Financial Disclosures X-ray and Predictions: Professional Appropriateness to Creative Accounting Practices in Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author UJN designed the study, performed the statistical analysis, wrote the protocol, wrote the manuscript and managed the analyses of the study. Authors CE and MFCA managed the literature searches, literature review writing and contributed to analyses of the study. All authors read and approved the final manuscript.

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ABSTRACT

This research work focuses on the role played by predictive ratios in effort to check incidence of creative accounting in the financial reporting system of Dangote Cement Nigeria Plc. It examines whether the impact of joint application of the Beneish 8-Predictive Ratios and the Altman Z-Scores as effective check on practices of Creative Accounting in Dangote Cement Nigeria Plc differ significantly. It also makes further effort at determining whether the predictive implications/outcome of the Beneish 8-Predictive Ratios application differ significantly in the pre and post IFRS reporting periods covered in the study. The research work is quantitatively designed. Dangote Cement Plc, the only Nigerian manufacturing company that made the list of Forbes 2015 top 2000 companies in the world, is purposively and judgmentally sampled. Thus, data from secondary sources comprising

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Annual Reports and Audited Accounts of Dangote Cement Nigeria Plc (2000 – 2015), published journals, Articles, Inaugural lectures etc, are used for the successful completion of this work. Inputs from the Annual Reports and Accounts are further analysed with the aid of Beneish 8-predictive Ratios and Altman Z-Scores ratio using the Mann Whitney U Test, and Wilcoxon statistical techniques. The result of the analyses shows that there is no significant difference in the impact the joint application of Beneish 8-predictive Ratios and the Altman Z-score model would have on investigations into creative accounting practices in predicting possible tendencies of such practices in any corporate organisation in Nigeria. It also found that there is no significant difference in the predictive implications of the Beneish 8-Predictive Ratios in the pre and post IFRS reporting periods of Dangote Cement Company. As a result, the study recommends that professional Accountants must tighten up their audit belt firmly towards ensuring that greater emphasis is equally placed on the data integrity/quality of the financial reports and not just on their IFRS disclosure quality.

1. INTRODUCTION

Creative accounting practice has assumed a highly unethical dimension globally such that users of accounting information run the risk of taking economic decisions based solely on information obtained from financial statements that might not be a true representation of transactions that had taken place. This, many scholars have linked to the prevalence of Agency problem in many corporate organisations especially in cases where managers feel they are not getting their deserved rewards for their relentless contribution to the companies' profitability and performance.

This has often prompted the overriding of requirements of business laws, recognized regulations or sound accounting practices through the negative use of creative accounting techniques, at least, for self enrichment/personal interest purpose.

A sound recollection of the banking industry experience in Nigeria shows that the actions of many of the banks' Chief Executives and their cohorts mirrored this path, thus causing so many depositors and shareholders of the failed banks in Nigeria to suffer substantial loss of their deposits and investment in the affected banks. The irony of this is that the same said banks, amidst external audits conducted and non qualified reports issued, had earlier in the years and weeks preceding their demise declared impressive or fantastic profits while enjoying oval recognition through national or international awards. For while most of the affected banks declared huge profits every year, some of them took to or embraced merger of two or more banks as a bail out option from the distress which had characterized the industry in the recent past. The questions that should bother depositors, shareholders, performance analysts, and scholars at the moment is why did these banks who few weeks back were accorded national and international awards based on performance did suddenly became distressed and eventually wound up or bought over? Could not the internal and external audit measures employed have exposed the level of rottenness prevalent in their financial records earlier enough to have averted the economic consequences that innocent investors of the banks later faced? Were there no reliable approaches/techniques available to professional Auditors, Analysts, or even knowledgeable existing Investors of the banks that could have enabled them predict the Creative Accounting practices prevailing within the failed banks? At least, this may have helped avert the terrible loss that later followed.

Cynthia [1] believes and recommends that Professional Accountants' reliance on financial ratios with predictive capabilities such as the Beneish 8-Predictive Ratios [2] and the Altman Z-Score models [3] during interim audit and proactive efforts through consistent internal control checks/evaluation towards addressing issues evolving from Creative Accounting practices globally, can be rewarding.

This will certainly enhance the investigative and deterrence skills of practicing Accountants during Audits in industries, especially at fixing all existing loopholes in public or private companies' accounting system towards predicting and preventing such practices even before their occurrence.

The use of financial ratios for business performance analysis has been a common practice for some considerable time now [4]. Their usage in model format especially for the prediction of corporate failures has generally been recognized as beginning in the late 1960s. The two notable works of that time were Beaver's Univariate Approach and the seminal work of Altman;s Z-score that used multiple discriminant analysis [5].

In 2015, four (4) Nigerian companies made appearances at the Forbes 2015 edition ranking of top 2000 global companies- 1 manufacturing company (Dangote Cement Nigeria Plc) and 3 commercial banks (Zenith Bank Nigeria Plc, First Bank of Nigeria Holdings, and Guaranty Trust Bank Nigeria Plc). Earlier in 2012, twenty (20) indigenous companies were flanked in the Forbes Africa top twenty five (25) West African companies. Apparently, the gap in the above statistics calls for attention, especially when such local entities' performances are compared with average global performance standards obtainable.

