would be making use of descriptive and inferential statistics. The data gathered would be analyzed using E-View statistics.

#### **Model Structure**

The model for this study is the adapted from the above model as follows:

$$Y_1 = f(X) \text{ and } Y_2 = f(X)$$

Where:

$Y_1$  = Public Debt (PD)

$y_{1a}$  = External Debt (ED)

$y_{1b}$  = Internal Debt (ID)

$Y_2$  = Capital Expenditure (CE)

X will represent Tax Revenue (TR)

$x_1$  = Value Added Tax (VAT)

$x_2$  = Company Income Tax (CIT)

$x_3$  = Petroleum Profit Tax (PPT)

$x_4$  = Customs and Excise Duties (CED)

$$ED = f(x_1, x_2, x_3, x_4) \dots\dots\dots 1$$

$$ID = f(x_1, x_2, x_3, x_4) \dots\dots\dots 2$$

$$CE = f(x_1, x_2, x_3, x_4) \dots\dots\dots 3$$

**Model 1**

$$ED = f(VAT, CIT, PPT, CED)$$

$$ED_t = \hat{\alpha}_0 + \hat{\alpha}_1 VAT_t + \hat{\alpha}_2 CIT_t + \hat{\alpha}_3 PPT_t + \hat{\alpha}_4 CED_t + \mu t$$

**Model 2**

$$ID = f(VAT, CIT, PPT, CED)$$

$$ID_t = \hat{\alpha}_0 + \hat{\alpha}_1 VAT_t + \hat{\alpha}_2 CIT_t + \hat{\alpha}_3 PIT_t + \hat{\alpha}_4 CED_t + \mu t$$

**Model 3**

$$CE = f(VAT, CIT, PPT, CED)$$

$$CE_t = \hat{\alpha}_0 + \hat{\alpha}_1 VAT_t + \hat{\alpha}_2 CIT_t + \hat{\alpha}_3 PPT_t + \hat{\alpha}_4 CED_t + \mu t$$

**Main Model**

$$PD_t + CE_t = \hat{\alpha}_0 + \hat{\alpha}_1 TR_t + \mu t$$

Where:

$\hat{\alpha}_0$  is the intercept.

$\hat{\alpha}_1 - \hat{\alpha}_4$  are the coefficients of the explanatory variables.

$\mu t$  is the error terms that absorb the influence of omitted variables in proxies used.

The ordinary least square regression will be employed to obtain numerical values of the models' coefficients. The probability values of the estimated coefficients will be evaluated at a statistical significance of 5%.

The *Apriori* expectation from the data analysis is a positive and inverse relationship between tax revenues and public debt and capital expenditure and that tax revenue has a positive and direct relationship between public debt and capital expenditure.

**4. RESULTS AND DISCUSSION**

**Descriptive Statistics**

The results for the descriptive statistics for the variables are shown in the table below.

**Table 2: Descriptive Statistics**

	ED	LOGID	LOGCE	LOGVAT	LOGCIT	LOGPPT	LOGCED
Mean	17.22369	8.058662	6.490453	5.075690	12.60926	15.12088	12.37337
Median	6.858173	7.914541	6.647829	5.361865	13.18532	14.50412	12.57517
Maximum	51.14335	9.455198	7.427798	6.279908	15.92823	17.28156	12.99066
Minimum	4.078808	6.678099	5.478348	3.167604	9.348362	12.00945	9.225229
Std. Dev.	17.33849	0.954513	0.545471	0.976400	2.310047	1.793759	0.858795
Skewness	0.962211	0.084460	-0.406064	-0.531624	-0.035116	0.015260	-2.614836
Kurtosis	2.267736	1.524219	2.299901	1.973713	1.483848	1.530697	10.19669
Jarque-Bera	3.533012	1.838720	0.958077	1.819801	1.919709	1.799818	65.95150
Probability	0.170929	0.398774	0.619379	0.402564	0.382949	0.406607	0.000000

Source: Authors' Computation, 2019

There is no evidence of significant variation in the data set of the variables except for ED. This is shown by the differences between the maximum and the minimum figures i.e. using maximum and minimum. However, the variable 'ED' has the largest spread in its data set meanwhile 'VAT' has the smallest spread.

Additionally, skewness measures the asymmetry distribution of the series around its mean. Furthermore, from Table 2, ID, ED and PPT are positively skewed implying that the variables have a long tail to the right although, ED has the longest tail. On the other hand, CE, VAT, CIT and CED are all negatively skewed implying that they have a long tail to the left although CED has the longest tail to the left. The closer the value of skewness is to 0, the higher the tendency that the data, individually, is normally distributed. This means that all the variables except for CED are normally distributed.

