

Earnings management and managerial compensation in Nigerian manufacturing firms

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ABSTRACT

The growing convoluted of industries and the need for corporate business survival has created a cognizance dilemma on the nexus of earnings management and managerial compensation paradigm, especially in developing nations. Hence, this paper sought to examine the nexus of earnings management and managerial compensation in Nigerian manufacturing firms. The study collected panel data from audited annual financial reports of six selected manufacturing firms listed in the Nigeria Stock Exchange, covering the period from, 2012-2019. The data were analyzed using descriptive statistics, correlation and Panel Regression Model. The findings indicate that earnings management is a significant determinant of managerial remuneration. Therefore, the study concludes that managing earnings of firms has a positive significant relationship with executive remuneration, and as such compensation should be tied to performance of the firm in real values.

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1. Introduction

The debate on how managers arrive at the earnings of the firm that gives the impetus to the amount executive officers take home as remuneration has called for concern in the corporate business world. Drawing from the sudden collapses of some large business firms (Enron, WorldCom, Tyco, HealthSouth, Royal Ahold, Parmalat, Lehman Brothers, Oceanic Bank Plc. Societe Generale bank Ltd. Cadbury, Unilever Brothers Plc, Allstate Trust Bank etc.) around the globe and Nigeria in particular; the aftermath, has made stakeholders to be doubtful of the credibility of accounting reports and are forced to believe that the financial reporting practice of firms does not show the true picture of the financial position of the business operations (Dadhania, & Bhayani, 2014; Miyamoto, & Higuchi, 2015; Kent, Routledge, & Stewart, 2010). They are just paperwork organized to bluff and manipulate stakeholders to believe that all is well with the business; with the motive of securing their interest (benefits) in the firm (Li, 2019; Ecker, Francis, Olsson, & Schipper, 2013).

However, earnings management and executive remuneration are often used as a tool to align managerial interests (agents) and that of shareholders (principals) in the corporate milieu (Ipino & Parbonetti, 2016; Lisic, Pevzner, & Chi, 2011), but it empowers the executive managers to make all critical financial decisions, leaving other stakeholders of the firm with little or no control over the decision-making processes, since the agents (managers) are empowered to be in charge of the business. This may give rise to serious window dressing of financial reports because managers always desire to create values as a way of meeting up organizational objectives. Failure to achieve this, could threaten their positions and the going concern of the business. Therefore, one of the justifications of the practice of managing earnings is hinged on the fair factor of losing market stocks and possible falling share price of the firm that has the potential of affecting the managers' positions (Premti & Smith, 2020; Meo, Lara & Surroca, 2017).

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Extant literature on earnings management theory is majorly cross country specific while the ones in developing nations are relatively few and have not basically looked at earnings management and managerial compensation perspective (Li, 2019; Ogiriki & Toru, 2018, Ecker et al., 2013; Fayoumi, Abuzayed & Alexander, 2010; Dharan, 2004). Conversely, it is believed that the core reason managers embark on bath taking techniques is to protect their interest and to give the firm a favorable outlook to attract investors. Therefore, earnings smoothing and a big bath in earnings management and managerial compensation have become controversial issues that require more empirical work and justification from the developing country perspective, with a view to establishing the empirical nexus. Hence, the study seeks to cover this gap in literature as well as to interrogate the relationship that exists between earnings management and executive compensation in Nigeria manufacturing firms.

1.1 Statement of the Problem

There is a clarion call for adequate accountability and transparency on how the earnings of firms are derived and utilized in relation to managerial pay in the sphere of corporate governance. The question that often comes to mind is whether earnings management by management has contravened the accounting standards and ethical values as it relates to true and fair view reporting? And whether such actions are misleading? Drawing from the collapse of Enron and other big corporate firms and the unique Nigeria cases of corporate business failures, there is a problem of confidence crisis and doubt in the minds of stakeholders on the credibility of accounting reporting. This is because many users of financial reports perceive serious manipulations that are misleading, unrealistic and want to interrogate the rationale behind the huge executive officer's pay in the business.

