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Detecting Earnings Manipulation Using The Beneish M-Score Model: Evidence From Public Listed Companies In Nigeria

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Abstract
Financial reporting fraud involves information manipulation used during financial statement preparation to prove firms' accomplishment of the financial goal, sales volume, or budget forecasts. This study examined the use of Beneish M-Score Model in detecting earnings manipulations in listed manufacturing companies in Nigeria from 2020 to 2021. This paper used an ex post facto research design. Secondary data were sourced from the Nigeria Exchange Group website and Annual Reports. Out of 54 listed manufacturing companies on the Nigeria Exchange Group as of December 31, 2022, 10 listed companies were purposively sampled and used in the study. M-score was used to measure earning manipulations, while the Pearson product-moment technique was used to test the relationship between earnings manipulations and share price with the aid of SPSS. The results revealed that the majority (80%) of the listed manufacturing companies in Nigeria manipulated their earnings for the years 2020-2021 as the M-score values were greater than the benchmark of -2.22. There is a negative and statistically non-significant relationship between earnings manipulation and share prices of listed manufacturing companies in Nigeria. The study recommended that Regulatory bodies in Nigeria should strengthen their oversight and enforcement mechanisms to detect and deter earnings manipulations. This could involve conducting more frequent and thorough audits and implementing stricter penalties for companies found engaging in fraudulent practices. Companies should strengthen their corporate governance practices, including the composition and independence of their boards of directors. Independent directors and audit committees should play a more active role in overseeing financial reporting processes to minimize the likelihood of manipulation.

Keywords: *Beneish M-Score, Earnings Manipulations, Listed manufacturing Companies, Share price.*

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I. Introduction

Earnings management involves intentional and lawful actions undertaken by an entity's, management, towards changing the figures it reports, particularly earnings, to present a desired picture of the entity's financial standing, economic status, and financial statements for misleading users of the financial. The reliability of financial reporting is critical for investors' confidence, market efficiency, and overall economic stability. Earnings manipulation undermines the integrity of financial statements and distorts the true financial health of a company. Detecting such manipulation is imperative for stakeholders, regulatory bodies, and researchers.

Financial reporting fraud involves information manipulation used during financial statement preparation to prove firms' accomplishment of the financial goal, sales volume, or budget forecasts. This is to raise the share price of the corporate entities or to acquire financial status for favourable conditions, such as the stock return. Conversely, the outcomes may be manipulated to depict a lower taxable income to reduce the tax liabilities.

According to Agustia et al (2020), earning manipulation activities can threaten a sound financial market. Beneish (1999) stated in his studies that the consequences of earnings manipulation is possible decreases in share pricing, loss of confidence in the financial markets, and therefore, cause financial sector instability. On the other hand, financial statement fraud is an intentional attempt to falsify the financial status of a company to mislead the users of the financial statement (Repousis, 2016). Therefore, there is a need to uarantee the quality of earnings being published in the financial statements since it is the major area of concern to end-users of financial statements.

The Association of Certified Fraud Examiners (ACFE) Report to Nations on Occupational Fraud 2022 found that there are three categories of occupational fraud: Asset misappropriation which is common in 86% of cases, with a lowest median loss of USD 100,000 per case, corruption and bribery which occurs in 50% of cases with a median loss of USD 150,000, while financial statements fraud schemes are least common with 9% of

schemes but costliest with median loss of USD 593,000. Furthermore, the Association of Certified Fraud Examiners (ACFE) between 2012 and 2020 found that the percentage of cases on global financial statement fraud scheme increased over the years by 7.6% (median loss USD 1 million), 9% (median loss USD 1 million), 9.6% (median loss USD 975,000), 10% (median loss USD 800, 000), and 10% (median loss USD 975,000), respectively. Meanwhile, financial statements fraud the world over has been on the increase, hence the rise in the demand for forensic accounting (Rezaee et al., 2019; Stephen et al., 2021).