The kurtosis which measures the flatness or peakedness indicates that CED is leptokurtic since its kurtosis value is greater than 3. Conversely, ID, ED, CE, VAT, CIT and PPT are platikurtic since their kurtosis values are less than 3. This means that the values are flat relative to the normal distribution. The closer the value of kurtosis is to 3, the higher the tendency that the data, individually, is normally distributed. This means that all the variables except for CED are normally distributed.

Finally, the Jarque-Bera test shows whether a variable or series is normally distributed or not. Table 2 indicates that all the variables except CED are normally distributed. This is because the probability values of their Jarque-Bera statistics are all greater than 0.05 while the probability value for CED is less than 0.05 therefore it is not normally distributed.

**Trend Analysis**

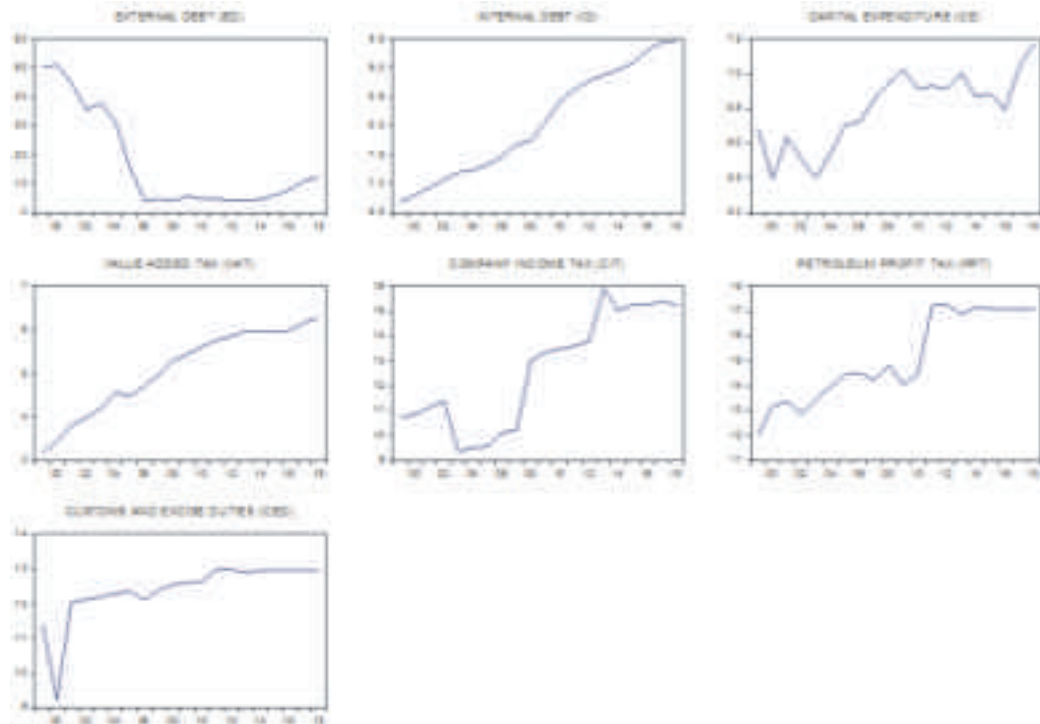


Figure 3: Trend Analysis

Figure 3 above shows that External Debt has been declining over the years. The diagram shows a 1.77% increase in 2000. However, there was a decline by 12.16% in 2001 and a further decline by 20.77% in 2002. Although there was a brief growth in 2003 by 6.06%, it quickly declined by 16.47%, 49.82% and 73.74% in 2004, 2005 and 2006 respectively. It alternatively rose and fell year after year. It rose by 10.81% in 2007, fell by 11.41% in 2008, rose by 40.94% in 2009, fell by 21.66% in 2010, rose by 1.21% in 2011, fell by 9.05% in 2012 and rose by 4.21% in 2013. It continued to grow by 4.28%, 32.43%, 29.91%, 40.87% and 1.75% in 2014, 2015, 2016, 2017 and 2018 respectively.