This was one reason why the Sarbanes-Oxley Act (2002) was enacted in America with the recommendation that corporate governance should incorporate shareholders' perception where accounting earnings details are properly reported with the expectation to enhance the quality of accounting information. Rather, it has caused operational disregard of shareholders' interests in the business. A recent study indicates that managers can actually be motivated by compensation contracts to carry out actions that can maximize shareholders' wealth and interest (Kent, Routledge, & Stewart, 2010). But, the theory of earnings management does not support this fact because it provides managerial opportunistic behaviour that triggers managers' intention to protect the benefits they enjoy from the firm and as such, manipulate financial records to keep the business afloat. However, where shareholders directly monitor and control the firm's growth opportunities and executives' actions, payment of incentives become unnecessary. Basically, the idea is to reward executive managers based on performance with the intention to attenuate opportunistic behaviour of managers that are likely not to act in accordance with shareholders' interests. As powerful as this tool seems, the practice in executive compensation during the past few decades raises a lot of doubt to its efficacy, due to its contribution in the bathing and window dressing of financial reports (Miyamoto & Higuchi, 2015; Dadhania, & Bhayani, (2014).

The impetus that warrants earnings management and smoothening of financial reports is hinged on the divergence in the various international accounting standards and laws (GAAP and IFRS). These guidelines provide alternative methods of book keeping that managers leverage on by using discretionary powers to choose between alternative techniques that often lead to padding of earnings. Thus, the adoption of discretionary accrual in earnings management cannot be easily identified from accounting reports of firms. Hence, various scholars have developed models that can be used in detecting or calculating discretionary accruals. The most used models in calculating discretionary accruals are "M-score by Beneish (1999), Healey model, 1985; DeAngelo model, 1986; Jones model, 1991 and Modified Jones model, 1995". That is why this study seeks to interrogate the nexus of earnings management and executive compensation in Nigeria manufacturing firms.

The core purpose of the study is to critically analyse whether earnings management has any significant effect on managerial compensation in Nigeria manufacturing firms.

The question for this study was: How does earnings management affect managerial compensation in Nigerian manufacturing firms?

The hypothesis of this study is: Earnings management does not affect managerial compensation in Nigeria manufacturing Firms.

2. Conceptual review

2.1 Earnings Management Concept

Earnings management involves strategic process of misrepresentation of the true assets and income of an organization with the intention to mislead investors, and other stakeholders into believing that the business is performing as expected (Kumari & Pattanayak, 2015, Healy & Wahlen 1999, Leuz et al., 2003). It is the artificial padding/cooking of accounting profit or revenue figures through innovative tactics. Earnings management is applied where managers desire to portray a favorable financial statement either through the use of discretionary accrual, excessive reserve provisions, unsuitable recognition of revenue, intentional breach, bending, circumventing or taking undue advantage of financial reporting standard loopholes

where a manager uses accounting principles that are flexible to manage earnings (Becker, 2006). Earnings management is the process of manipulating financial reports to make it look good in the eyes of users. Schipper (1989) was the first to identify the earnings management, which he described as the intentional management of or interference in the external accounting reporting process with the motive of acquiring some personal benefits. Healey and Wahlen (1999) “define it as the practice where managers use their discretionary powers in the financial reporting process to manipulate financial reports to either mislead some stakeholders about the underlying economic conditions of the firm or to influence contractual outcomes that depend on produced financial information”. Hence, such opportunistic behaviour can be recognized in the timing of expense items such as advertisement, research and development, as well as the timing and recognition of revenue by the firm which could be early acknowledgment of credit sales as revenue or deferment of losses by creating loss reserves (Strakova, & Michalkova 2020; Teoh, Welch & Wong 1998). Other methods of earnings management could be: income smoothing, secret reserves and window-dressing, off balance sheet financing etc.