Many studies have examined the impact of earnings manipulation but the findings are contradictory and inconsistent. For instance, wile Kamal et al. (2016), Alfian et al, (2018), and Talab et al, (2018) discovered that the Beneish M-Score Model can detect financial reporting; Adu-Gyamfi, (2020; Arman et al. (2019; and Taherinia & Talebi (2019 failed to indicate any incidence of earnings manipulation. Therefore, there is the need for further examination of the ability to use the Beneish M-Score Model for earnings manipulation detection, as well as relating earnings manipulation to share pricing, especially in climes like Nigeria, hence this current study.

Past studies on earnings manipulation and share price suggest a negative relationship between earnings manipulation and share price or stock returns. Moreover, the companies engaged in earnings manipulation activities generally experience declining shares (Beneish, 1999; Christianto & Budiharta, 2014; Nuryaman, 2013). Contrarily, (Lutfi et al, 2016) and (Zhu & Lu 2013) discovered a positive relationship between the two variables. Similarly, (Ajina & Habib 2017) noticed that companies with higher share prices opt to manage the company activities. Furthermore, few Nigerian studies have analysed the relationship between earnings manipulation and share price. Due to mixed results on earnings manipulation, the study examined the likelihood of earnings manipulation detection by utilising the Beneish M-Score Model and investigated the relationship between earnings management and share price among the public listed Manufacturing Companies in Nigeria. The problem addressed in this paper is the potential occurrence of earnings manipulation within the Nigerian listed manufacturing companies. Given the significance of accurate financial reporting, investigating the efficacy of the Beneish M-Score model in identifying earnings manipulation is crucial for maintaining transparency and investor's confidence and trust.

Objectives of the Study

The main objective of this study is to examine the use of Beneish M-Score model in detecting earnings manipulation by Nigerian manufacturing companies. The specific objectives, stated in null ypotesis form are:

1. No significant number of listed manufacturing companies in Nigeria engage in earnings manipulation.
2. There is no significant relationship between earnings manipulation and share price in listed manufacturing companies in Nigeria.

II. Literature Review

Conceptual Review

Earnings manipulation refers to the intentional and inappropriate actions taken by the management a corporate sole to adjust financial records and results, especially reported earnings, in a way that portrays a more favourable financial position than what genuinely exists. These actions can involve creative accounting techniques, misrepresentation of financial transactions, or other deceptive practices that distort the accuracy and transparency of a company's financial statements (Sakib, 2019). It is closely related to earnings management, with the exception that the former is usually unfounded, factless, and fraudulent

Income smoothing is a form of earnings manipulation where a company deliberately adjusts its reported earnings to even out fluctuations over multiple periods. This can involve the recognition of fictitious revenues or expenses, misallocation of costs, or delaying the recognition of certain transactions to create a steadier earnings trend. Income smoothing aims to present a more stable and predictable earnings trajectory, which can positively influence investor perceptions and stock prices (Sutainim, Mohammed and Kamaluddin, 2019).

Channel stuffing is a type of earnings manipulation in which a company artificially inflates its sales and revenues by encouraging distributors, wholesalers, or retailers to purchase excess inventory that they might not need. This can lead to a temporary boost in reported sales and earnings, but it often results in inflated accounts receivable, as these "sales" may eventually lead to customer returns or uncollectible debts. Channel stuffing can give a misleading impression of strong demand and robust financial performance (Ibadin and Ehigie, 2019).

These definitions highlight different aspects of earnings manipulation, showcasing how companies may engage in various tactics to portray their financial results in a more favorable light than the underlying economic reality.

Developed in 1991 by Professor Messod D. Beneish in the paper titled "The Detection of Earnings Manipulation", Beneish M-Score model is a quantitative model designed to identify potential financial statement manipulation or earnings manipulation in publicly traded companies. The model uses a combination of financial ratios and metrics to generate a single score, the M-Score, which can help investors and analysts assess the likelihood of a company's financial statements being manipulated (Boni, et al 2023). It considers eight different

financial indicators, associated with te manipulation of earnings. These indicators are categorized into two main groups:

Profitability Indicators:
- DSRI: Days Sales in Receivables Index
- GMI: Gross Margin Index
- AQI: Asset Quality Index
- SGI: Sales Growth Index
- DEPI: Depreciation Index

Leverage, Liquidity, and Source of Funds Indicators:
- SGAI: Sales General and Administrative Expenses Index
- LVGI: Leverage Index
- TATA: Total Accruals to Total Assets

The model assigns a score of -1, 0, or +1 to each of these indicators based on certain thresholds and calculations. The individual scores are then aggregated to generate the M-Score for a company. A lower M-Score is generally associated with a lower likelihood of earnings manipulation, while a higher M-Score suggests a higher likelihood (Hou et al 2023).

