

# “Does enterprise risk management impact accounting quality? Evidence from the Nigerian financial institutions”

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# DOES ENTERPRISE RISK MANAGEMENT IMPACT ACCOUNTING QUALITY? EVIDENCE FROM THE NIGERIAN FINANCIAL INSTITUTIONS

## Abstract

This research empirically looked at Enterprise Risk Management impact on accounting quality of selected listed firms in the Nigerian financial sector. The study engaged the use of content analysis of the selected listed firms' annual financial reports and corporate websites in determining the ERM disclosure index and its impact on accounting quality for a period of five years (pre-ERM period) (2007–2011) and another five years period (post-ERM period) (2013–2017). In attaining the proposed objectives, the study employed the panel Generalized Method of Moments estimator to test the hypotheses and find out the relationship between the variables. The study observed from the findings that there is no significant association between enterprise risk management and accounting quality during the pre-ERM period. This study adds to the body of knowledge in the area of corporate reporting, risk disclosure, risk management and accounting quality in emerging economies especially the Sub-Saharan African countries.

## Keywords

accounting quality, discretionary accruals, risk management, Nigerian financial sector

## JEL Classification

M4, M42

## INTRODUCTION

Trends in the accounting literature have shown that Enterprise Risk Management (ERM) in recent years has received global attention as a result of the financial crisis that engulfed most corporate institutions in the wake of 2008. Not only is ERM believed to have enhanced firm's ability to prevent the impact of economic crisis, it is believed that it will bring about an improved value relevance of accounting information for firms practising ERM (COSO, 2004). The support for ERM in most countries of the world today is a salient success in mitigation of further economic crisis and improvement in the quality of accounting information (Dabari & Saidin, 2015). In Nigeria, the research on ERM has gained prominence due to corporate scandals (Cadbury Nigeria in 2006; Banking crisis in 2009) experienced in recent times. The recognition of ERM worldwide is a significant step towards corporate transformation, which has birthed key areas in accounting research; some of which include risk governance, corporate governance, corporate monitoring and corporate ownership (Daud, Haron, & Ibrahim, 2011). It is believed that the complexity of financial dealing, increase in global cross border transactions, business uncertainty and volatility in financial markets have brought to the fore the recognition and practice of ERM.

The 2008 financial crisis and recent corporate failures such as Tesco accounting scandal in 2014, Toshiba accounting scandal in 2015, Gupta scandal in 2017, Samsung accounting scandal in 2018 have brought value relevance of accounting information under severe criticism. Financial analysts (Standard & Poor's, 2008; KPMG, 2015) believed that accounting practice has not kept pace with rapid changes in technology and high-tech risk management practices, which affect the value relevance of accounting information. It is believed that high profile corporate failures like financial crisis in 2008, Toshiba scandal in 2015, FIFA in 2016, Gupta Family in 2017, Samsung in 2018 were as a result of traditional based risk management, which does not effectively address enterprise-wide risk affecting financial reporting and disclosure (COSO, 2004; Hoyt & Liebenberg, 2008). Studies of Sami and Zhou (2004) and Ryan (2013) criticized traditional risk approach, because it operates in 'silos' and does not create room for interconnectivity among functions within the organization. Thus, researchers (Kleffener et al., 2003; Hoyt & Libenberg, 2008) argued that to address the issue of corporate failures and quality of accounting information, there is a need for a holistic and risk management approach in corporate organizations.

Furthermore, there is a dearth in the literature on studies that looked at the relationship between ERM and accounting quality in developed economies (Leece, 2012; Baxter et al., 2013; Ryan, 2013). It is not clearly established in literature particularly within the Nigerian context as regards the impact of ERM on accounting quality in the Nigerian financial industry. Even though few studies examined ERM in relation to firm performance and firm value in Nigeria, none of these studies has examined the impact of ERM on accounting quality. In addition, this research further considered the statistical relationship between the pre-ERM period and post-ERM period. Hence, this research examined impact of ERM on accounting quality taken into consideration the pre- and post-ERM implementation in the Nigerian financial sector.