The fact that size of companies' market capitalization, annual turnover and operating profit, the primary focus areas of Creative Accountants, also served as criteria and bases of assessment of all companies that featured in the Forbes top 2000 global rankings, meant that such financial information so disclosed in the financial statements could afterall be subjected to scrutiny towards ensuring that they were not creatively produced, especially as the incidence surrounding the fall of ENRON continues to come to memory.

This is more as global evidence reveal that all developed nations across the globe are known for one unique quality among others, and that is impressive industrialization. However, Dangote groups via Dangote Cement Plc has led the market capitalization table in Nigeria for quite some time amidst competitively making appearance in world reputable international rankings such as Forbes top 2000 for some years.

Despite the above existing situations in accounting and auditing practice in Nigeria, which ordinarily should have led to endless volumes of scholarly investigations into the financial reporting practices of publicly listed companies in Nigeria especially now that Nigeria's financial reporting system has been mandatorily restricted to IFRS reporting architecture, little empirical effort appear to have been channeled into this sensitive area of accounting research in Nigeria.

Scholarly outputs by Umoren, Oyerinde and Odejayi [6], Osahon [7], Akenbor and Ibanichuka [8], Uwuigbe, Fagbemi and Anusiem [9], Sanusi and Izedonmi [10], Yadav [11], Abu and Adetula [12], and Ijeoma [13] also lend support to the fact that empirical methods are rarely deployed by scholars and studies in Nigeria in addressing envisaging issues affecting Creative Accounting activities in the Nigerian corporate organizations.

Unlike existing studies in the banking and financial sectors of Nigeria, scholarly literatures available Online shows that this area of accounting research has suffered serious "empirical" drought in the manufacturing sectors of Nigeria.

This effort is thus considered necessary towards ensuring that history that trailed the Nigerian banking sector which subsequently led to the untimely wind up/takeover of many respected Nigerian banks just few weeks/months after their receipt of international awards, does not repeat itself again, this time, in the manufacturing sectors of the Nigerian economy. This is even as the recollection of Cadbury Nigeria Plc's 2002 - 2006 N13 billion fictitious revenue scandal still hunts.

Moreso, the study is designed as a response to the notable gap existing in the research of creative accounting practices in Nigeria. Majority of such scholarly output on the subject usually lack empirical approach just as 97% of such accessible research work often sampled the banking sector in Nigeria.

It is against this backdrop that the study maintains focus to determine whether predictive ratios could serve as effective check measures on practices of Creative Accounting in publicly listed corporate organizations in Nigeria.

1.1 Objectives

Other specific objectives of the study are:

1. To determine whether the impact of joint application of the Beneish 8-Predictive Ratios and the Altman Z-Scores as effective checks on practices of Creative

Accounting in corporate organisations differ significantly.

2. To determine whether the predictive implications of the Beneish 8-Predictive Ratios in the pre and post IFRS reporting periods differ significantly.

1.2 Research Questions

To what extent does the impact of joint application of the Beneish 8-Predictive Ratios and the Altman Z-Scores as effective checks on practices of Creative Accounting in corporate organisations differ?

To what extent do the predictive implications of the Beneish 8-Predictive Ratios in the pre and post IFRS reporting periods differ?

1.3 Hypotheses

H_{O1}: The impact of jointly applying the Beneish 8-Predictive Ratios and the Altman Z-Scores as effective checks on practices of Creative Accounting in corporate organizations does not differ significantly.

H_{O2}: The predictive implications of the Beneish 8-Predictive Ratios in the pre and post IFRS reporting periods does not differ significantly.

2. LITERATURE REVIEW

2.1 Conceptual Framework

This concept of creative accounting evolved in Britannic economies due to the freedom ensured to the accounting professionals, and presently lies between legal form and the core of transactions or events [14]. It is viewed as earnings management in the USA and in most scholarly literatures but called creative accounting in Europe [15].

Groşanu, Răchişan, and Berinde, [16] posit that creative accounting is also complementarily being viewed as imaginative accounting or accounting of intent.

It is equated with disclosure management since a purposeful intervention in the financial reporting processes is often the case (Copeland, 1968 cited in [15]. Yadav [11] believes that creative accounting is an accounting practice that may or may not follow the letter of the rules of accounting standard practices but certainly deviate from those rules and regulations. And this may be characterized by excessive complications and use of innovative ways to characterize Income, Assets and Liabilities.

Thus, the assembly of procedures set up towards changing the profit of an organization by increasing or decreasing, or to misrepresent the financial statements or both [17], is often the case when considering the subject of creative accounting.

The current legal and accounting system is considered to be a permissive one, allowing companies a greater flexibility in the way they can treat various accounting issues and make decisions regarding the accounting policies they deem most appropriate to be applied by them [18]. Allowance for increased use of personal but professional judgment by IFRS especially in accounting issues not adequately treated or even omitted by IFRS is a reference point.

Upholding the words of Jameson (1988), Karim, Fowzia, and Rashid [15] stated that though creative accounting practices comply with the law and do not actually (except in the case of fraud) break the law or accounting standards, they do not comply with the spirit of the law.

2.2 Motivators of Creative Accounting

1. *Internal targets obligation:* This has often created an atmosphere of desperation for managers of enterprises especially where challenges of not meeting periodical targets is common and obtainable. Such desires and actions to cook the books towards meeting such internal targets set by top/higher management at all cost with respect to sales, profitability and share prices, are usually inevitable.