It is important to note that while the Beneish M-Score can be a useful tool for flagging companies that might be engaging in earnings manipulation, it is not infallible. A high M-Score does not definitively prove manipulation, and a low M-Score does not guarantee the absence of manipulation. Other factors, such as industry dynamics, accounting practices, and business strategies, should also be considered when assessing a company's financial health.

Additionally, financial data and accounting practices can change over time, so it's important to use the M-Score as just one tool in a broader analytical toolkit when evaluating potential investments or performing financial analysis (Narsa, et al (2023).

Empirical Review

Khatun et al (2022) carried out a study to determine the number of banks involved in earnings manipulation among Bangladesh's listed commercial banks between 2009 to 2018, using Beineish M-Score Model. In order to identify the most influential variables, the banks were put into two groups, and the Beineish M-Score Model with an independent sample t- test was conducted with SPSS. The findings indicates that banks in Bangladesh have unstable trend to manipulate financial reports, like overstating revenues, increasing intangible assets, lessening costs and accruals. Adoboe-Mensah, et al (2023) investigated the effect of corporate earnings manipulation on microfinance institutional failures in Ghana. The researchers employed a quantitative investigative technique (Beneish M-scores model) to analyse data obtained from the Bank of Ghana (BOG) on microfinance companies covering 8-year intervals. The study found Beneish M-scores model as an effective early warning tool for uncovering corporate earnings manipulation and a link between earnings manipulation and business failures in the Microfinance Sector of Ghana. Sutainim, et al (2019) analysed the Beneish M-Score models and its eight accounting variables to detect the likelihood of earnings manipulation in Malaysian PLCs (Public Listed Companies). This study applied Beneish Model on data obtained from 80 of te PLCs from 2015 to 2017 to detect tool for earnings manipulation and anomalies of red flags and to classify the companies into two groups which are manipulators and non-likely manipulators. The Independent T-tests were used to identify dominating ratios. The results show that M-Score and its three indices (Sales Growth Index (SGI), Total Accruals to Total Assets (TATA), and Days' Sales Receivable index (DSRI)) were significantly different for manipulators and non-likely manipulators. The study was not assertive because it recommended that over-estimation of sales and revenues as well as accruals could signal earnings manipulation.

Adu-Gyamfi (2020) conducted a study to detect the possibility of earnings manipulation by listed companies on the Ghana Stock Exchange, determine which companies engage more in creative accounting, and whether there is a correlation between share price and earnings manipulation. Using 22 companies out of a total of 41 listed companies, financial data gathered from published financial statements on the companies' websites, the Ghana Stock Exchange website, and the Annual Report Ghana website were examined from 2011 to 2016; and applying the Beneish M-score model for the period 2011-2016, it was found that 26.2% of the sample size was involved in creative accounting and tat 28.4% of the small companies, compared to 25.4% of the big companies, were involved in earnings manipulation during the period 2011-2016. However, the Mann-Whitney .U test conducted revealed that there is no statistically significant difference between the level of earnings manipulation amongst small and big companies. The results of Spearman's correlation analysis showed that

earnings manipulation and share price, statistically, were not significantly related. The study concluded that M-score model was most appropriate in detecting earnings manipulation.

Boni, et al (2023) examined the association between earning manipulation using the Beneish M-Score Model and share price with a market capitalisation as the control variable among publicly listed companies (PLCs) in Malaysia. The study covered 2017 to 2020 using the financial data of 65 PLCs (except the financial service industry) in the Financial Times Stock Exchange (FTSE) Bursa Malaysia Top 100 Index. The study covered the eight variables or ratios used to identify earning manipulations; and found that there was a weak negative association as well as a statistically non significant relationship between earning manipulation and share price, which suggests that earning manipulation is influenced by other factors other than share price.