The accrual accounting approach allows managers to use discretionary power in managing accruals which makes the direct identification of earnings management difficult (Fayoumi et al., 2010; Sarkar, Sarkar & Sen, 2008; Ayers et al., 2006; Peasnell, Pope & Young, 2005; Dharan, 2004; Dechow, Sloan & Sweeney, 1995). The difficulty in the direct identification of discretionary accruals has made researchers develop different types of models for its detection. Such models include, growth model by Kothari, Leone, and Wasley (2005), M-score by Beneish (1999), Healy model by Holthausen (1995), Modified Jones model by Dechow et al. (1995), Jones model by Jones, J. (1991), DeAngelo model by DeAngelo (1986). Studies so far reveal that adapted Jones hypothesis is the most used model for detecting and sensing earnings manipulation (Kumari & Pattanayak, 2015; Sarkar et al., 2008; Osma & Nogue, 2007; Evans, Houston, Peters, & Pratt, 2012; Barth, Cram, & Nelson, 2001 and Myers & Skinner, 2000) while some recent works prefer to use M-score model (Ogiriki & Toru, 2018).

2.2 Managerial Compensation Concept

Healy (1985) pointed out that the practice of managing earnings is substantially related to managerial compensation and other rewards given to executive managers. This is based on the fact that employees’ incentives are relatively tied to the firm performance (Gao, Meng, Chan, & Wu, 2017). This could be one of the reasons why most executive officers’ put so much effort in protecting their incentive as well as engaging in the practice of managing the business earnings.

Managerial compensation is the remuneration and incentive packages given to principal officers (top managers) of a corporate business, especially the CEOs (Duncan 2012). It is quite different from other workers’ pay in amount and associated compensation packages. The option of stock forms a fundamental part of most CEO compensation benefits, together with a large basic salary. Although, many organizations do offer a low basic remuneration and more desirable stock options to curtail the burden of tax (Sundvik, 2017). It is basically the combination of salary, shares, bonuses, or call options on the company shares. Managerial compensation is a general term used to describe the financial rewards given to firms’ executive officials. Such remuneration rewards are planned and implemented by the corporation’s Board of Directors.

2.3 Earnings Management and Managerial Compensation

Healy and Whalen (1999) revealed that the earnings manipulation practice is common among companies that have agency relationship problems. It is also mostly indulged by failing or failed companies than those that are doing well. The process cuts across harnessing the vague aspect of accounting rules, to the aggressive and illegal approach of handling earnings in order to meet up situational demand and mislead users of financial statements. Another basic reason why managers permit the deliberate manipulation of accounting records, omission or misapply accounting principles is to protect the benefits they derive from the firm (Kumari & Pattanayak, 2015).

In reality, managers are frequently driven by direct rewards such as bonus, salary, and indirect rewards such as expected promotions, job security and job status/reputation. It is a common perception that managers are rewarded based on their performance. Therefore, if the rewards systems are based on the financial performance of the firm, CEOs may likely become opportunistic and be tempted to behave in their own selfish-interest in order to impress stakeholders by using aggressive methods to demonstrate strong performance (Duncan 2012; Becker 2006). The use of inventive and creative financial reporting with the goal of protecting managerial benefits may result in an agency dilemma. Thus, one factor that necessitates opportunistic conduct by managers in a company's cash flow system is executive remuneration and incentives.

3. Theoretical framework

3.1 Agency Theory

The basis of agency relationship hypothesis is used to clarify specific corporate financial issues relating to conflicts of interest and techniques for preventing incentive challenges (Sletten, Ertimur, Sunder, & Weber, 2018; Kumari & Pattanayak, 2015). This is a situation in which the business owners and those in charge of the day-to-day operational activities are not the same. As a result, executive officers are put under pressure to impress shareholders who are the real owners of the business and other stakeholders with excellent results of performance (Jensen & Meckling, 1979). This

situation happens because; humans are rational beings, utility maximizers, and at one point or the other, there is a possibility of conflicts of interest between the agents and principals during the business activities (Jensen & Meckling, 1979).