This research adds value to the accounting and finance literature by providing a firsthand insight on how effective is the implementation of ERM impact on accounting quality of financial institutions in emerging economies like Nigeria. This study also presents relevant information on the expanded purpose of ERM framework within the accounting and risk management research and its transformative impact on the quality of financial reporting.

This paper is structured as follows. Section 1 of this research is focused on the review of relevant associated literature on ERM and accounting quality, also the theoretical framework that underpins the study. The research methods adopted for this research is captured in section 2, while section 3 discusses the issues relating to the empirical findings. Last section presents the conclusion and the recommendations.

## 1. LITERATURE REVIEW

### 1.1. Enterprise risk management and accounting quality

Accounting quality as the term implies to date does not have universally accepted description or definition. Nevertheless, existing studies on the subject have emphasized the need for the corporate report to reflect the true and fair value of a firm. Accounting quality as revealed by Ames (2013) means that shareholders' interest should be put into consideration and ensures that the value relevance of accounting information is considered. The concept of accounting quality is basically in-

tended to produce a financial report that is free from error, bias and material misstatement that can mislead shareholders and the public at large. Erin et al. (2017) opined that accounting quality is the ability of accounting information to reflect the true economic performance of a firm. Previous researchers (Penman, 2002; Barth et al., 2011; Emeni et al., 2016) used value relevance, timely loss recognition, and discretionary accruals as the major determinant of accounting quality. Similarly, Christensen et al. (2008) found that earnings timeliness, accrual quality, and earnings management are the relevant determinant of accounting quality. These authors base their argument on the fact that accounting quality has the capacity to

reduce earnings management, minimize discretionary accrual and provide more information on earnings. Therefore, accounting quality is an important measure of value relevance of accounting information for any organization that desires sustainable growth.

The concept of Enterprise Risk Management (ERM) gained worldwide interest because of its ability to enhance the accuracy of corporate disclosure, improve reliable financial statement, develop stronger risk management and improve accounting quality (Basel, 2003; COSO, 2004). It is believed that ERM implementation will facilitate compliance with reporting and disclosure requirement from various regulatory frameworks. It is expected that ERM implementation will improve accounting quality by reducing earnings management, enhance financial reporting quality and strengthen the internal processes of an organization (Adam et al., 2011; Uwuigbe et al., 2018; Erin et al., 2018). Because ERM is broader than internal control, it has the potential to support management's effort to achieve an organizational objective.

## 1.2. Empirical issues

In the last decade, ERM has become a new discipline that has kindled the interest of accounting, finance and risk management professionals and researchers. Several authors have written on various perspectives regarding ERM. Such studies are about ERM and firm value, ERM and firm performance, the determinants of ERM, benefits of ERM, ERM and accounting quality, ERM and earnings quality. Most of these studies have higher concentration on financial industry such as banks and insurance companies. Dabiri and Saidin (2015) assessed the current situation of ERM practices in Nigeria banking sector. The study observed that ERM implementation is partially complied by Nigerian banks with regard to CBN requirement for ERM frameworks. The study of Wu, Olson, and Dolgui (2015) examined the importance of decision making in ERM implementation in the US. As part of their findings they observed that risk-based decision making is very critical to the achievement of corporate strategy.

Similarly, Golshan, and Rasid (2012) gave an insight into some of the factors that determine the

ERM implementation of Malaysian public entities. The study found that the most important variables that influence the adoption of ERM in Malaysia are the type of auditor and the financial leverage. Consistent with the study of Golshan and Rasid (2012), Dabari and Saidin (2015) observed that the most important factors that influences or that impacts on adoption of ERM in the Nigerian listed banks are human resources competency, senior management commitment and internal audit effectiveness, while the associated characteristics of a board showed a negative relationship. Based on the above issues, the study hypothesis is developed as follows:

$H_0$ : *Enterprise risk management has no impact on accounting quality of firms operating in the Nigerian financial sector.*