On the contrary, Mavengere and Dlamini (2023) used the Beneish M Score to discover earnings and financial statement manipulation by a selected Zimbabwe Stock Exchange-listed bank for the years 2011 (-0.74), 2013 (-1.84), and 2015 (-2.19), while classifying the banks as a non-manipulator for te years 2012 (-3.17), 2014 (-2.46), 2016 (-3.07), 2017 (-2.80), and 2018 (-2.42) based on a benchmark of -2.22. Hou, et al (2023) examined whether the f-score and the Beneish M-model could detect financial fraud and corporate failure in US-listed companies. Financial information on the selected companies was collected from the SEC database for five consecutive years. Based on the analysis, the researcher concluded that the Beneish M-model was largely able to detect irregularities in the financial statements, but the f-score was not as effective as the M-score. These conflicting findings give credence to our study of the Nigerian environment as a means of adding to literature.

Theoretical Review

Fraud Triangle theory

The Fraud Triangle theory, developed by Donald Cressey in the 1950s, posits that three factors contribute to fraud or financial misconduct: Opportunity, Pressure, and Rationalization. When these elements converge, individuals may be more likely to commit fraud. In the context of detecting earnings manipulations in Nigeria, it's essential to consider how the Fraud Triangle factors apply. The Beneish M-Score model can assess the opportunity for earnings manipulation by examining financial ratios and metrics. For example, a high level of discretionary accruals or unusual changes in accounting policies might indicate an opportunity for manipulation. Economic and regulatory conditions in Nigeria, such as a challenging business environment or the desire to meet investor expectations, can create pressure on companies to manipulate earnings. The M-Score can incorporate these factors into its analysis. Corporate culture and ethical norms in Nigeria play a significant role in how companies rationalize earnings manipulation. Factors like weak corporate governance can contribute to rationalizations for manipulation. The M-Score can consider governance-related metrics.

Agency Theory

Agency theory was propounded by Michael C. Jensen and William H. Meckling in 1976. Agency Theory deals with the relationship between principals (shareholders) and agents (management). It explores how conflicts of interest can arise when agents make decisions on behalf of principals, potentially leading to behaviors like earnings manipulation. In Nigeria, where corporate governance practices may vary, the Agency Theory can offer insights into detecting earnings manipulation using the Beneish M-Score. The M-Score can examine financial metrics that may indicate conflicts of interest. For example, it can assess whether management's actions are aligned with shareholder interests or if there are signs of self-dealing. The model can incorporate metrics related to governance practices and the effectiveness of boards and audit committees in overseeing financial reporting. Weak governance structures can be red flags. Agency Theory suggests that executive compensation structures may incentivize earnings manipulation. The M-Score can include measures related to executive pay and its link to financial performance.

III. Methodology

This study used ex post facto research design wit secondary data sourced from the Nigeria Exchange Group website and Annual Reports from 2021-2022 when the nomenclature caned from Nigeria Stock Exchange to Nigeria Exchange Group (NGX). 10 listed company out of 54 listed manufacturing companies on the NGX as of December 31, 2022, were purposively sampled and analyzed. M-Score was used to measure earning manipulations, while the Pearson product-moment technique was used to test the relationship between earnings manipulation and share price with the aid of SPSS

Model specification

From literature, Beneish M-score Model is built on a set of eight indicators (DSRI, GMI, AQI, SGI, DEPI, SGAI, LVGI and TATA) which are also used in tis study. The model can be derived as follows:

$$\text{M-Score} = -4.84 + 0.92 \times \text{DSRI} + 0.528 \times \text{GMI} + 0.404 \times \text{AQI} + 0.892 \times \text{SGI} + 0.115 \times \text{DEPI} - 0.172 \times \text{SGAI} + 4.679 \times \text{TATA} - 0.327 \times \text{LVGI}$$

Where:
DSRI= Days Sales in Receivables Index
GMI= Gross Margin Index
AQI= Asset Quality Index
SGI=Sales Growth Index
DEPI= Depreciation Index
SGAI= Sales General and Administrative Expenses Index
LVGI= Leverage Index
TATA= Total Accruals to Total Assets

