

# Mediating the Effect of Audit Committee Independence on the Relationship between Firm Physiognomy and Real Earnings' Management

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The proliferation of accounting scandals and mixed findings from preceding studies on real earnings management have incited the need to improve the relevance of financial reporting by setting up different and sound governance mechanisms coupled with the introduction of mediating variables to improve the earnings' quality. This study examines the mediating effect of audit committee independence on the relationship between firm physiognomy and real earnings management in listed non-financial firms in Nigeria. The data were obtained from Thomson Reuters DataStream and financial reports of 469 firms from 2011-2017. OLS and GLS regression were utilised for panel data analysis. The findings showed that audit committee independence partially mediates the relationship between firm physiognomy and real earnings' management. Further analysis revealed that family affiliated firms have a positive impact on the earnings quality while related party transaction is less effective in deterring real earnings manipulation. The findings also indicated that audit fee and tenure are less effective in restraining the earnings' manipulation. It was also found that brand name auditors and risk management have a positive impact on earnings quality; moreover, whistleblowing and qualified audit reports are similarly effective in ensuring audit quality in listed non-financial firms in Nigeria. In light of the above mentioned, there is a need for much emphasis on the use of competent audit committee independence among listed non-financial firms in Nigeria. This could help in ensuring an effective monitoring strategy and restraining real earning manipulation.

**Key words:** *Firm physiognomy, real earnings management & mediating effect*

## **Introduction**

Significant researches have been dedicated to understanding the bond between firm physiognomy and the quality of financial reporting widely (Beest, Braam, & Boelens, 2009; Christensen, Huffman, & Lewis-Western, 2016; Litt, Sharma, Simpson, & Tanyi, 2014). Proper governance and quality reporting have been agitated by many stakeholders. The demise of giant corporations globally has incited the quest for better firm performance and quality reporting (Bratten & Causholli, 2017; Brown, Pott, & Wömpener, 2014; Hassan & Bello, 2013).

Several attempts were made to align the divergent interest of shareholders and stewards, but there are always lingering issues from different dimensions by smart agents. Management of listed companies deviates from standard operational practice to achieve specific financial reporting objectives through sales' acceleration, a glut in productions, and abnormal discretionary expenditure. The combination of these three is called real earnings management and is usually done within the year and has cash flow consequences to the firms which need to be checkmated (Cohen & Zarowin, 2008; Haga, Siekkinen, & Sundvik, 2015; Roychowdhury, 2006). With a failure to address this issue, earnings manipulation can have a multiplying effect on the firm and affect various stakeholders in many ways. One of the implications could be that the financial reports provided by these firms may not reflect the actual position and performance of the firms, although the firm's stakeholders relied on it for various decisions. The decisions could be an investment, debt covenant, liquidity, managerial compensation, due diligence appraisal, merger and acquisition, and dividends decision of the firms (Bala and Kumai, 2015; Ibrahim, Bello, & Kargi, 2016).

Recent studies show that firm physiognomy and earnings management are related, although there is no conclusion on the sign of this relation (Randall & Taylor, 2007; Lemma, Negash & Mlilo, 2013). There is limited research studying the relationship between firm physiognomy and earnings quality mediated by audit committee independence, and the studies come up with mixed results. In light of the above, this study examines the mediating effect of audit committee independence on firm physiognomy and real earnings management in listed non-financial firms, Nigeria.

## **Literature Review and Theoretical Approach**

### ***Firm Physiognomy***

Firm physiognomy refers to firm internal governance which composes of family affiliation and related party transactions, financial audits which are audit fees, audit tenure, and brand

name auditors and risk management component (whistleblowing and qualified audit report) and how do they impacted on the quality of earnings in listed non-financial firms in Nigeria.

### ***Real Earning Management***

Real earnings' management connotes deviations from the firm's usual operational practice motivated by the managerial desire to achieve a specific financial reporting goal. The goal could be achieved by sales accelerating for a short period, superfluity in production with no immediate market and unusual discretionary expenses, and the attitude has a cash flow effect to the firm.