Figure 3 shows that there was no decline in internal debt between the period of 1999 and 2018. The internal debt began rising steadily from 1999 to 2003 with an average of 13.5%. The rise reduced to about 3% in 2004 but picked up again in 2005. It accelerated in 2007 when it rose by 23.75%. The increase reduced to about 7% in 2008 before rising by 39.12% and 41.01% in 2009 and 2010 respectively. The increase alternately varied between 8.9% and 25% between 2011 and 2017 before reducing to a growth rate of about 1.47% in 2018.

Figure 3 shows that Capital Expenditure fell drastically from 1999 to 2000 by 51.92% and quickly rose back by 83.2% in 2001. It then dropped by 51.5% between 2001 and 2003. It began to gradually rise before falling again in 2010 by 23.3%. The diagram shows consistent rise and fall in capital expenditure in 2011, 2012, 2013, 2014, 2015 and

2016 by 3.92%, -4.77%, 26.72%, -29.35%, 4.50% and -20.13% respectively. This figure then rose by 90% in 2017 and a further 35.4% in 2018.

There was a continuous growth in Value Added Tax from 2000 to 2004 which peaked at 11.17% in 2001. However, it fell by about 2% in 2005. Growth continued then after from 2006 to 2013. There was decline in growth by 0.03% in 2014 and 0.33% in 2015. Growth continued once again in 2016.

From the diagram above, company income tax started growing gradually from 1999 with an average of 2% but fell by 17% in 2003. But it picked up again in 2004. There was a rapid growth by 27.3% in 2008. The growth reduced and was on an average of 1.47%. Growth increased greatly by 15.61% in 2013 and declined by 5% in 2014. There was no growth in 2016. It started again in 2017 by 1.15% and declined in 2018 by 1.16%.

Growth in Petroleum Tax started from 9.67% in 2000. It declined by 3.655 in 2002. There was steady growth from then till 2006. It declined in 2007 by 2.11% and again in 2009 by 5.43%. Growth reached an all-time high of about 19% in 2011. From then, growth rose and fell before flat lining in 2016. It rose again in 2018 by 0.25%.

From Table 2 above, we can see that Customs and Excise Duties fell drastically in 2000 by 18.96%. It then grew rapidly by 30.59% in 2001. It grew steadily from 2002 to 2005 within 0.51% to 0.86%. CED declined by 2.19% in 2006 but continued growing steadily from 2007 to 2012 before declining again by 0.80% in 2013. It alternatively rose and fell year after year. It rose by 0.54% in 2014 and fell by 0.09% in 2015. However, there was no change in 2016. It fell again by 0.09% 2017 and rose by 0.09% in 2018.

### **Correlation Test**

**Table 3: Correlation Test**

	ED	LOGID	LOGCE	LOGVAT	LOGCIT	LOGPPT	LOGCED
ED	1.000000						
LOGID	-0.741570	1.000000					
LOGCE	-0.777868	0.791835	1.000000				
LOGVAT	-0.870374	0.960135	0.833074	1.000000			
LOGCIT	-0.579623	0.903148	0.763425	0.831541	1.000000		
LOGPPT	-0.732514	0.937762	0.695218	0.915030	0.818978	1.000000	
LOGCED	-0.747816	0.709798	0.687668	0.789957	0.553104	0.674950	1.000000

From Table 3 above, External Debt (ED) has a strong negative relationship with all the variables except Company Income Tax (CIT) which has only a good negative relationship. This implies that Tax Revenues (TR) and External Debt (ED) move in opposite direction and has an inverse relationship. Value Added Tax (VAT) has the strongest negative relationship.

From Table 3 above, Internal Debt (ID) has a very strong positive relationship with all the variables. This implies that Tax Revenues (TR) and Internal Debt (ID) move in the same direction and has a direct relationship. However, Value Added Tax (VAT) has the strongest positive relationship.

From the table 3 above, Capital Expenditure (CE) has a very strong positive relationship with Value Added Tax (VAT) and Company Income Tax (CIT) while Petroleum Profit Tax (PPT) and Customs and Excise Duties (CED) which have a good positive relationship. This implies that Tax Revenues (TR) and Capital Expenditure (CE) move in the same direction and has a direct relationship. However, Value Added Tax (VAT) has the strongest positive relationship.