2. *Meeting external expectations:* Any growth reared entity must be prepared to face many expectations from its stakeholders such as Employees, Customers, Creditors, owners of the company, Government agencies etc, all have unique expectations from or positive contributions that a given entity is expected to make. Just as employees and customers desire to see the company attain long term survival feat for their interest sake, Suppliers and Creditors to the company equally want to be assured that the repayment of debt due to them is not in doubt while their long term

relationships with the company is sustained.

3. *Income smoothing:* Globally, companies especially public listed entities, often desire to portray a steady income stream in order to impress investors and other third parties. The need to keep share prices of a company's stocks stable in the Capital market is equally given due consideration by key players in the entity's managerial team.

4. *Window dressing for an IPO or a loan:* This act usually occurs before sensitive corporate events like IPO, acquisition or securing of loan is embarked on. The risks of debt covenant violation is often higher in cases like this.

5. *Taxation:* Whenever taxable income is calculated from the true accounting numbers of an entity (which in the actual sense, is the right statutory procedure laid down in any civilized society), the issue of creative accounting is usually given a second thought out of greed as an alternative towards ensuring that the right tax is not paid. This is why Tax Controllers/Accountants always focus on companies' Turnover figures (emphasis are also laid on Sales and purchases amounts for VAT purposes) as well as profit before tax values for actual tax liabilities of entities.

2.3 Beneish Predictive Ratios

These financial ratios which were first tested by Professor Beneish Messod Daniel in 1997 as five (5) investigative ratios have been restructured and enhanced to eight (8) predictive ratios in 1999.

The ratios are constructed from company's financial statements, and often present an outcome (a score) that jointly help users understand and describe the degree at which earning figures of organizations financial records are subject to alteration in the future. The score alone can rightly expose any corporate organisation that may have manipulated her financial data to boost profit. Although similar in many ways to the Altman Z-Score (Stockopedia, 2011), it focuses solely on the prediction and detection of financial figures manipulation or possible creative accounting practices rather than bankruptcy as is obtainable with the Altman Z-score model.

Given below are the predictive ratios- DSRI, AQI, DEPI and TATA, GMI, SGI, SGAI, and LEVI. These usually indicate a company's *predisposition* to engage in financial engineering or any form of financial data falsification.

The predictive ratios of DSRI focuses on financial statement distortions that capture unusual accumulations in receivables indicative of revenue inflation. AQI and DEPI emphasizes on unusual expense capitalization and declines in depreciation indicative of expense deflation, while TATA reveals the extent to which reported accounting profits are supported by cash profits [19].

1. Days Sales Receivable Index (DSRI) = *(Net Receivables$_t$ / Sales$_t$) / (Net Receivables$_{t-1}$ / Sales$_{t-1}$)*

2. Gross Margin Index (GMI) = *[(Sales$_{t-1}$ − Cost of Goods Sold$_{t-1}$) / Sales$_{t-1}$] / [(Sales$_t$ − Cost of Goods Sold$_t$) / Sales$_t$]*

3. Asset Quality Index (AQI) = *[1 - (Current Assets$_t$ + Plant, Property & Equipment$_t$ + Securities$_t$) / Total Assets$_t$] / [1 - ((Current Assets$_{t-1}$ + Plant, Property & Equipment$_{t-1}$ + Securities$_{t-1}$) / Total Assets$_{t-1}$)]*

4. Sales Growth Index (SGI) = *Sales$_t$ / Sales$_{t-1}$ (for application purpose, Turnover figures should be used for Sales too)*

5. Depreciation Index (DEPI) = *(Depreciation$_{t-1}$ / (Plant, Property & Equipment$_{t-1}$ + Depreciation$_{t-1}$)) / (Depreciation$_t$ / (Plant, Property & Equipment$_t$ + Depreciation$_t$))*

6. Selling, General & Administrative Expense Index (SGAI) = *(Selling, General & Administrative Expense$_t$ / Sales$_t$) / (Selling, General & Administrative Expense$_{t-1}$ / Sales$_{t-1}$)*

7. Leverage Index (LVGI) = *[(Current Liabilities$_t$ + Total Long Term Debt$_t$) / Total Assets$_t$] / [(Current Liabilities$_{t-1}$ + Total Long Term Debt$_{t-1}$) / Total Assets$_{t-1}$]*

8. Total Accruals to Total Assets (TATA) = *(Income from Continuing Operations$_t$ - Cash Flows from Operations$_t$) / Total Assets$_t$*

2.4 Beneish Predictive Ratios Results Interpretation Guideline

DSRI > 1.465 = Possible indulgence into revenue inflation, long stretching of credit collection period to boost turnover so as to recognize revenue earlier enough in the current year's financial record even though cash for the said sales are

recoverable the following year. ($\leq$ 1.031 as no creative accounting region).

GMI $>$ 1.193 = Signifies that Gross margin of company is deteriorating and company is more likely to take to creative accounting measures to maintain confidence in her shareholders and the investors ($\leq$ 1.014 as no creative accounting region).

AQI $>$1.254 = Tendencies of capitalizing and deferring costs that should have been expensed. ($\leq$ 1.039 as no creative accounting region).