### ***Empirical Review***

In recent years, researchers have focused on firm physiognomy and financial reporting quality due to its relevance in various firms' decisions (Cascino, Pugliese, Mussolino, & Sansone, 2010; Sue, Lu, & Chin, 2009). Interestingly, the existing empirical studies offer mixed evidence on this issue.

Firstly, affiliated family firms, produce higher-quality reporting and exhibit better disclosure practices, consistent with the alignment effect of family ownership (Bonacchi, Massimiliano Fabrizio, 2017; Tian, Yang, & Yu, 2018; wan Nadiah & Mansor, 2018). However, family firms dominated by founding members manipulate accounting earnings to expropriate minority shareholders and seek private benefits, consistent with the entrenchment effect of family ownership (Paiva, Lourenço, & Dias Curto, 2018). Furthermore, related party transactions lead to higher-quality reporting, as documented by Mita & Utama (2017). Consequently, some findings reported that related party transactions do not lead to higher earnings quality, as stated by (Gordon & Elaine Hen, 2017; Saleh, Munir, Jaffar, & Yatim, 2013).

Secondly, on the one hand, findings suggested that audit fees produce higher quality reporting and exhibit better firm disclosure practices (Amran & Bala, 2018; Krauß, Pronobis, & Zülch, 2015; Mustapha, Nik, Rashid, Lateef, & Bala, 2019). On other hand, there is a finding suggesting that audit fees do not lead to higher audit quality (Gupta, Krishnan, & Yu, 2011). Moreover, audit tenure does not lead to higher audit quality and exacerbates financial reporting quality (Bratten & Causholli, 2017; Saleem & Alzoubi, 2017), while some studies documented that audit firm tenure positively impacted on the earnings quality (Bamahros & Wan-Hussin, 2015) (Leung, Srinidhi, & Xie, 2017). The studies further reveal that brand name auditors impacted on the earnings quality (Litt et al., 2014; Vann & Presley, 2018) while some studies suggested that brand name auditors do not lead to higher audit quality (Fleischer, Goettsche, & Schauer, 2017; Sani, Latif, & Al-dhamari, 2018). Prior empirical

studies reported that enterprise risk management practice leads to higher audit quality and restrained manipulative attitude (Cassar & Gerakos, 2017). Besides, some studies documented that risk management practice does not lead to quality reporting (Brown et al., 2014). Moreover, some studies also reported that whistleblowing positively impacted on the earnings' quality and checkmated managerial attitude (Lee & Fargher, 2013; Smaili & Arroyo, 2017). By contrast, some studies documented that whistleblowing does not lead to earnings' quality (Maroun & Atkins, 2014).

### ***Theoretical Approach***

The agency theory presents a basis for the governance of firms using internal or external monitoring mechanisms. The mechanisms are to address principal-agent interest alignment, protect shareholders' interests, and thus reduce agency cost (Martinez, 2010). Though several factors lead to manipulation, irrespective of the kind of relationship between principals and their agents, such as pressure, targets threshold, opportunity, and ethics (Ficarella & Gavridis, 2006). Therefore, the type of relationship between principals and their agents may moderate manipulation but cannot eradicate it. The study used the agency theory to underpin and explain firm attitudes towards better or worse financial reporting quality (Clarke, 2004; Sharpe, 2012).

### **Methodology**

#### ***Sample and Variables***

This study obtained the data using two sources (i) Thomson Reuters DataStream for consolidated financial statement, while firm physiognomy are derived from (ii) the firms' financial reports. This study excluded financial firms from the samples for the reason that they have unique operating characteristics and are governed by different regulations. The study has taken into consideration non-liquidated, merged, acquired, or delisted firms from January 2009 until December 2017 from the floor of the Nigerian Stock Exchange. The final sample composed of 67 listed non-financial firms derived from a total population of the study, which is 170. The study deducted 57 financial service firms, 4 natural resources firms 7 ICT, and 25 service industries leading to the remaining = 77. Also, firms with missing data are 10, the study is now left with 67 listed non-financial firms. The sample is balanced panel data consisted of 469 observations obtained from seven sectors.

There are three main aspects to the hypotheses (i) family affiliation and related party transaction, (ii) audit fees, audit tenure, and big4 auditors (iii) risk management whistleblowing and qualified audit reports. The study measured family affiliation as the percentage of common stock own by family members derived from firm financials.