**Table 4: Results**

Variable	Model One				
	Coefficient	Std. Error	T Stats	F Stats	Prob.
ECT(-1)	-0.010920	0.026336	0.414654		0.0268
Chi-Square					0.0300
LOGVAT	-0.2530143	6.310307	-4.00954	0.0011	
LOGCIT	0.03130751	1.528628	2.048080	0.0585	
LOGPPT	0.02315107	2.631660	0.879713	0.3929	
LOGCED	-0.0029537	3.666895	-0.08055	0.9369	
C	0.7481771	40.52722	1.846110	0.0847	
Adjusted R <sup>2</sup>	0.789552			18.82089	0.000010
Breusch-Godfrey Serial Correlation Test	0.5281				
Heteroskedasticity Test	0.5631				
Ramsey Reset				15.09457	

Sources: Authors' Computation, 2019

From table 4, for model one, the co-efficient for ECTt-1 is the speed of adjustment towards long run equilibrium which is 1.09%. This means about 1.09% of departures from long run equilibrium is corrected each period. The p-value of 0.0268 which is statistically significant at 5% is significant for explaining External Debt. The Chi-square's p-value of 0.0300 is also statistically significant at 5%, therefore, we do not accept the null hypothesis. This shows evidence that there is a causal effect from tax revenue to external debt.

**Table 5: Long run result**

Variable	Model Two				
	Coefficient	Std. Error	T Stats	F Stats	Prob.
ECT(-1)	-0.001173	0.011776	0.099648		0.0224
Chi-Square					0.0181
LOGVAT	0.491089	0.152918	3.211460	0.0058	
LOGCIT	0.117807	0.040689	3.361483	0.0062	
LOGPPT	0.136639	0.061956	3.406180	0.0490	
LOGCED	-0.020054	0.047488	3.372858	0.8245	
C	2.262625	0.114531	1.989962	0.0360	
Adjusted R <sup>2</sup>	0.959223			112.7364	0.000000
Breusch-Godfrey Serial Correlation Test	0.7073				
Breusch-Godfrey Heteroskedasticity Test	0.6212				
Ramsey Reset				19.66825	

Sources: Authors' Computation, 2019

From table 5, for model two, the co-efficient for ECTt-1 is the speed of adjustment towards long run equilibrium which is 0.11%. This means about 0.11% of departures from long run equilibrium is corrected each period. The p-value of 0.0224 which is statistically significant at 5% is significant for explaining Internal Debt. The Chi-square's p-value of 0.0181 is also statistically significant at 5%, therefore, we do not accept the null hypothesis. This shows evidence that there is a causal effect from tax revenue to external debt.

**Table 6: Long run equilibrium**

Variable	Model Three				
	Coefficient	Std. Error	T Stats	F Stats	Prob.
ECT(-1)	-0.000510	0.017535	-0.029106		0.0397
Chi-Square					0.0253
LOGVAT	0.506090	0.240014	2.108588	0.0522	
LOGCIT	0.085766	0.100096	-1.544082	0.1609	
LOGPPT	-0.154556	0.058142	1.475115	0.1434	
LOGCED	0.072528	0.139471	0.520024	0.6106	
C	4.279862	1.541460	2.776499	0.0141	
Adjusted R <sup>2</sup>	0.692394			11.69184	0.000164
Breusch-Godfrey Serial Correlation Test	0.6185				
Breusch-Godfrey Heteroskedasticity Test	0.7296				
Ramsey Reset				0.330108	

Sources: Authors' Computation, 2019

From table 6, for model three, the co-efficient for  $ECT_{t-1}$  is the speed of adjustment towards long run equilibrium which is 0.05%. This means about 0.05% of departures from long run equilibrium is corrected each period. The p-value of 0.0397 which is statistically significant at 5% is significant for explaining Capital Expenditure. The Chi-square's p-value of 0.0253 is also statistically significant at 5%, therefore, we do not accept the null hypothesis. This shows evidence that there is a casual effect from tax revenue to external debt.

For the purpose of this study, the Ordinary Least Square (OLS) regression estimation technique would be employed in estimating the research model and for obtaining the numerical estimates of the co-efficient in different equations.

From the model results in Table 4 above, Value Added Tax has a negative impact on External Debt. Specifically, a 1% change in Value Added Tax would lead to a 25.3% decrease in External Debt of the country. The effect of VAT on ED is statistically significant with a p-value of 0.0011 at 5% significance level. It conforms to *a priori* because an increase in VAT is expected to reduce External Debt.

Company Income Tax has a positive impact on External Debt. Specifically, a 1% change in Company Income Tax would lead to a 13.13% increase in External Debt. The effect of CIT on ED is not statistically significant with a p-value of 0.0585 at 5% significance level. It does not conform to *a priori* because an increase in CIT is not expected to increase External Debt.