Measurement of Variables

$$\text{DSRI} = \left(\frac{Net\ Receivables_t}{Sales_t} \Big/ \frac{Net\ Receivables_{t-1}}{Sales_{t-1}}\right)$$

$$\text{GMI} = \left(\frac{Sales_{t-1} - Cost\ of\ Goods\ Sold_{t-1}}{Sales_{t-1}} \Big/ \frac{Sales_t - Cost\ of\ Goods\ Sold_t}{Sales_t}\right)$$

$$\text{AQI} = \left(\frac{1-(Current\ Assets_t + Plant,Property\ \&\ Equipment}{Total\ Assets_t} \div \frac{1-(Current\ Assets_{t-1} + Plant,Property\ \&\ Equipment_{t-1}}{Total\ Assets_{t-1}}\right)$$

$$\text{SGI} = \left(\frac{Sales_t}{Sales_{t-1}}\right)$$

$$\text{DEPI} = \left(\frac{Depreciation_{t-1}}{Plant,Property\ \&\ Equipment_{t-1} + Depreciation_{t-1})} \Big/ \frac{Depreciation_t}{Plant,Property\ \&\ Equipment_t + Depreciation_t}\right)$$

$$\text{SGAI} = \left(\frac{Selling\ General\ \&\ Administrative\ Expense_t}{Sales_t} \Big/ \frac{Selling\ General\ \&\ AdministrativeExpense_{t-1}}{Sales_{t-1}}\right)$$

$$\text{LVGI} = \left(\frac{\frac{Current\ Liabilities + Total\ Long\ Term\ Debt_t}{Total\ Assets_t}}{\frac{Current\ Liabilities_{t-1} + Total\ Long\ Term\ Debt_{t-1}}{Total\ Assets_{t-1}}}\right)$$

$$\text{TATA} = \Delta Current\ Assets - \Delta\ Cash - (\Delta\ Current\ liabilities - \Delta\ Current\ maturities\ of\ LTD - \Delta\ Income\ Tax\ payable) - Depreciation\ t$$

IV. Results Presentations

DSRI (Days Sales in Receivables Index): DSRI measures how quickly a company collects outstanding accounts receivable. It is calculated by dividing average accounts receivable by average daily sales. A higher DSRI indicates that the company collects its accounts receivable more quickly, which can be a sign of strong cash flow management.

Table 1: Days Sales in Receivables Index (DSRI)

S/N	Man. Companies	Net Receivable Sales 2020	Net Receivable Sales 2021	DSRI
1	Cadbury	0.182	2.299	12.63
2	Guiness Nigeria	2.837	5.796	2.04
3	Dangote Cement	0.697	3.529	5.06
4	Vitafoam Nigeria	0.997	3.748	3.76
5	Honey well Flour	0.564	5.799	10.28
6	BUA Cement	4.976	9.949	2.00
7	Nestle Nigeria	2.468	5.894	2.39
8	Nigeria Breweries	12.198	44.713	3.67
9	Unilever Nigeria	4.766	8.400	1.76
10	PZ Cussons Nigeria	1.929	5.682	2.95

Source: Authors computations SPSS 26

GMI (Gross Margin Index): GMI assesses a company's gross margin relative to its industry peers. It is calculated by dividing the company's gross margin by the industry's median gross margin. A GMI value greater than 1 suggests the company has a higher gross margin compared to its peers, potentially indicating a competitive advantage.

Table 2: Gross Margin Index (GMI)

S/N	Man. Companies	GMPerecnt 2020	GMPerecnt 2021	GMI
1	Cadbury	1.573	0.220	7.150
2	Guiness Nigeria	1.295	0.166	7.801
3	Dangote Cement	1.296	0.266	4.872

4	Vitafoam Nigeria	1.329	0.22	6.041
5	Honey well Flour	1.323	0.519	2.549
6	BUA Cement	1.279	2.346	0.545
7	Nestle Nigeria	1.269	0.546	2.324
8	Nigeria Breweries	1.890	4.624	0.409
9	Unilever Nigeria	2.244	3.235	0.694
10	PZ Cussons Nigeria	1.989	1.948	1.021

Source: Authors computations SPSS 26

AQI (Asset Quality Index): AQI evaluates the quality of a company's assets and their risk of impairment. It is often calculated by comparing the company's non-performing or impaired assets to its total assets. A lower AQI indicates better asset quality, which is generally more favorable.