Moreover, the study measured related party transaction by the natural logarithm of annual transaction value obtained from financial reports. Furthermore, this study measured audit fees by the natural logarithm of the amount paid for audit fees, derived from the firm financials. Also, the study measured audit firm tenure by a logarithm of tenure, and big4 auditors are measured using dummy variables, 1 for big4 and 0 for non-big4 derived from the firm's annual reports. Lastly, risk management, whistleblowing, and qualified audit reports are all dummy variables measured as 0 and 1 from the financials too. The firm's internal governance, financial audit and risk management mentioned above represent our independent variables. This study used dependent variables, real earnings management, using three-components which are cash flow from operation, discretionary expenses and abnormal production cost based on proxies suggested in prior literature, which could provide richer information than using individual parts separately as indicated by Alhadab, Clacher, & Keasey, 2015; Haji-Abdullah & Wan-Hussin, 2015; Kouaib & Jarbou (2017).

### *First Stages of Analysis*

Firstly, this study used the cash flow model below to measure abnormal cash flow from the operation, which is a cross-sectional regression, adapted from the Roychowdhury (2006) model, which is a linear function of sales and change in sales. The study's model is derived by dividing cash flow from operation lagged by total assets and is regressed against current year sales divided by lagged total assets plus the change in sales scaled by lagged total assets; the residual from the regression model stand as real earnings' manipulation.

$$\frac{CFO_t}{Ta_{t-1}} = \alpha_0 + \alpha_1 \left[ \frac{1}{Ta_{t-1}} \right] + \gamma_1 \left[ \frac{St}{Ta_{t-1}} \right] + \gamma_2 \left[ \frac{\Delta St}{Ta_{t-1}} \right] + \epsilon_{it} \quad \text{Model 1}$$

Secondly, this study further used discretionary expenditure from research and development, advertising expenses and selling, general, and administrative expenditure to measure abnormal levels from the firms' operation. The unusual discretionary spending is computed by lagging with the total assets and is regressed against current year sales scaled by lagged total assets; the residue from cross-sectional regression saved is standing as real earnings' manipulation.

$$\frac{DISEXP_t}{Ta_{t-1}} = \alpha_0 + \alpha_1 + \left[ \frac{1}{Ta_{t-1}} \right] + \gamma_1 \left[ \frac{St}{Ta_{t-1}} \right] + \epsilon_{it} \quad \text{Model 2}$$

Thirdly, this study further used abnormal production cost, which is the last part of the real earnings' management component. The unusual production cost is computed by dividing production cost by the lagged total assets which is regressed against sales by lagged total assets, plus the change in sales by lagged total assets, plus the change in contemporaneous

sales also by lagged total assets. The regression residuals saved stand as real earnings' management.

$$\frac{PROD_t}{Ta_{t-1}} = \alpha_0 + \alpha_1 + \left[ \frac{1}{Ta_{t-1}} \right] + \gamma_1 \left[ \frac{St}{Ta_{t-1}} \right] + \gamma_2 \left[ \frac{\Delta St}{Ta_{t-1}} \right] + \gamma_3 \left[ \frac{\Delta St}{Ta_{t-1}} \right] + \epsilon_{it} \quad \text{Model 3}$$

Note: it is the general convention in the literature to accommodate scaled intercept,  $\left[ \frac{1}{Ta_{t-1}} \right]$  because it allows the mean cash flow lagged by total assets to be non-zero even when the main predictor variables in the empirical model, sales and change in sales are zero (Roychowdhury, 2006).

After computing the residuals from three models above, this study went ahead and applied them as follows: abnormal cash flow from operation to be multiplied by -1, as firms that are more likely to engage in real earnings management generally have lower cash flow from operation. Abnormal discretionary expenses are multiplied by -1 so that higher value indicates that it is more likely that firm slashes discretionary expenditures, and unusual production costs are multiplied by +1. The composite residue from the three models is the dependent variable of this study.