## 1.3. Theoretical consideration

The theory of legitimacy has been a popular theory in the field of management and accounting in recent times. It is important due to its ability in analyzing the relationship between companies and their environment. Dowling and Pfeffer (1975) opined that legitimation is a process where firms has the right to transform, import and export information within the organizational context. Legitimacy theory is derived from organizational legitimacy, which means a firm's value system is congruent within the large social system of which the firm is a part. Deegan and Unerman (2011) argues that values and norms within the society are not fixed but continuously changing over time. The continuous societal value has heightened social expectation; therefore, for the organization to be successful, it has to be attentive to societal (environmental, human and social) needs. ERM implementation is considered as a legitimate function of the organization to fulfil its mandate of value creation for its stakeholders (Andersen, 2009; Brown et al., 2009). Many researchers have opined that ERM implementation must meet the societal needs in order to be considered relevant and successful (Corbett & Kirsch, 2001; Beasley et al., 2005; Sharma et al., 2010).

Most prior studies reviewed legitimacy theory with respect to organizational dynamics and value creation in determining ERM adoption (Hoyt

& Liebenberg, 2008; Arena et al., 2012). These authors argued that societal pressure was heightened after the corporate scandals experienced in recent times. These corporate failures increased regulatory and stakeholders' pressure on the need for organizations to adopt more rigorous corporate governance and risk management in creating value and performance. Some studies reveal that is legitimate for the organization to adopt a system that will facilitate the firm's performance and growth. Mikes and Kaplan (2015) considered legitimacy has an important resource in which organization is dependent for its survival. Their study claimed that legitimacy as a resource can be achieved through disclosure strategies. Also, Bromiley et al. (2014) and Shima et al. (2009) explained that in recent times, corporate legitimation strategies have increased focus on risk management practices with regard to firm's reputation. Reputation risk studies emphasized the importance of legitimacy theory for financial growth of the organization. It is considered a good resource for future profit, which invariably affects the firm's long-term sustainability. Since the ERM process covers the entire organization structure, therefore, ERM implementation is dependent upon several legitimate external factors from divergent stakeholders. These legitimate external factors have a significant impact on the successful implementation of ERM in the organization.

## 2. RESEARCH METHODS

### 2.1. Research design

This study engaged the use of content analysis and panel data method using the generalized method of moments in analyzing the impact of ERM on accounting quality of listed firms in the financial sector. This method was adopted in analyzing the content of the annual report with respect to ERM information. The study used panel data through the use of regression analysis and correlation method to ascertain the extent of impact and relationship between the independent variables and dependent variable. The use of content analysis is an appropriate method to examine ERM information in the annual reports (Hoyt & Liebenberg, 2008; Pagach & Warr, 2011; Osariemen et al., 2018). The essence of content

analysis is to convert qualitative information into quantitative scores, which enable the comparison among companies.

This study covers the period from 2007 to 2011 (pre-ERM period) and from 2013 to 2017 (post-ERM period). The study population consists of fifty-seven (57) firms listed on the Nigerian Stock Exchange (NSE) for the specified period. Based on Taro Yamane sampling formula, the sample size was limited to fifty (50) firms. We gathered our data from the annual reports of selected firms and from African financial report. This study focused on financial institutions because of its stabilizing role in the economy and its ability to prevent a systemic collapse of the entire economic system. Therefore, it is crucial to critically examine the impact of ERM on accounting quality of firms in the Nigerian financial sector. The data were analyzed through descriptive statistics, Pearson correlation and generalized method of moments (GMM).

### 2.2. Measurement of variables

In this section, we examined the variables used in this study ranging from the dependent variable to independent variables, however, the same set of variables were used in all the study periods, respectively.

*ERM\_Index*: this is derived from both corporate governance measure and risk assessment procedure.