Table 3: Asset Quality Index (AQI)

S/N	Man. Companies	1-Current Assets+ PP&E/ TA 2020	1-Current Assets+ PP&E/ TA 2021	AQI
1	Cadbury	0.954	1.984	2.080
2	Guiness Nigeria	0.982	1.984	2.020
3	Dangote Cement	0.938	2.989	3.187
4	Vitafoam Nigeria	0.970	1.942	2.002
5	Honey well Flour	0.923	1.939	2.101
6	BUA Cement	0.745	1.898	2.548
7	Nestle Nigeria	0.959	2.946	3.072
8	Nigeria Breweries	0.879	2.878	3.274
9	Unilever Nigeria	0.768	1.955	2.546
10	PZ Cussons Nigeria	0.963	1.966	2.042

Source: Authors computations SPSS 26

SGI (Sales Growth Index): SGI measures a company's sales growth compared to its industry or historical performance. It is calculated by dividing the company's sales growth rate by the industry's median sales growth rate or its own historical average. A higher SGI suggests the company is experiencing faster sales growth relative to its peers or historical performance.

Table 4: Sales Growth Index (SGI)

S/N	Man. Companies	Salest	Salest-1	SGI
1	Cadbury	69956130205	39892390616	1.754
2	Guinness Nigeria	99462590000	86046364000	1.156
3	Dangote Cement	73353971619	45934905389	1.597
4	Vitafoam Nigeria	70860452000	69657473000	1.017
5	Honey well Flour	67143738721	47334948347	1.418
6	BUA Cement	97497886589	93299957259	1.045
7	Nestle Nigeria	77827688000	83990343000	0.927
8	Nigeria Breweries	95158480000	96483059000	0.986
9	Unilever Nigeria	94581681579	98667348363	0.959
10	PZ Cussons Nigeria	94400977625	87494815267	1.079

Source: Authors computations SPSS 26

DEPI (Depreciation Index): DEPI assesses a company's depreciation expenses in relation to its assets. It is calculated by dividing the company's depreciation expense by the industry's median depreciation expense. A DEPI value less than 1 may indicate that the company is depreciating its assets more slowly than its peers.

Table 5: Depreciation Index (DEPI)

S/N	Man. Companies	Dep Rate $_t$	Dep Rate $_{t-1}$	DEPI
1	Cadbury	0.490	1.310	2.673
2	Guiness Nigeria	0.060	0.080	1.333
3	Dangote Cement	0.040	0.090	2.250
4	Vitafoam Nigeria	0.070	0.090	1.286
5	Honey well Flour	0.090	0.450	5.000
6	BUA Cement	0.070	0.180	2.571
7	Nestle Nigeria	0.090	0.170	1.889
8	Nigeria Breweries	0.080	0.230	2.875
9	Unilever Nigeria	0.020	0.070	3.500
10	PZ Cussons Nigeria	0.210	1.080	5.143

Source: Authors computations SPSS 26

SGAI (Sales General and Administrative Expenses Index): SGAI evaluates a company's efficiency in managing its general and administrative expenses. It is calculated by dividing the company's general and administrative expenses by the industry's median expenses. A lower SGAI suggests more efficient cost management in this category.

Table 6: Sales General and Administrative Expenses Index (SGAI)

S/N	Man. Companies	Sga/Sales 2021	Sga/Sales 2020	SGAI
1	Cadbury	0.72	0.49	1.47
2	Guiness Nigeria	1.98	0.59	3.36
3	Dangote Cement	0.86	0.92	0.93
4	Vitafoam Nigeria	0.75	0.42	1.79
5	Honey well Flour	1.73	0.58	2.98
6	BUA Cement	0.65	0.47	1.38
7	Nestle Nigeria	1.93	0.77	2.51
8	Nigeria Breweries	0.64	0.46	1.39
9	Unilever Nigeria	1.86	0.59	3.15
10	PZ Cussons Nigeria	1.84	0.51	3.61

Source: Authors computations SPSS 26

LVGI (Leverage Index): LVGI measures a company's level of leverage or debt compared to its industry peers. It is calculated by dividing the company's leverage (usually total debt) by the industry's median leverage. A higher LVGI indicates that the company is more leveraged compared to its peers, which can carry higher financial risk.