### Implementation of the Mediating Effect

Several steps are needed preceding to testing mediation effects. This study proposed three dependency models: firstly, regress the independent variables against the dependent variable; secondly, regress mediator against the independent variables; and thirdly, regress independent variables, mediator, and control variables against the dependent variable.

The first regression model was run to test whether a significant relationship exists between the predictor and the outcome variable. The second regression model was run to check whether the mediator is correlated to the predictor variables. The third regression intends to test whether introducing the mediator variable decreases the significance of the relationship among the variables (Baraibar-diez, 2017; Baron & Kenny, 1986; Gorondutse, 2016).

### Descriptive Statistics

Table 1 presents summary statistics of the mean and median values of composite measures of real earnings' management, firm physiognomy for a sample of 469 listed non-financial firms in Nigeria. All continuous variables are winsorized at the 1% and 99% levels to eliminate extreme observations. The table revealed that the observed scores, median, and mean values of the variables: real activity manipulation, family affiliation, related party transaction, audit

fees, and audit firm tenure are lying within the relevant range minimum and maximum values and portray the same pattern of characteristics.

**Table 1:** Univariate Analysis

Variable	Median	Mean	Min	Max	Std. div
remsector	0.039	0.058	-0.560	0.993	0.382
Fmlyaffilia	0.551	2.823	0.115	68.000	10.719
Rpt	5.648	4.753	0.000	8.283	2.548
aufee	7.147	7.104	5.875	8.301	0.619
audten	0.477	0.494	0.477	0.602	0.043
Leverages	0.558	0.592	0.000	5.375	0.362
Frmsiz	17.092	17.360	11.436	28.141	3.053
Aci	0.500	0.500	0.330	0.750	0.060

The mean value of the real earnings' management index for firm governance is 0.058 implies that, on average, these firms are more likely to engage in real activity manipulation in listed non-financial firms in Nigeria. Regarding the family affiliation, our results again show that family firms are more likely to engage in real earnings' manipulation as depicted by their mean value of 2.823. The mean value of related party transactions in listed non-financial firms of 4.753, implies that on average related party transactions by firms increase real earnings' management in listed non-financial firms in Nigeria. Further, this study reveals that the mean value of audit fees and audit tenure is (7.104) and (0.494), respectively, indicating that they lead to an increase in real earnings' management. Concerning the control variables, the average firm size is 17.360, meaning that on average, firm size leads to a rise in real earnings' management while leverage leads to an increase of real earnings' manipulation by 0.59 in listed non-financial firms.

Table 2 shows from the descriptive statistics of dichotomous variables that, Big4 auditors accounted for 59.9% compared to non-big4 auditors, and risk management committee disclosure accounted for 84.86%. Moreover, whistleblowing practice accounted for 56.29%, and lastly, qualified audit reports cater for 6.6% signifying low disclosure reporting by the audit firms.

**Table 2:** Descriptive Statistics of Dichotomous Variables

Variable	Frequency		Percentage		Total %
	0	1	0	1	
Brand name	188	281	40.09	59.91	100
Rskmgt	71	398	15.14	84.86	100
Whistleblowing	205	264	43.71	56.29	100
Qualified report	438	31	93.39	6.61	100

### Correlation Matrix

In Table 3 Correlation Matrix, it is observed that the correlation matrix reveals a significant negative relation between affiliated family firms with real earnings management, while related party transaction is insignificant but positively correlated to real earnings' management. Furthermore, it is observed that the correlation matrix reveals a significant positive association for the pairs of audit fees and audit tenure with real earnings' manipulation and significant at the 10% level. While, brand name auditors are negatively associated with real earnings management, but insignificant.

**Table 3:** Bivariate correlation

	REM	Fmly	Rpt	aufee	Audten	Brndme	Rskmgt	wsblow
Rems	1.00							
fmlyaffilia	-0.07	1.00						
Rpt	-0.15**	0.25***	1.00					
Aufee	0.06	-0.47***	-0.06	1.00				
Audten	0.11*	-0.59***	-0.18**	0.65***	1.00			
brndname	0.11*	-0.16**	-0.08	0.03	0.10*	1.00		
Rskmgt	-0.07	-0.24***	-0.12**	0.35***	0.58***	0.02	1.00	
Wsblo	-0.08	0.10*	0.09	-0.02	0.02	0.06	0.01	1.00
Qar	-0.01	-0.29***	-0.22***	0.29***	0.28***	0.04	0.10*	-0.05
Aci	-0.09	0.03	-0.10*	0.01	-0.03	-0.08	0.04	0.08
leverages	0.11*	-0.08	0.00	0.10*	0.13**	0.08	0.05	0.04
frmsiz	0.09	-0.43***	-0.04	0.44***	0.54***	0.13**	0.15**	0.06