Hence, the agency hypothesis predicts what reasonable people would likely do or behave if they were placed in a similar situation. This also explains the reason for the self-interest conduct of managers that may oftentimes conflict with shareholders' interest. Such goal congruence usually comes with potential agency costs like the managerial decisions to undermine shareholders' interest by manipulating the books for self-benefits reasons, or for other indirect reasons like corporate social responsibility, tax, debtors and other investors' reasons, etc. It becomes an ethical dilemma situation for managers because they are under pressure to satisfy all stakeholders (shareholders, investors, tax regulators, customers and others) who expect the executive officers to protect their stake in the business at all times. Hence, managers as the agents are under pressure to compromise their ethical standards in order to deliver a good or quality report to impress them and to protect their selfish interest.

Managers may obfuscate their activities by manipulating reported earnings which may influence investors to make poor investment decisions based on stated results, with agency cost consequences. When a firm has a lot of free cash flow, the manager may decide to use earnings management to improve the company's performance. Hence, this relationship may be explained using agency theory. The theory puts forward some systematic tools that seek to address the problem in the interest divergence of managers and shareholders in a business milieu. Though an organization's choice of interest alignment mechanisms between the agents and principles may not be the same, the whole essence is for the monitoring of the agents' behavior toward the business (Guilding, Warnken, Ardill, & Fredline, 2005). These mechanisms include external governance instruments like merger, takeovers and any other corporate restructuring (Guilding et al., 2005; Hill, & Jones, 1992).

3.2 M-Score Model

This model was developed by Beneish (1999) for the purpose of detecting earnings manipulation in corporate organizations. This model helps to reveal the truth behind the mask if managers' peradventure have used the big bath technique or discretionary influenced firms' reports to declare a loss for the period and or window dressed the accounting reports to show profit for the period. The Beneish M-score uses eight indicator variables or components to show the degree of manipulation in firms' earnings. They are: gross margin index (GMI), days sales in receivables index (DSRI), asset quality index (AQI), sales, general and administration expenses index (SGAI), sales growth index (SGI), leverage index (LVGI), depreciation index (DEPI) and total accrual to total assets (TATA). Beniesh (1999) stated that if the calculated M-score is less than -2.22, it indicates that the firm under consideration does not manipulate their earnings but on the other hand if it is more than -2.22 it reveals a sign of earnings manipulation in the firm under consideration.

3.3 Empirical Literature and Hypothesis

Bisogno and Donatella (2022) examined earnings management in public-sector organizations with the aim to interrogate existing literature in order to identify how research is emerging and to discover the literature gaps requiring further study. The study utilizes "structured literature" methods to evaluate the state-of-the-art and the future of earnings management literature in government organizations. They explored 78 articles and found out that there are different but related streams of emerging literature that focus on both micro and macro-level perspectives, especially local and state government corporations.

Wang, Wang, and Liu (2021) studied the influence of CEO pay "gap on earnings management from the perspective of media supervision" in China's A-share level firms. The observed data of 2825 sampled size span from 2014 – 2018 and were evaluated using descriptive statistics, spearman correlation and OLS techniques. The study indicates that managers with higher remuneration tend to manipulate earnings in favour of the firm as well as protecting their own interests. They conclude that firms with larger profit that pays higher compensation to managers, will prone their behavior to reduce accrued earnings in the current period, and by extension curtail taxes/fees and the reverse is the case for weaker profitability firms.