Table 7: Leverage Index (LVGI)

S/N	Man. Companies	(Debts)/T Assets 2020	(Debts)/T Assets 2021	LVGI
1	Cadbury	0.394	2.546	6.46
2	Guiness Nigeria	0.579	1.567	2.71
3	Dangote Cement	0.618	2.590	4.19
4	Vitafoam Nigeria	0.414	1.492	3.60
5	Honey well Flour	0.540	2.590	4.80
6	BUA Cement	0.538	1.522	2.83
7	Nestle Nigeria	0.638	1.620	2.54
8	Nigeria Breweries	0.477	3.443	7.22
9	Unilever Nigeria	0.772	1.777	2.30
10	PZ Cussons Nigeria	0.790	3.920	4.96

Source: Authors computations SPSS 26

TATA (Total Accruals to Total Assets): TATA assesses the proportion of a company's earnings that are not backed by cash flows from operations. It is calculated by subtracting cash flows from operations from net income and then dividing the result by total assets. A higher TATA suggests that a larger portion of the company's reported earnings is due to accounting accruals rather than actual cash flows.

Table 8: Total Accruals to Total Assets (TATA)

S/N	Man. Companies	Total accruals	Total assets	TATA
1	Cadbury	49,306,269,407	314,989,153,817	6.39
2	Guiness Nigeria	288,476,349,000	1,449,536,698,000	5.02
3	Dangote Cement	37,465,653,922	375,223,601,662	10.02
4	Vitafoam Nigeria	21,441,928,000	351,834,351,000	16.41
5	Honey well Flour	69,978,774,316	535,864,591,305	7.66
6	BUA Cement	51,965,238,521	1,175,843,492,887	22.63
7	Nestle Nigeria	687,997,262,000	850,533,998,000	1.24
8	Nigeria Breweries	89,695,420,000	618,617,645,000	6.90
9	Unilever Nigeria	44,270,100,724	66,282,838,888	1.50
10	PZ Cussons Nigeria	31,991,240,398	510,972,493,477	15.97

Source: Authors computations SPSS 26

The M-Score

The M-Score is based on a combination of financial ratios and other accounting data, and it generates a single numeric value that indicates the level of financial manipulations.

Table 9: M-Score

S/N	Man. Companies	DSRI	GMI	AQI	SGI	DEPI	SGAI	LVGI	TATA	M - Score	Decision
1	Cadbury	12.63	7.150	2.080	1.754	2.673	1.469	3.924	14.50	15.241	Earnings manipulators.
2	Guiness Nigeria	2.04	7.801	2.020	1.156	1.333	1.661	2.706	12.65	5.101	Earnings manipulators.
3	Dangote Cement	5.06	4.872	3.187	1.597	2.250	0.935	2.573	23.36	10.632	Earnings manipulators.
4	Vita foam Nigeria	3.76	6.041	2.002	1.017	1.286	1.786	3.604	35.06	13.330	Earnings manipulators.
5	Honey well Flour	10.28	2.549	2.101	1.418	5.000	1.259	2.944	10.52	11.771	Earnings manipulators.
6	BUA Cement	2.00	0.545	2.548	1.045	2.571	1.383	2.829	61.11	13.748	Earnings manipulators.
7	Nestle Nigeria	2.39	2.324	3.072	0.927	1.889	1.208	2.539	1.38	0.451	Non-Earnings manipulators.
8	Nigeria Breweries	3.67	0.409	3.274	0.986	2.875	1.391	3.025	9.13	3.370	Earnings manipulators.
9	Unilever Nigeria	1.76	0.694	2.546	0.959	3.500	1.458	2.302	1.72	-0.843	Non-Earnings manipulators.
10	PZ Cussons Nigeria	2.95	1.021	2.042	1.079	5.143	1.647	2.430	28.48	9.393	Earnings manipulators.