Petroleum Profit Tax has a positive impact on External Debt. Specifically, a 1% change in Petroleum Profit Tax would lead to a 23.2% increase in External Debt. The effect of PPT on ED is not statistically significant with a p-value of 0.3929 at 5% significance level and it does not conform to *a priori* because an increase in PPT is expected to reduce External Debt.

Customs and Excise Duty has a negative impact on External Debt. Specifically, a 1% change in Customs and Excise Duty would lead to a 0.3% decrease in External Debt. The effect of CED on Ed is not statistically significant with a p-value of 0.9369 at 5% significance and it conforms to *a priori* because an increase in CED is expected to reduce External Debt.

Table 5 shows the following:

Value Added Tax has a positive impact on Internal Debt. Specifically, a 1% change in Value Added Tax would lead to a 49.1% increase in the Internal Debt of the country. The effect of VAT on ID is statistically significant with a p-value of 0.058 at 5% significance level. It does not conform to *a priori* because an increase in VAT is expected to reduce Internal Debt.

Company Income Tax has a positive impact on Internal Debt. Specifically, a 1% change in Company Income Tax would lead to an 11.8% increase in Internal Debt. The effect of CIT on ID is statistically significant with a p-value of 0.0062 at 5% significance level. However, it does not conform to *a priori* because an increase in CIT is not expected to increase Internal Debt.

Petroleum Profit Tax has a positive impact on Internal Debt. Specifically, a 1% change in Petroleum Profit Tax would lead to a 13.7% increase in Internal Debt. The effect of PPT on ID is statistically significant with a p-value of 0.0490 at 5% significance level but it does not conform to *a priori* because an increase in PPT is expected to reduce Internal Debt.

Customs and Excise Duty has a negative impact on Internal Debt. Specifically, a 1% change in Customs and Excise Duty would lead to a 2% decrease in Internal Debt (ID). However, the effect of CED on ID is not statistically significant with a p-value of 0.8245 at 5% significance level but it conforms to *a priori* because an increase in CED is expected to reduce Internal Debt.

Table 6 above shows the following:

Value Added Tax has a positive impact on Capital Expenditure. Specifically, a 1% change in Value Added Tax would lead to a 50.6% increase in Capital Expenditure of the country. The effect of VAT on CE is not statistically significant with a p-value of 0.0522 at 5% significance level. It conforms to *a priori* because an increase in VAT is expected to increase Capital Expenditure.

Company Income Tax has a positive impact on Capital Expenditure. Specifically, a 1% change in Company Income Tax would lead to an 8.6% increase in Capital Expenditure. The effect of CIT on CE is not statistically significant with a p-value of 0.1609 at 5% significance level. However, it conforms to *a priori* because an increase in CIT is expected to increase Capital Expenditure.

Petroleum Profit Tax has a negative impact on Capital Expenditure. Specifically, a 1% change in Petroleum Profit Tax would lead to a 15.5% decrease in Capital Expenditure. The effect of PPT on CE is not statistically significant with a p-value of 0.14342 at 5% significance level and it does not conform to *a priori* because an increase in PPT is not expected to reduce Capital Expenditure.

Customs and Excise Duty has a positive impact on Capital Expenditure. Specifically, a 1% change in Customs and Excise Duty (CED) would lead to a 7.3% increase in Capital Expenditure (CE). However, the effect of CED on CE is not statistically significant with a p-value of 0.6106 at 5% significance level but it conforms to *a priori* because an increase in CED is expected to increase Capital Expenditure.

From the result in Table 4, the Adjusted  $R^2$  is 0.789552 showing that about 78.9% of the dependent variable is traceable to the independent variables while the remaining 21.1% is explained by factors not included in the model. This shows that the model has a very good fit. This implies that the independent variables are strong explanatory variables of the dependent variable. That is, Tax Revenue is significant in explaining External Debt.

Since the probability value of f-stat is 0.000010 which is less than 0.05, that is, significant, we reject the null hypothesis and conclude that the model is significant in explaining the effect of tax revenue on public debt and capital expenditure.

From the result in Table 5 above, the Adjusted  $R^2$  is 0.959223 showing that about 95.9% of the dependent variable is traceable to the independent variables while the remaining

4.1% is explained by factors not included in the model. This shows that the model has a very good fit. This implies that the independent variables are strong explanatory variables of the dependent variable. That is, Tax Revenue is significant in explaining Internal Debt.