Ogiriki and Toru (2018) investigate the relationship between firm performance and reported earnings of listed firms in the Nigeria stock exchange. The study used the M-score hypothesis to measure earnings manipulation in the sample firms. The data series from 2012 to 2015 were analyzed using descriptive statistics and simple OLS technique. The findings indicate that there is a significant difference among the factors affecting firms' earnings in Nigeria. The work also shows that there is a significant relationship between firm performance and management of earnings in Nigeria firms. Kumari and Pattanayak, (2015) examined the effect of firm performance and reported earnings quality of private and public owned money deposit "banks listed in Indian stock exchange". The study used modified Jones model to measure earnings management while common regression model technique on twenty five (25) sample banks data. Their finding indicates a significant variation among the characteristics swaying the quality of earnings in public owned banks and private owned deposit money banks in India. The results also reveal that the PBT and appropriation; PAT and market ratio; price earnings ratio and yield have substantial effects on earnings quality on deposit money banks in India. Their work is supported by the findings of Sarkar et al. (2008), which revealed that there is the existence of earnings manipulation practice in the banking

industry of India. Hassen (2014) carried out a study on executive compensation and earnings management on 80 French companies using descriptive statistics, correlation test and Z-test technique in the data evaluation. The finding indicates that CEO pay is assessed by the requirements of earnings control and that total executive pay is adversely linked to the total value of accruals. Sun and Hovey (2012) evaluated the endogeneity effect of CEO pay on discretionary behaviour of management over financial disclosure in Australian companies for the period from 2000 to 2006. The study used a regression approach on the data generated from 3,326 sample sizes of Australia securities exchange listed firms. Their findings reveal that there is a substantial negative correlation between roles of executive remuneration and earnings manipulation activity outcomes. Uygur (2013) examined earnings management and executive compensation in the Rowan banking industry based on fraud triangle theory. The study used descriptive statistics, OLS and fixed effect techniques to analyze the data series from 1999 to 2005. The findings revealed that stock options of banks executives have significant positive correlation with earnings management of the selected banks and larger, poorer performing banks with a lower number of outside stockholders do more manipulation of their financial reports through provisions-for-loan-loss accounts.

The above empirical works revealed a divergence of findings among scholarly works on the link between earnings management and managerial compensation; indicating a gap in literature as well as given credence for further research. Hence, the hypothesis of the study to be tested is stated in a null form in order to achieve the study objective:

H₀₁: Earnings management does not affect managerial compensation in Nigeria manufacturing Firms.

4. Data and Methodology

The study used the annual accounting reports of six (6) listed manufacturing firms in the Nigeria stock exchange market from 2012-2021 to enable us to achieve our research objective. The six listed firms were chosen by survey sampling technique on the ground of availability of data as at the time of this study; and the selected firms were also based on relevance of the sector to the economy of Nigeria. Hence, the research hypotheses were analyzed using descriptive statistics and inferential statistics, specifically, panel data regression technique (Gujuratti & Sangeetha, 2008). The selected variables are: Days' Sales in Receivables Index (DSRI), total accruals to total assets (TATA), Depreciation Index (DEPI) and Leverage Index (LVGI) are used as proxies for earnings management, while CEO's remuneration is used as proxy for managerial compensation. The study specifically adopts the Beneish M-Score model in quantifying earning management.

4.1 Specifications of the Econometric Model

The regression technique that is termed to be a statistical technique for finding relationships between variables for the purpose of predicting future values will be use to analyzed the data. The formula is stated thus:

$$MComp_{it}=F(TATA_{it}, DSRI_{it}, DEPI_{it}, LVGI_{it}, U_{it}) \quad (1)$$

This can be written in explicit form as:

$$L(MComp_{it})=\beta_0+\beta_1TATA_{it}+\beta_2DSRI_{it}+\beta_3DEPI_{it}+\beta_4LVGI_{it}+\mu_{it}$$

where:

L(MComp) = Log of managerial compensation. This is measured by Directors' Emolument or remuneration. These values are logged in order to bring the figures at par or uniformity with other variables that are stated in fractions or that have negative values; (however all benefits of directors have been converted to cash).

TATA = Total accrual to total Assets. This is computed as the change in the accounts of working capital other than the cashless depreciation. It can be express as (TATA=continuous operations income in time less cash flows from operations in time divided by total assets in time).