SGI $>$1.607= firms under possible pressure to alter figures in her favour so as to keep up appearance in the competitive market ($\leq$ 1.134 as no creative accounting region).

TATA $>$ 0.031 =Accruals possibly used to engage in creative accounting. ($\leq$0.018 as no creative accounting region).

DEPI $>$ 1 = Tendencies of Assets being depreciated at a slower rate of depreciation to boost earnings. Thus, company could be making changes in her accounting policies by embracing revenue friendly depreciation policies.

SGAI $\leq$ -1.0 = Company pushed into possible creative accounting practices to defer costs and expenses and consequently improve her profitability picture.

LVGI $>$ 1 = Reflecting pictures of Increase in leverage. An increase in the indicator subjects a firm to a greater risk of violating debt covenants and engage in creative accounting activities in other to avoid a breech.

2.5 The Altman Z-Score

The ratio was introduced by Edward I. Altman in 1968 for the prediction of bankruptcy tendencies in public or private companies. Flanked by five (5) ratios whose data are also obtainable from a company's financial statement, the ratio has the ability to help users predict bankruptcy fate of a company in the following manner: A score below 1.8 means the company is probably heading for bankruptcy, while companies with scores above 3.0 are not likely to go bankrupt.

In clear terms, the implications of the Z-score are better appreciated when businesses understand that the lower the score of any analysis using the ratio, the higher the chances of bankruptcy in such a corporate organization [20].

The Z-score uses multiple corporate income and balance sheet values to measure the financial health of a company.

The Altman Z-score is calculated as follows:

$$Z\text{-}Score = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 0.999X5$$

Where

X1 (Working Capital/Total Assets)
X2 (Retained Earnings/Total Assets)
X3 (EBIT/Total Assets)
X4 (Market Value of Equity/Total Liabilities)
X5 (Sales/Total Assets)

2.6 Theoretical Framework

In accounting practice and audit performance, detection of creative accounting practices in financial statements, in most cases, is analysed from the perspective of audit- fraud risk factors identification and fraud risk assessment. But in interdisciplinary scientific research of Informatics, Accounting and Audit, the analysis of models that can help detect creative accounting practices and fraudulent issues in the financial statements of corporate organizations are sometimes very complex in the Audit process. As a result, theoretical research studies often investigate issues of creative accounting in financial statements and their possible predictions and detections by means of financial ratios.

Students of Cornell University while using the M score model also correctly predicted and identified Enron as an earnings manipulator, even when experienced financial analysts failed to do so [21]. The model also correctly identified 12 of the 20 biggest frauds from 1997-2002, including Enron, Global Crossing and Adelphia [17].

Okoye and Nwoye [22] carried out an historical study of Cadbury Nigeria Plc for the years 1995 – 2013, with 2002 – 2006 serving as the experimental years for the Beneish 8-Predictive Ratios confirmation, and made the same unique findings as earlier obtained by the federal government through her relevant regulatory agencies investigating the scandal.

Summary of Empirical Review

S/N	Name	Date	Topic	Methodology	Findings
1	Okoye, E.I. & Alao, B.B. [23]	2006	The ethics of creative accounting in financial reporting: The challenges facing regulatory agencies in Nigeria	Survey	Creative accounting significantly influences both the abuse of accounting policy choices among managers of companies and the manipulation of records of transaction depicted in companies' financial reports,
2.	Umoren, A.C.., Oyerinde, D. & Odejayi [6]	2010	Determinants of Creative Accounting	Survey	Employees and top management compensation package tied to performance, as well as existing loopholes in local GAAP, flexibility in accounting standards relied upon by preparers of financial statements, has led to indulgence in creative accounting practices.
3.	Osahon, O.H. [7]	2012	Creative Accounting and Firm's Market Value in Nigeria	Survey	The practice of creative accounting significantly and positively impacts on firms' value in Nigeria, amidst affecting their share price.
4.	Akenbor, C.O. & Ibanichuka, E.A.L.[8]	2012	Creative Accounting Practices in Nigerian Banks,	Survey	Creative accounting practices influences market shares of Nigerian Banks.
5.	Uwuigbe, O.R., Fagbemi, T.O., & Anusiem, U. [9]	2012	The Effects of Audit Committee and Ownership Structure on Income Smoothening In Nigeria: A Study of Listed Banks,	Empirical	Banks' ownership structure as well as banks with a higher proportion of non-executive directors in their Audit committees tend to have positive deterrence influence on the Income smoothing practices in the banks studied.
6.	Sanusi, B. & Izedonmi, D.F. [10]	2014	Nigerian Commercial Banks and Creative Accounting Practices	Survey	Creative accounting practices in Nigerian commercial banks help boost the market value of shares; even as users of accounting information are adversely affected by its practice in Nigeria.
7.	Eyira, C.M. and Okeoma, E.C. [24]	2014	The Impact of Creative Accounting on Organizational Effectiveness: A Study of Manufacturing Firms in Nigeria	Empirical	Manufacturing firms in Nigeria underperform but practice creative accounting to appear legitimate.
8.	Onoja, E.E. & Adaaja, O.E. [25]	2015	The Effects of Creative Accounting and Its Burden on Auditors' Responsibilities in Nigeria	Survey	There is a wide gap between the respondents' expectation and the present statutory requirements for auditors.
9.	Abu, J.A. & Adetula, S.L. [12]	2015	Accounting Practice: Implication On Investors	Survey	Commendable number of shareholders has one time or the other suffered significant investment loss after taking investment decisions despite possessing the ability to analyse financial statements.
10.	Ijeoma. N.B. [13]	2015	Empirical analysis on the use of forensic accounting techniques in curbing Creative accounting	Survey	The emergence of forensic accountants has restored confidence in the credibility of corporate firms and their report.