The first three variables from corporate governance (CG) measure are:

Presence of CRO – 1

Risk committee – 2

Reporting frequency between risk committee (RC) and board of directors (BOD) – 3

The other three variables from the risk assessment procedure measure are:

Risk assessment frequency (RA frequency) – 4

Risk assessment level (RA level) – 5



**Table 1.** Measurement of variables

Source: Compiled by the author (2018).

| Variable(s)                                 | Symbols   | Operationalization   |
|---|-----------|--|
| <b>Dependent variable</b>                   |           |  |
| Discretionary accruals (accounting quality) | DACC      | $DACC_{it} = \alpha_0 + \alpha_1 CF_{it} - 1 / TA_{it} - 1 + \alpha_2 CF_{it} / TA_{it} - 1 + \alpha_3 CF_{it} + 1 / TA_{it} - 1 + \alpha_4 \Delta REV_{it} / TA_{it} - 1 + \alpha_5 PPE_{it} / TA_{it} - 1$ |
| <b>Independent variable</b>                 |           |  |
| Enterprise risk management index            | ERM_Index | ERM disclosure index   |
| Chief risk officer                          | CRO       | CRO is dummy variable, set equal to 1 for firms with CRO designation, and 0 otherwise  |
| Risk management committee independence      | RMCI      | The proportion of non-executive directors on the risk management committee   |
| <b>Control variables</b>                    |           |  |
| Firm size                                   | FSIZE     | Proxy by the natural logarithm of total assets   |
| Sales growth                                | SG        | It is a proxy for growth opportunity that is the difference between the current year sales less previous year sales divided by previous year sales.  |
| Financial leverage                          | LEV       | Proxy by end year liabilities divided by equity book value   |
| Turnover                                    | TURN      | Turnover divided by total assets   |
| Loss  | LOSS      | Net loss divided by end of year total assets   |
| Cash flow                                   | CF        | Net cash flow from operating activities divided by total assets  |

Risk assessment methodology (RA Method) – 6

The comprehensive *ERM\_Index* is the sum of all the six variables ranges from 1 to 6. *ERM\_Index* rates firms from numbers 1 to 6 depending on the level of their ERM implementation.

### 2.3. Model specification

This study adapts the econometrics model of Christensen et al. (2008) by including Chief Risk Officer (CRO) presence and Risk Management Committee Independence (RMCI) as additional two explanatory variables to test discretionary accruals (accounting quality).

The econometric model is expressed in Equations 1 and 2:

$$DACC = f(ERM\_Index, CRO, RMCI, LOSS, FSIZE, SG, LEV, TURN, CF), \quad (1)$$

$$DACC_{it} = \beta_0 + \beta_1 ERM\_Index_{it} + \beta_2 CRO_{it} + \beta_3 RMCI_{it} + \beta_4 LOSS_{it} + \beta_5 FSIZE_{it} + \beta_6 SG_{it} + \beta_7 LEV_{it} + \beta_8 TURN_{it} + \beta_9 CF_{it} + V_i + \dot{e}_{it}, \quad (2)$$

where *DACC* – discretionary accruals (it represents the number of assets or liability recorded in the books of account but will be realized at a later

date when settled), *ERM\_Index* – ERM disclosure index (it is the level of compliance in terms of ERM disclosure by sampled firms), *CRO* – chief risk officer (it represents firms that have the presence of CRO to manage its risk department), *RMCI* – risk management committee independence (it is the proportion of non-executive directors represented on the risk management committee board), *LOSS* – loss recognition (it is a loss incurred in the course of business activities), *FSIZE* – firm size (it represent the size of a firm in terms of the total assets accumulated), *SG* – sales growth (it is the percentage of growth earned in the current year compared with the prior year) for growth opportunity, *LEV* – leverage (it is the ratio of total liabilities in relation to total equity), *TURN* – turnover (it is the actual income generated in the course of business), *CF* – cash flow (it is the cash generated from business operations),  $\beta_0$  – intercept of the regression line, regarded as constant,  $i = 1, 2, 3 \dots 50$  indicating the number of firms that will be used for the study,  $t = 1, 2, 3 \dots 10$  indicating the time period that will be used for this study (2007–2011 and 2013–2017),  $\beta_{1-9}$  – coefficient or slope of the regression line or independent variables,  $\dot{e}_{it}$  – the error term which accounts for other possible factors that could affect the dependent variable not captured in the model (the stochastic error term is assumed to be identically and independently distributed),  $V_i$  – individual effects in the equation.