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$  denotes 10%, 5% and 1% level of significance respectively

Further, the table reveals that risk management practice, whistleblowing, and qualified audit reports are negatively correlated with real earnings' management but not significant. Moreover, leverage is to be positively related and significant at 10% level with real earnings' management. Lastly, firm size is positively associated with real earnings' management but not significant.



**Table 4:** Second Stage of Regression Analysis These are the mediation models depicted as follows:

	Regression1	Regression 2	Regression3
Variables	Model 1	Model 2	Model 3
	OLS	GLS	OLS
Family affiliation	(-0.005) 0.003***	(-0.001) 0.036**	-0.007 0.002***
Related party transaction	(0.002) 0.986	(0.001) 0.451	0.000 0.969
Audit fee	(-0.1276) 0.008***	(-0.016) 0.039**	0.121 0.012**
Audit Tenure	(0.774) 0.050**	(-0.099) 0.016**	0.720 0.079*
Big4 auditors	(1.012) 0.001***	(0.013) 0.081*	-0.151 0.001***
Risk management	(1.103) 0.065*	(0.020) 0.011**	-0.081 0.095*
Whistle blowing	(-0.705) 0.063*	(0.011) 0.079*	-0.065 0.084*
Qualify reports	(1.155) 0.776	(-0.027) 0.018**	-0.032 0.644
Leverage	0.050 0.120	(0.001) 0.890	0.093 0.052*
Firm size	-0.187 0.974	(0.001) 0.581	0.000 0.953
Cons	8.067	0.617	0.781
P-value	0.000	0.002	0.000
R <sup>2</sup>	0.442	0.463	0.579
Wooldridge	0.9436		0.7480
Breusch-Pagan CWB	0.1694		0.965

Regression1 (OLS)

$$REM = -8.067 - 0.005FMLYAFFL + 0.180RPT - 3.112AUF - AUT + 1.011BRNDNAME + 1.103RSKMGT - 0.705WBL + 1.115QAR + 0.05LEV - 0.187FRMSIZ$$

Regression 2 (GLS)

$$ACI = 0.62 - 0.001FMLAFFL + 0.001RPT - 0.016AUF - 0.105AUT + 0.013BRNDNAME + 0.020RSKMGT + 0.011WSBL - 0.027QAR - 0.001LEV + 0.001FRMSIZ$$

Regression3 (OLS)

$$REM = -0.78 - 0.005FMLYAFFL + 0.002RPT + 0.121AUF + 0.720AUT - 0.151BRNDNAME - 0.081RSKMGT - 0.065WBL - 0.032QAR + 0.093LEV + 0.008FRMSIZ$$

**Model 1**

The model reveals that family affiliation is negatively correlated with real earnings' management and significant at 1% level, while related party transaction is positively associated with real earnings management but insignificant. Furthermore, the audit fee is

negatively linked to real earnings management and significant at a 1% level. Also, audit tenure and big4 auditors are nexus to be positively connected to real earnings' management and significant at a 5% and 1 % level, respectively. Moreover, risk management and qualified audit reports are positively associated with real earnings' management, and the former is significant at 10% while the latter is not. Whistleblowing is negatively correlated to real earnings' management and significant at a 10% level. Also, leverage and firm size are positively and inversely associated with real earnings' management but both insignificant.

Model 2 reveals that family affiliation is negatively related to real earnings' management and significant at a 5% level, while the related party transactions are positively associated with real earnings' management but insignificant. The model further reveals that audit fees and tenure are negatively related to real earnings' management and significant at a 5% level. Brand name auditors and risk management are positively linked to real earnings' management and significant at a 10% and 5% level, respectively. Moreover, whistleblowing is positively correlated to real earnings' management and significant at 10%. However, a qualified audit report is negatively linked to earnings' management and significant at a 5% level. Furthermore, leverage and firm size are positively associated with real earnings but not significant.