DSRI = Days' Sales in Receivables Index. This is computed by dividing the ratio of days' sales in receivables in a year by the ratio of the previous year. (DSRI=net receivables in current year over sales in the current year divided by net receivable of previous year over sales of previous year).

DEPI = Depreciation Index. This is express as the rate of depreciation in current year (t-1) over it previous year (t). If the value is greater than 1, it means that the rate by which assets are depreciated has slowed down. (DPI = depreciation in current year over gross value of property, plant, and equipment (PP&E) plus depreciation, and divided by previous year depreciation over PP&E of previous year)

LVGI = Leverage Index. This is the ratio of (total debt divided by total assets of the current year) with respect to it previous year. LVGI= [(current liabilities_t plus total long term debt_t) over total asset_t] divide by (current liabilities_{t-1} plus total long term debt_{t-1}) over total assets_{t-1}). This represents the debt structure of a company and is used as a proxy

for debt agreement violation (Efendi, Sirvastara & Swanson, 2007). Jiang, Lee and Anandarajan (2008) reveals that leverage changes may have differing impacts on earnings management.

β = Coefficient of parameter
 it = Time coefficient
 μ = Error term

Decision Rule

To accept or reject the null or alternate hypothesis is guided by the by the following decision criteria:

- i. Accept H_0 and reject H_1 IF f-statistics (prob) ≥ 0.05
- OR
- ii. Reject H_0 and accept H_1 IF t-statistics (prob) ≤ 0.05

A priori specification

The apriori expectations of the model coefficient are: $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 < 0$, $\beta_4 < 0$.

4.2 Data Estimation Techniques

The study made use of inferential statistics and descriptive statistics. Hence, the OLS technique was used to estimate the nexus of earnings management and managerial compensation in Nigerian manufacturing firms. The data were analyzed using E-VIEW 9.0.

5. Data Presentation, Analysis and Interpretation

The descriptive statistics revealed the output of the mean, median, minimum, maximum, standard deviation, Jarque-Bera, kurtosis, and probability for the data. Therefore, the outcome is presented in table 1 as follows:

Table 1
Summarized Descriptive Statistics

	LOG(MCOMP)	TATA	DSRI	DEPI	LVGI
Mean	11.99223	1.468750	1.247292	1.299792	0.935208
Median	12.17885	0.780000	1.000000	1.000000	1.000000
Maximum	14.14233	9.750000	5.330000	14.40000	1.540000
Minimum	8.098643	0.000000	0.000000	0.000000	0.000000
Std. Dev.	1.185806	2.224200	0.999463	1.994459	0.242627
Skewness	-1.168990	2.822380	2.811631	6.084246	-1.499307
Kurtosis	4.951769	10.37678	11.01206	40.46982	7.633358
Jarque-Bera	18.16463	172.5605	191.6282	3104.120	60.91940
Probability	0.000114	0.000000	0.000000	0.000000	0.000000
Sum	563.6347	70.50000	59.87000	62.39000	44.89000
Sum Sq. Dev.	64.68220	232.5121	46.94955	186.9597	2.766798
Observations	47	48	48	48	48

The above summarized descriptive statistics reveal the behavior of the variables used for the estimation. Hence, the selected variables of managerial compensation (MCOMP), total accruals to total assets (TATA), Days' Sales in Receivables Index (DSRI), Depreciation Index (DEPI) and Leverage Index (LVGI) are analyzed. From the descriptive statistics, managerial compensation (MCOMP) has a mean value of 12 and has the maximum managerial compensation value of 14 while the minimum value is 8. This suggests that the firms under study averagely have moderate managerial compensation levels. The Jacque-Bera normality test indicates that none of the variables is normally distributed, since their probability values are above the significant 0.05 level.