SOURCE: Author's Empirical reviews

3. METHODOLOGY

This research is quantitatively and deductively designed to focus only on all manufacturing companies that made the Forbes 2015 top 2000 global companies list such that the published financial figures of these selected manufacturing companies, as extracted from their financial statements, were maximized for the predictive ratios analyses purpose.

This is also a positive response to the gap earlier noted in the research of Creative Accounting practice in Nigeria, which in most were often executed within the financial/banking sectors of Nigeria without empirical considerations given to such studies.

However, only one company - Dangote Cement Company, is sampled considering the fact that the company is the only manufacturing company in the list of the four (4) Nigerian companies that made the list of Forbes 2015 top 2000 companies (the other three companies were banks namely- Zenith Bank Nigeria Plc, First Bank Holdings and Guaranty Trust Bank Nigeria Plc). Moreso, the company is reputed for being the most capitalized company on the Nigerian Stock Exchange market.

The study adopts the Beneish 8-Predictive Variables, Altman Z-Scores, Mann U Whiyney Test, and the Wilcoxon Signed Rank statistical tools for all analyses carried out using SPSS version 22.

4. DATA ANALYSIS, RESULTS AND DISCUSSION

Outlined below is the output of the Beneish 8 Predictive Ratios analyses, and the Altman Z-Score computations.

In order to enhance readers understanding of the above outputs of the Predictive Ratios analyses, their implications and the strength of their effects on the company's future corporate governance practices (based on their individual given benchmarks), we took further step to classify them into three categories namely Risk situation Predicted, Grey Region situation Predicted and No Risk situation Predicted.

In Table 2 is the tabular summary of this categorical classification of Dangote Cement Company's risks situation that may affect her going concern position in the future, if not constructively monitored.

Table 2 clearly shows that out of the 130 assessment carried out on Dangote Cement's financial reports for the years 2001, 2003-2015 [26,27], 41.54% of such assessments fell within the Risk Situation region implying the presence of pressure and tendencies of the company subscribing to creative accounting practices as the years go by; 11.54% fell within the warning region revealing that the company's position on good corporate governance may be standing on a slippery ground, while 46.92% of the result obtained were on the No Risk situation region portraying a no-cause for alarm picture. This implies that External Auditors to Dangote Cement Plc must maintain extra vigilance if the going concern position of the company is to be preserved.

The outcome of the Altman Z-scores equally attest to this, seeing that Benue Cement Company/Dangote Cement (from the records of her published financial statements) except in 2013, occupied some serious illiquidity position from 2000 even before their take over by Dangote Industries Limited (Benue Cement Company's Current liabilities outweighed her Current Assets, signifying possible working capital challenges) [26].

4.1 Hypothesis One

Using the Wilcoxon Signed Rank test technique, the results of the Beneish 8-Predictive Ratios and the Altman Z-Scores are analysed to see if the impact their joint application made differed significantly in predicting tendencies of creative accounting in Dangote Cement Company Nigeria Plc for the years covered.

H_{O1}: The impact of jointly applying the Beneish 8-Predictive Ratios and the Altman Z-Scores as effective response measures on practices of Creative Accounting in corporate organisations does not differ significantly.

4.2 Interpretation, Discussion and Decision

Although the chart of the Wilcoxon Signed Rank Test Analysis indicates that there is a positive difference between the two predictive ratios, more emphasis should be placed on the Asymptotic Sig or significance level or Probability value as given in the accompanying output table of the Wilcoxon Analysis towards reaching a meaningful conclusion.

**Table 1. Computed 8-Predictive variables and Altman Z-scores**

Year	DV (CAP)	DSRI	GMI	AQI	SGI	DEPI	SGAI	LVGI	TATA	Z-score
2001	-1.491	1.584	1.654	0.969	1.409	1.017	-1.002	-1.404	-0.025	-2.020
2002	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2003	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-0.602	-5.937
2004	275067.6	353813.8	-1.508	0.504	2.558	0.135	-293241.2	-0.832	0.435	-2.315
2005	3572585.61	4.093	1.805	103.4	40051	0.870	-4.055	-0.725	-6.781	-0.980
2006	-2.354	0.403	1.129	1.017	1.505	0.847	-1.058	-0.667	0.014	0.153
2007	-2.657	1.306	0.972	1.087	0.908	0.876	-1.175	-1.036	-0.073	-0.225
2008	-3.235	0.049	1.012	9.556	3.006	2.268	-0.716	-0.931	-0.318	0.473
2009	161.18	12.829	0.803	377.25	2.127	0.556	-1.096	-0.761	-0.029	1.825
2010	47.489	2.498	1.035	109.81	5.785	1.055	-0.566	-0.886	0.048	2.418
2011	-3.095	0.142	1.015	2.259	1.164	0.365	-1.022	-0.938	-0.092	2.215
2012	-1.375	2.010	0.939	0.147	1.213	2.896	-1.348	-0.760	0.027	2.904
2013	-1.556	1.532	0.913	2.597	1.299	1.013	-1.196	-0.919	-0.091	3.001
2014	-3.110	0.264	1.052	1.169	0.999	1.089	-1.005	-1.108	-0.005	2.357
2015	-2.131	1.562	0.983	1.169	1.048	0.866	-1.155	-0.992	-0.050	2.398
Benchmark	> -2.22	>1.465	>1.193	>1.254	>1.607	>1.0	$\leq$-1.0	>1.0	>0.031	1.8 – 2.7