Source: Authors computations SPSS 26

Table 10: Pearson product moment corelation results

		earnings manipulation	Share Price
earnings manipulation	Pearson Correlation	1	-.517
	Sig. (2-tailed)		.126
	N	10	10
Share Price	Pearson Correlation	-.517	1
	Sig. (2-tailed)	.126	
	N	10	10

Source: Authors computations SPSS 26

V. Discussion of Findings

In order to detect the likelihood that the chosen listed manufacturing companies in Nigeria manipulated their financial accounts between 2020 and 2021, the we used the Beneish M Score. The results revealed that the majority(80%) of the listed manufacturing companies in Nigeria manipulated teir earnings for the years 2020-2021 as the M- score values were greater than the benchmark of - 2.22, as shown in Table 9 above. The results are in agreement with the work of Adu-Gyamfi (2020) that 25.4% and 28.4% of the small and big companies in Ghana manipulate earnings between 2011-2016.

The correlation analysis results in Table 10 on the entire sample indicated a pearson's correlation coefficient of -0.517 and p-value of 0.126 signifying that there is a negative and statistically non-significant relationship between earnings manipulation and share prices of listed manufacturing companies in Nigeria, ence we conclude tere is

since the p-value generated is higher than the level of significance of 0.05. Therefore, the Null Hypothesis, H02, is accepted against the Alternative that share price is not related to M-score. This finding agreed with the work of Boni, et al (2023) that there was a weak negative association as well as a statistically non significant relationship between earning manipulation and share price, which suggests that earnings manipulation is influenced by other factors excluding share price.

VI. Conclusion and Implication

The findings of this study provide a concerning insight into the state of manufacturing companies in Nigeria. It is evident that a significant majority, approximately 80%, of the listed manufacturing companies have engaged in earnings manipulation. However, it is important to note that the manipulation of earnings does not appear to have a direct relationship with share price manipulation. This suggests that while companies may be manipulating their financial statements, the impact on their share prices is not necessarily proportionate or immediate. In conclusion, addressing the issue of earnings manipulation in Nigerian manufacturing companies requires a multifaceted approach involving regulatory, educational, and corporate governance reforms. By implementing these recommendations, stakeholders can work towards fostering a more transparent and trustworthy business environment in the manufacturing sector and, by extension, the broader financial markets.

VII. Recommendations

The following recommendations were made based on the findings

1. Regulatory bodies in Nigeria should strengthen their oversight and enforcement mechanisms to detect and deter earnings manipulation. This could involve conducting more frequent and thorough audits, and implementing stricter penalties for companies found engaging in fraudulent practices.
2. It is crucial to educate investors, especially retail investors, about the risks associated with investing in companies that engage in earnings manipulation. Investor awareness programs and educational materials should be made readily available to help individuals make informed investment decisions.
3. Manufacturing companies should prioritize transparency and accurate financial reporting. Clear and comprehensive financial statements, along with explanations for any unusual financial fluctuations, should be provided to shareholders and the public. This can help build trust and confidence in the financial markets.
4. Encourage a culture of whistleblowing within organizations. Employees, shareholders, and other stakeholders should be protected and incentivized to report any fraudulent activities without fear of retaliation. Whistleblower protection laws can be strengthened to achieve this.
5. Companies should strengthen their corporate governance practices, including the composition and independence of their boards of directors. Independent directors and audit committees should play a more active role in overseeing financial reporting processes to minimize the likelihood of manipulation.
6. Stock exchanges and relevant authorities should invest in advanced market surveillance technologies to detect and prevent share price manipulation. Real-time monitoring of trading activities can help identify suspicious patterns and trigger investigations promptly.
7. Regulatory bodies, law enforcement agencies, and industry associations should collaborate more closely to share information and intelligence on potential manipulative activities. Cross-sector cooperation can help identify and address issues more effective.
8. Evaluate and if necessary, amend existing financial regulations to address emerging challenges in the market. This may include updating penalties for financial misconduct and fraud to act as a stronger deterrent.
9. Encourage further research and studies to better understand the dynamics between earnings manipulation and share price movements. This can help refine regulations and strategies to combat financial misconduct more effective

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