Table 2
Correlation Test Result

	LOG(MCOMP)	TATA	DSRI	DEPI	LVGI
LOG(MCOMP)	1	0.18120	-0.05636	0.03630	0.33723
TATA	0.18120	1	0.00958	-0.09678	0.04454
DSRI	-0.05636	0.00958	1	-0.09192	0.04804
DEPI	0.03630	-0.09678	-0.09192	1	0.05100
LVGI	0.33723	0.04454	0.04804	0.05100	1

The correlation evaluation test is a step before the regression analysis. The essence is to reveal the significant relationship between the variables that are to be introduced in the regression model. The test results on table 2 show that, the majority of the independent variables of TATA, DEPI and LVGI have weak positive relationship with managerial compensation measures of MCOMP (18%, 4%, and 34%, respectively). However, one of them, DSRI, has a weak negative correlation with MCOMP at (6%).

Table 3
Panel Regressions Analysis Results

Variables	Fixed Effect Model			Random Effect Model		
Dependent variable:	LOG(MCOMP)			LOG(MCOMP)		
	coefficient	(t-statistics)	P value	Coefficient	t-statistics	p- value
Constant	11.99748	60.74445	0.0000	11.92212	23.24564	0.0000
TATA	0.034653	1.563908	0.1304	0.068554	1.338594	0.1891
DSRI	-0.006045	-0.134085	0.8944	-0.062704	-0.538629	0.5935
DEPI	-0.003510	-0.153522	0.8792	2.56E-05	0.000441	0.7264
LVGI	0.086364	0.419278	0.6786	0.181617	0.352639	0.7264
R ²	0.961725			0.151585		
R ² _{adj}	0.937229			0.03375		
F- Statistic	39.26064			1.286412		
Prob(F-stat)	0.000000			0.291218		
Durbin-Watson Stat.	1.575448			0.234767		

Source: Extracts from Fixed effect regression model

Table 4
Hausman test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	2.182699	5	0.8233

The essence of the Hausman test is to tell us which of the above panel regression results in table 3, is more suitable for our study. That is, the selection or choice is to be made between the fixed effect model and the random effect model results stated above. Hence, the Hausman test result indicates that the random effect model is not significant at 0.05 level. Therefore, the fixed effect model result is selected and adopted for this study. And consequently, form the basis for our discussion of findings, drawing of conclusion and policy implication.

Therefore, Table 3, X-rays is based on fixed effect model result, the significant effect between earnings management and managerial compensation in Nigeria manufacturing firms. In other words, the panel least square output is used to test H₀. The value of R² is 0.96 and the adjusted R² value is 0.94. This indicates that the model explains 94percent of the systematic changes in the criterion variable. This also implies that the predicting variables can explain about 94percent of the variation in managerial compensation as revealed in (Table 3). This implies that there is goodness of fit in the stated model. This value can be considered sufficient because the managerial pay level of the selected firms is also influenced by other factors besides earnings manipulation.

In the same vein, the F-statistics value has 39.261 at 0.05level of significance. Therefore, the variables are significant at 5percent level using the F-statistics as the coefficient of determination. This indicates that there is an overall significance of the model since the value of F statistic is 39.261. Therefore, the null hypothesis is rejected and we conclude that there is a significant relationship between earnings management and managerial compensation because the F-statistics probability value of 0.0000 is less than 0.05 level of significance. Hence, we reject the null and accept the alternative hypothesis.

In other words, the F-statistics prove the validity of the estimated model which is statistically significant at 5percent level, as shown by the F-probability value. This also implies that the alternate hypothesis is valid and that the predicting variables have significant relationships with the criterion variable. This outcome implies that an increase in earnings management of the sampled firms will lead to an increase in managerial compensation. The Durbin-Watson statistics rule of thumb for the measure of autocorrelation is greater than R² (1.5754>0.9617). This indicates the absence of first order autocorrelation. We also arrived at this conclusion because the F-statistics of 39.261 gives an F-probability 0.00000, which is significant. Thus, we conclude that earnings management dimensions factors, together, have significant impact on managerial compensation in Nigeria manufacturing firms.