Source: Authors computation from 2000 – 2015 Dangote Cement Plc financial statements

Table 2. Summary of risks situation predicted from Dangote Cement's financial reports

IVs	Risk situation predicted	Grey region situation predicted	No risk situation predicted	Total no. of years assessed
DSRI	8	1	4	**13**
GMI	2	3	8	**13**
AQI	6	3	4	**13**
SGI	5	5	3	**13**
DEPI	4	-	9	**13**
SGAI	8	-	5	**13**
LVGI	-	-	13	**13**
TATA	2	2	9	**13**
CAP	8	-	5	**13**
Z-SCORE	11	1	1	**13**
TOTAL	**54**	**15**	**61**	130
%	41.54%	11.54%	46.92%	100%

Source: Authors' computation
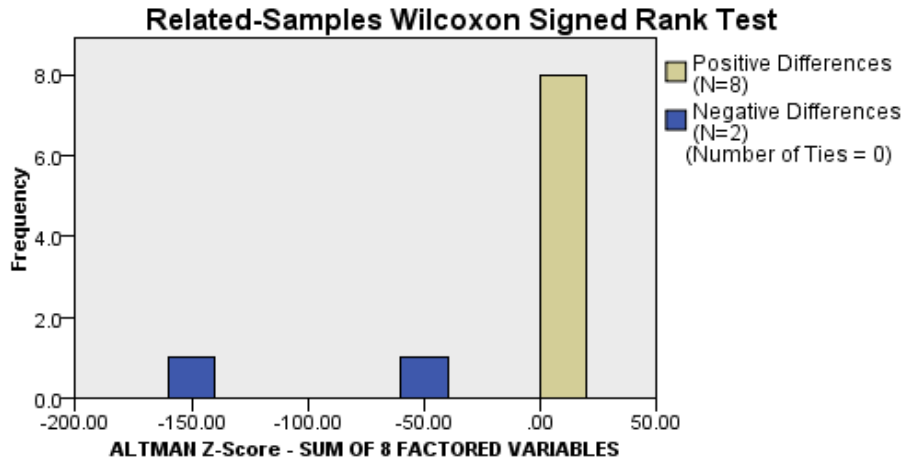
Fig. 1. Wilcoxon Signed Rank Test outcome

The above outcome of the Wilxocon Signed test carried out reveals that there is no significant difference in the impact the joint application of Beneish 8-predictive Ratios and the Altman Z-score model has on any investigation into creative accounting practices in predicting possible tendencies of such practices in any corporate organisation in Nigeria.

This is because, the Asymptotic Sig or significance level or Probability value (P-value) obtained in the analysis (.386) is greater than 0.05.

Recall that when P-value > 0.05, no significant difference can be said to exist between the two group of items being ranked and evaluated. But when P-value $\leq$ 0.05, a statistically significant difference can be said to exist.

This implies that the adequate employment and application of the Altman Z-Scores ratios on figures of Dangote Cement Company'a published financial reports [27], which had earlier been subjected to the Beneish 8-predictive ratios' scrutiny, helps complement the outcome of the Beneish 8-predictive ratios computation towards reaching a constructive resounding conclusion on the financial statement data integrity/quality and the consequent financial health of the cement giant in Nigeria.

This can be corroborated with the results of the Altman Z-score which clearly show that BCC/Dangote Cement had some serious liquidity challenges from 2006 – 2011, through 2013 to 2015. These lapses alone is presumed to have the capacity of placing the company under pressure from time to time, even to considering creative accounting practices as a reliable alternative to making the books appear good and attractive annually. The company's Creative Accounting Predictors (CAP) for 2009, 2010, 2012, 2013, and 2015 equally lend support to this findings (these indicators agreater than -2.22 CAP benchmark).

4.3 Hypothesis Two

Using the Mann Whitney U test technique, the indictors of the Beneish 8-predictive variables in the pre-IFRS (2006 – 2010) and post-IFRS (2011 – 2015) periods- 10 years is analysed to see if there is any significant difference in the findings made during these periods.

H_0: The predictive implications of the Beneish 8-Predictive Ratios in the pre and post IFRS reporting periods do not differ significantly.

4.4 Discussion, Interpretation and Decision

The result of the Mann Whitney U test carried out above shows that there is no significant difference in the predictive implications of the Beneish 8-Predictive Ratios in the pre and post IFRS reporting periods of Dangote Cement Company. This can be seen from the Probability value (p-value) of .754 obtained in the analysis carried out which is represented as Asymptotic Sig in the above table.