Since the probability value of f-stat is 0.000000 which is less than 0.05, that is, significant, we reject the null hypothesis and conclude that the model is significant in explaining the effect of tax revenue on public debt and capital expenditure.

From the result in Table 6 above, the Adjusted  $R^2$  is 0.692394 showing that about 69.2% of the dependent variable is traceable to the independent variables while the remaining 30.8% is explained by factors not included in the model. This shows that the model has a good fit. This implies that the independent variables are good explanatory variables of the dependent variable. That is, Tax Revenue is significant in explaining Capital Expenditure.

Since the probability value of f-stat is 0.000164 which is less than 0.05, that is, significant, we reject the null hypothesis and conclude that the model is significant in explaining the effect of tax revenue on public debt and capital expenditure.

The study sought to understand the effect of tax revenue on public debt and capital expenditure in Nigeria over the span of 20 years, that is, 1999-2018. Given the empirical findings, the study concludes that, public debt and capital expenditure respond to tax revenue.

The first objective was to assess the impact of tax revenue on external public debt in Nigeria. The study concludes that CIT and PPT have positive impacts on external debt based on their co-efficient of 0.03130751 and 0.02315107 respectively while the other variables (VAT and CED) are expected to have negative impacts on external debt in Nigeria with co-efficient of -0.2530143 and -0.0029537 respectively. In addition, a bi-directional causality relationship exists between tax revenue and external debt. Furthermore, the correlation results indicate that tax revenue has a strong negative relationship with tax revenue and external debt. The co-efficient of determination ( $R^2$ ) is 0.789. This implies that 78.9% of variations in External debt can be traceable to all our explanatory variables while the remaining 21.1% variations in the respective dependent variable were caused by other factors not included in this model. Based on the probability value of the result's F-statistic of 0.0010% we therefore reject the null hypothesis and conclude that tax revenue has both positive and negative impacts on external debt.

The second objective was to determine the impact of tax revenue on internal public debt in Nigeria. This study concludes that internal debt responds positively to VAT, CIT and PPT based on their co-efficient of 0.491089, 0.117807 and 0.136639 respectively while CED is expected to have a negative impact on internal debt with a co-efficient of -0.020054. In addition, there is a significant relationship between tax revenue and internal debt. Furthermore, results for correlation indicated a very strong positive relationship between tax revenue and internal debt. The  $R^2$  is 0.959. This implies that 95.9% of variations in internal debt can be traceable to all our explanatory variables while the

remaining 4.1% variations in the respective dependent variable were caused by other factors not included in this model. Based on the probability value of the result's F-statistic of 0.0000% we therefore reject the null hypothesis and conclude that tax revenue has both positive and negative impacts on internal debt.

The third objective was to identify the extent to which tax revenue has contributed to capital expenditure in Nigeria. This study concludes that capital expenditure responds positively to VAT, CIT and CED with co-efficient of 0.506090, 0.085766 and 0.072528 respectively while PPT has a negative effect on capital expenditure with a co-efficient value of -0.154556. Furthermore, results for correlation indicated the existence of a strong positive relationship between tax revenue and capital expenditure. The co-efficient of determination ( $R^2$ ) is 0.692. This implies that 69.2% of variations in internal debt can be traceable to all our explanatory variables while the remaining 30.8% variations in the respective dependent variable were caused by other factors not included in this model. Based on the probability value of the result's F-statistic of 0.0164% we therefore reject the null hypothesis and conclude that tax revenue has both positive and negative effects on capital expenditure.

## **5. CONCLUSION AND RECOMMENDATIONS**

This study concludes that the government follows the spend-revenue hypothesis in its budget deficit decisions. This implies that the government spends first before raising revenue. This means that unless they are able to spend according to available resources, the government will continue to borrow. The strong correlation between the variables in the main model also helps us to conclude that there is a significant effect of tax revenue on public debt and capital expenditure.

It was recommended that to reduce public debt, fiscal authorities should enhance the effectiveness of the tax system by sealing loopholes and enforcing compliance. A cut in government expenditure is also necessary to restore fiscal balance as well as solve the problem of deficit budget and public debt in Nigeria. This can also be solved by prioritizing expenditure on key sectors that have the potential of boosting the overall productivity of the economy which will, in turn, be used to service these debts. Government should also ensure that revenue gotten from taxes are spent on profitable investments like capital expenditure and not spent carelessly. The government can use tax revenues to pay of the public debt directly rather than invest in unnecessary and poorly planned projects with or no profits. Ideally, the government should look to other sources of income in order to further reduce the burden of public debt.

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