Though, the individual t-statistics of DSRI and DEPI variables indicates a negative non-significant correlation with the criterion variable, while TATA and LVGI have positive non-significant relationship with the dependent variable at 0.05 level. But the combination of the predicting variables indicates a positive significant association with the criterion variable.

Table 4

Granger Causality Test Result

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision
TATA does not Granger Cause LOG(MCOMP)	30	4.68093	0.0108	Reject
LVGI does not Granger Cause LOG(MCOMP)	30	3.15674	0.0441	Reject
TATA does not Granger Cause LVGI	30	4.63161	0.0112	Reject
DEPI does not Granger Cause DSRI	30	5.07506	0.0077	Reject

Source: Authors own computation using Eview 9

From Table 4, we observe that Total accruals to total assets (TATA) granger cause log of managerial compensation (MCOMP), Leverage index (LVGI) granger cause log of managerial compensation (MCOMP), Total accruals to total assets (TATA) granger cause Leverage index (LVGI) and Depreciation Index (DEPI) granger cause Days' Sales in Receivables Index (DSRI). This evaluation reveals that there is a unidirectional causal relationship between the predicting variables and the criterion variable. Therefore, we reject the null hypotheses.

5.1 Test of hypotheses

HO₁ Earnings management does not affect managerial compensation in Nigeria manufacturing Firms.

From the above regression result in table 3, the null hypothesis is rejected and we accept the alternative. Therefore, we conclude that there is a significant association between earnings management and managerial compensation of the selected firms in Nigeria.

5.2 Discussion of Findings

The result outcome implies that there is a substantial link between earnings management and managerial compensation of the sampled firms. This also means that the manipulation of earnings has more discretionary tendencies depending on the motive or management objective than just the habit of manipulating earnings to impress shareholders. Hence, the outcome of the study is supported by the methodological position of (Ogiriki & Toru, 2018; Kumari & Pattanayak, 2015; Uygur, 2013; Sarkar et al. 2008) where they observed a significant positive correlation between the selected predicting variables and the criterion variable. This means that an increase in earnings management, will lead to an increase in managerial compensation versus. Thus, we conclude that earnings management factors have a significant effect on managerial compensation in Nigeria manufacturing firms.

6. Conclusion and Policy Implication

The study represents the first attempt to evaluate the existence of earnings management and managerial compensation in Nigeria firms using Beneish (1999) M-score. It is also the initial study to spot a link between earnings management practices and CEO pay in Nigeria listed companies. The findings of this study can be used to identify the scope of earnings management and the various factors that are contributing to earnings handling. It also offers how to detect financial loopholes, manipulated accounting reports and the justification behind such actions. It provides practical control measures on earnings management practice of the firms. Therefore, this study discussed and analyzed the link between earnings management and managerial compensation of six listed companies in the Nigeria Stock Exchange (BSE) for the period of eight years (2012- 2019). The analysis reveals that earnings management and executive compensation have strong positive significant links, as well as the market value of the firm. As such, a decrease or increase in the market value will cause managers to manipulate earnings so as to create a positive impression to various stakeholders with the motive of protecting their stake/interest, as a way of fashioning a better bargaining opportunity for their compensation and job security.

7. Limitation of the study

The study basically focused on the Nigeria consumer sector which alone is a major limitation. The study considered only six manufacturing firms and only eight year's data period (2012-2019) were generated for the evaluation. The audited annual financial statements of the sample firms are selected due to availability of data at the time of this research. Hence, the time series may be small because it may not have captured all the periodic fluctuations in Nigeria's economy. However, further study can be carried out to look into a broader view of the selected variables and other models could be used in measuring earnings management to see if future findings may support this study. Also there is the limitation of the number of dependent variables used, other criterion variables that could be used for further research includes: Sales growth index (SGI), Asset Quality Index (AQI) and Gross Margin index (GMI), and a higher number of firms from other sectors like the financial sector may provide a better result.

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