Independent-Samples Mann-Whitney U Test

IFRS Adoption
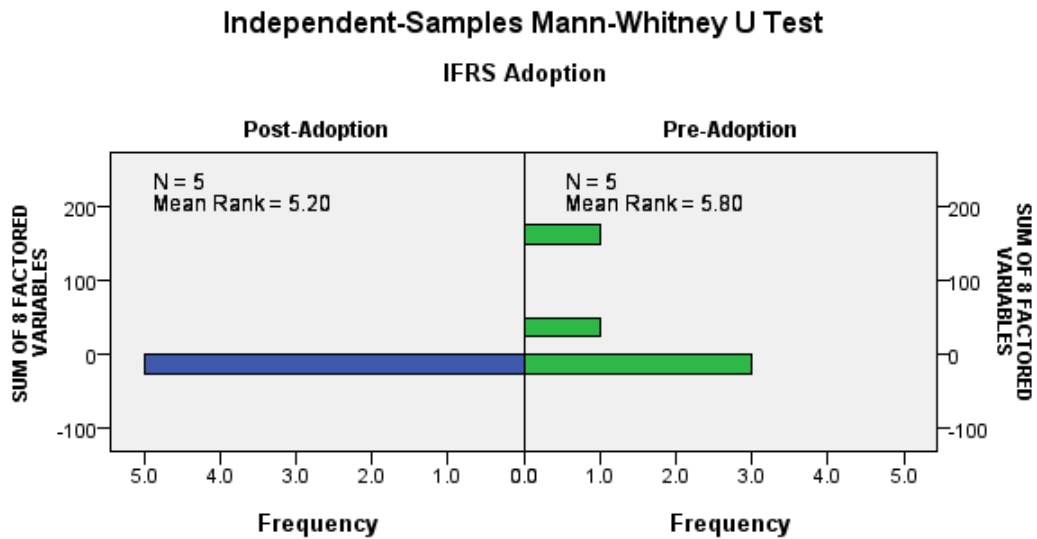
Total N	10
Mann-Whitney U	11.000
Wilcoxon W	26.000
Test Statistic	11.000
Standard Error	4.787
Standardized Test Statistic	-.313
Asymptotic Sig. (2-sided test)	.754
Exact Sig. (2-sided test)	.841

Fig. 2. Mann Whitney U test outcome

For the benefit of arriving at a constructive and meaningful research result for this study, we will reject the alternate hypothesis and accept the null hypothesis when p-value > 0.05, otherwise, we will be left with no other option but to accept the null hypothesis and reject the alternate hypothesis. More importantly, it should be noted that a p-value greater than 0.05 only signifies that there is no significant difference between the scores of the Pre and Post IFRS predictive results obtained in the Beneish 8-Predictive Ratios analysis. However, the reverse is often the case when the p-value is equal to or less than 0.05. This usually implies that a significant difference situation between the scores of the Pre and Post IFRS predictive results as obtained exist.

Since the p-value (.754) is not less than 0.05, we accept the null hypothesis and reject the alternate hypothesis to portray that no significant difference in the predictive implications of the Beneish 8-Predictive Ratios (as earlier shown above) in the pre and post IFRS reporting periods of Dangote Cement Company exist.

More explanatory evidence to this conclusion can also be gathered from the fact that both reporting regimes (based on our findings) are red-flagged for possible occurrences of creative accounting practices. This unique finding also appear to agree with a scholarly opinion by Nwoye, Obiorah and Ekesiobi [28] who held that the adoption and due compliance of corporate organisations to the guidelines of IFRS does not entirely determine the integrity and quality of the financial data so disclosed by the companies' managements. The entity Executives' collective commitment to maintain good corporate governance practices during compliance with the requirements of IFRS will go a long way to secure and sustain an atmosphere of faithful representation within the public entreprise.

5. CONCLUSION AND RECOMMENDA- TIONS

As Nigerian companies approach her half a decade historical adoption of and compliance to the guidelines of IFRS in the preparation of her financial statements, efforts should be intensified at securing the data integrity/quality of the financial reports.

Seeing that the adoption of IFRS by companies in Nigeria (based on the analysis and findings of hypothesis two) does not entirely guarantee a creative accounting free atmosphere, Professional Accountants must, as a result, tighten up their audit belt firmly towards ensuring that greater emphasis are also placed on the data integrity/quality of the financial reports and not just on their IFRS disclosure quality.

We also recommend that the adoption and application of more than one creative accounting predicting ratios/models be embraced by professional Accountants and Auditors for the sake of obtaining more reliable evidence or findings that can help boost effective prevention and deterrence of creative accounting practices in the future.

6. IMPLICATION OF THE STUDY

The outcome of this study which is verifiable by any competent researcher upon careful application of the Beneish 8-predictive Ratios and the Altman Z-Score Ratio now serves as a reliable bridge mitigating the long existing gap between the Accounting Academics' theoretical (largely used) and empirical (rarely used) approaches to creative accounting research in Nigeria.