### **Model 3**

The model reveals that family affiliation is negatively linked to real earnings' management and significant at a 1% level, while related party transaction is positively associated with real earnings' management but not significant. In addition, audit fee is positively connected to real earnings' management and significant at a 5% level while it was initially reported at a 1% level in model 1 partially mediated by the introduction of the mediator variable. The study further revealed that audit tenure is positively correlated with real earnings' management and significant at a 10% level while it was prior reported at a 5% level partial mediation. In contrast, brand name auditor is negatively linked to real earnings' management and significant at a 1% level; also, risk management practice and whistleblowing have negatively associated to real earnings' management and significant at a 10% level. Furthermore, qualified audit reports are negatively linked to real earnings' management but insignificant. Lastly, leverage and firm size are positively correlated to real earnings' management, and the former is significant at 10% while the latter is insignificant.

### **Robustness Check**

This study conducted further tests to validate initial findings in regression 1. The study declared the data panel and ran the autocorrelation test (Wooldridge, 2010). In the autocorrelation test, the findings reveal no first-order autocorrelation in the data. Cook and

Weisberg's test was conducted to address heteroscedasticity issues in the data, and the result was insignificant. On the account that the outcome is not significant, meaning that it does not suffer from heteroscedasticity, which is a problem that occurs when the variance of the error term is not constant over the sample observation, the rule of thumb is not to reject  $H_0$ , if  $p\text{-value} > 0.05$  (Gujarati, 2004).

In regression 2 all conditions are as reflected in the first regression. The only difference is that there was no issue of heteroscedasticity that required correction using a robust standard error estimator. However, there is an issue with the link test regarding the model specification. In a link test, if it is significant, it indicates irrelevant variables have been included or some of the relevant variables have not been included in the modelling process as portrayed by the hashtag. The study further tested appropriateness of the model using the Breusch- Pagan test, and the decision was significant which means it favours random effect GLS. Also, the research conducted a Hausman test to see whether a fixed or random result is appropriate, and the outcome is not significant, which supports fixed effects. Moreover, the study further tested Breusch- Pagan Lagrange multiplier test for random effects; the result portrayed it was not significant, which means no panel effects across entities (Baltagi, Bresson, & Piroette, 2003; Torres-reyna, 2007).

This study runs Regression 3 using pool OLS, and no first-order autocorrelation found as depicted by the Wooldridge 2010 test from table 4, which is 0.748. The study further conducted a heteroscedasticity test, and the outcome was found to be insignificant, as portrayed by Breusch- Pagan Cook and Weisberg check-in table 4.

## **Conclusion**

This study examines the mediating effect of audit committee independence on the relationship between firm physiognomy and real earnings' management in listed non-financial firms in Nigeria. The study used balance panel data of 469 firm-year observations covering seven years for data analysis. The findings showed that audit committee independence partially mediates the relationship between firm physiognomy and real earnings' management in listed non- financial firms in Nigeria. Also, further analysis revealed that affiliated family firms are positively impacted on the earnings' quality while related party transaction is less effective in deterring real earnings' manipulation. The findings also indicated that audit fee and tenure are less effective in restraining the earnings' manipulation. The findings also showed that brand name auditors and risk management have positively impacted on the quality of earnings. Furthermore, whistleblowing and qualified audit reports are also effective in ensuring audit quality. There is a need for much emphasis on the use of competent audit committee independence among listed non-financial firms in



Nigeria. This could help in ensuring effective monitoring strategy and deterring real earnings' manipulation.

Therefore, it is recommended to audit committees as well as to auditors to enhance the audit quality and boost monitoring towards REM activities, and to constrain long term value-destroying behaviour. The study further recommended that the standard setter's financial reporting council of Nigeria and the Security and Exchange Commission should 1) boost the enforcement mechanism and 2) reprimand managers, auditors, and board of directors when they fail to ensure the production of quality financial reporting to safeguard existing and potential stakeholders.



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