It also changes the Nigeria Accounting Academics' sole emphasis attitude to creative accounting studies in the banking sector by paving room for an equitable level of attention to the manufacturing industries.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Cynthia H. Analysis ratios for detecting financial statement fraud. ACFE Fraud Magazine; 2005.
2. Beneish MD. Detection of earnings manipulation - Beneish Model; 1999. Available:http://e8alpha.blogspot.com/2012/03/detection-of-earnings-manipulation.html
3. Altman E. Predicting financial distress of companies: Revisiting the Z-score and ZETA models; 2000. Available:http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:PREDICTING+FINANCIAL+DISTRESS+COMPANIES:+REVISITING+THE+Z-SCORE+AND+ZETA®+MODELS#0 (Accessed 10 March 2017)

4. Kanapickiene R, Grundiene Z. The model of fraud detection in financial statements by means of financial ratios. Procedia - Social and Behavioral Sciences. 2015;213:321-327.
    Available:www.sciencedirect.com

5. Wilkinson B. Predicting the risk of corporate failure for Australian listed companies: A fresh approach using probability based tri dimensional modeling. Thesis Collection, University of Wollongong; 2009.
    Available:http://ro.uow.edu.au/theses/3092

6. Umoren AO, Oyerinde D, Odejayi D. Determinants of creative accounting. The Social and Management Scientists. 2010; 4(1):90-98.

7. Osahon OH. Creative accounting and firm's market value in Nigeria. Arabian Journal of Business and Management Review. 2012;2(3):38-50.

8. Akenbor CO, Ibanichuka EAL. Creative accounting practices in Nigerian banks. International Multidisciplinary Journal. 2012;6(3):23-41.

9. Uwuigbe OR, Fagbemi TO, Anusiem UF. The effects of audit committee and ownership structure on income smoothening in Nigeria: A study of listed banks. Research Journal of Finance and Accounting. 2012;3(4):26-33.

10. Sanusi B, Izedonmi PF. Nigerian commercial banks and creative accounting practices. Journal of Mathematical Finance. 2014;4:75-83.

11. Yadav B. Creative accounting: An empirical study from professional prospective. International Research Journal Consortium. 2014;3(1):38-53.
    Available:www.irjcjournals.org

12. Abu JA, Adetula SL. Creative accounting practice: Implication on investors. Journal of Educational Research in Natural and Social Sciences (JERNASS). 2015;1(1): 109-119.

13. Ijeoma NB. Empirical analysis on the use of forensic accounting techniques in curbing creative accounting. International Journal of Economics, Commerce and Management. 2015;3(1):1-15.
    Available:http://ijecm.co.uk/

14. Balaciu D, Madalina PC. Is creative accounting a form of manipulation? 2008;935-940.

15. Karim AM, Fowzia R, Rashid MM. Cosmetic accounting practices in developing countries: Bangladesh perspectives. World Journal of Social Sciences. 2011;1(3):1-15.

16. Groşanu A, Răchişan PR, Berinde SR. Creative accounting, an expression of the disconnection between accounting and taxation. Annales Universitatis Apulensis Series Oeconomica. 2012;14(1):66–72.

17. Shortzilla. Using Beneish's M score to detect short opportunities; 2012.
    Available:http://www.shortzilla.com/blog/using-beneishs-m-score-to-detect-short-opportunities/

18. Gherai DS, Balaciu DE. From creative accounting practices and Enron phenomenon to the current financial crisis. Annales Universitatis Apulensis Series Oeconomica. 2011;13(1):34-41.

19. Voisin F. What is the Beneish M-Score? 2012.
    Available:http://www.frankvoisin.com/2012/05/30/what-is-the-beneish-m-score/

20. Aris NA, Arif SMM, Othman R, Zain MM. Fraudulent financial statement detection using statistical techniques: The case of small medium automotive enterprise. The Journal of Applied Business Research. 2015;31(4):1469-1478.

21. Brickel D. The Beneish M-Score: Identifying earnings manipulation and short candidates. Stockanalyst; 2011.
    Available:http://www.istockanalyst.com/finance/story/5179574/the-beneish-m-score-identifying-earnings-manipulation-and-short-candidates

22. Okoye EI, Nwoye UJ. Skeptically forestalling fraudulent financial reporting in publicly listed manufacturing companies in Nigeria: The role of the Beneish Model. Journal of Global Accounting. 2014;3(1):35-44.

23. Okoye EI, Alao BB. The ethics of creative accounting in financial reporting: The challenges of regulatory agencies in Nigeria. Certified National Accountant. 2008;16(1):45-54.

24. Eyira CM, Okeoma EC. The impact of creative accounting on organizational effectiveness: A study of manufacturing firms in Nigeria. British Journal of Economics, Management & Trade. 2014;4(12):2107-2122.

25. Onoja EE, Adaaja OE. The effects of creative accounting and its burden on auditors' responsibilities in Nigeria. Journal of Good Governance and Sustainable Development in Africa (JGGSDA). 2015;2(4):96-108.

26. Annual Accounts and Report, 2000 - 2009. Benue Cement Company Nigeria Plc.
27. Annual Accounts and Report, 2010 - 2015. Dangote Cement Company Nigeria Plc.
28. Nwoye UJ, Obiorah JN, Ekesiobi C. Assessing the risk of fraud in published IFRS and Nigerian GAAP financial reports: A comparative application of the Beneish Models. IUP Journal of Accounting Research and Audit Practices, India. 2015; 14(1).
Available:http://vlex.in/vid/assessing-the-risk-of-576848710

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