### 3. RESULTS AND DISCUSSION

#### 3.1. Correlation results

Correlation analysis is carried out to detect any autocorrelation between ERM and accounting quality variables.

Table 2 shows the correlation coefficient between the response variable and the explanatory variables. Discretionary accruals revealed a positive relationship with chief risk officer; even though the probability stands at 24% and the coefficient

of 0.06. The same is observed for other variables (firm size, the presence of chief risk officer, turnover, leverage, loss recognition, risk management committee independence and operating cash flows). Only growth showed a negative relationship with discretionary accruals; this result may be due to exogenous factors with the firms' operating environment.

Table 3 shows the correlation coefficient between the criterion variable and the variables. Discretionary accruals revealed a positive association with chief risk officer; with a high prob-

**Table 2.** Pearson correlation of pre-ERM period (2007–2011)

Source: Authors' computation (2018) using EViews.

Covariance analysis: ordinary  
Included observations: 250  
Correlation

| Probability | DACC                | CRO                | TURN                | ERM                 | FSIZE               | GROWTH              | LEV                 | LOSS               | RMCI              | CF     |
|-------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|-------------------|--------|
| DACC        | 1                   | –                  | –                   | –                   | –                   | –                   | –                   | –                  | –                 | –      |
| CRO         | 0.060504<br>0.2407  | 1                  | –                   | –                   | –                   | –                   | –                   | –                  | –                 | –      |
| TURN        | 0.270084<br>0.00642 | 0.131972<br>0.037  | 1                   | –                   | –                   | –                   | –                   | –                  | –                 | –      |
| ERM         | 0.218396<br>0.0005  | 0.137822<br>0.0294 | 0.639152<br>0.0562  | 1                   | –                   | –                   | –                   | –                  | –                 | –      |
| FSIZE       | 0.30238<br>0.1238   | 0.096573<br>0.1278 | 0.873509<br>0.1671  | 0.565707<br>0.0271  | 1                   | –                   | –                   | –                  | –                 | –      |
| GROWTH      | –0.218103<br>0.0005 | 0.033478<br>0.5983 | 0.177828<br>0.0048  | 0.20852<br>0.0009   | 0.092429<br>0.1451  | 1                   | –                   | –                  | –                 | –      |
| LEV         | 0.079376<br>0.211   | 0.043916<br>0.4894 | –0.200683<br>0.0014 | –0.191264<br>0.0024 | –0.313606<br>0.0034 | –0.006075<br>0.9239 | 1                   | –                  | –                 | –      |
| LOSS        | 0.098311<br>0.0016  | 0.168231<br>0.0077 | 0.888674<br>0.0064  | 0.614873<br>0.2312  | 0.829652<br>0.3421  | 0.146543<br>0.0205  | –0.239556<br>0.0001 | 1                  | –                 | –      |
| RMCI        | 0.057678<br>0.3638  | 0.100829<br>0.1118 | 0.467706<br>0.2512  | 0.444871<br>0.0031  | 0.49641<br>0.0132   | 0.091756<br>0.1481  | 0.029689<br>0.6404  | 0.478409<br>0.0034 | 1                 | –      |
| CF          | 0.264895<br>0.1237  | 0.156994<br>0.0129 | 0.985786<br>0.3521  | 0.643096<br>0.0012  | 0.874781<br>0.0781  | 0.192398<br>0.0022  | –0.19962<br>0.0015  | 0.898292<br>0.0713 | 0.45389<br>0.0054 | 1<br>– |

**Table 3.** Pearson correlation of post-ERM period (2013–2017)

Source: Authors' computation (2018) using EViews.

Covariance analysis: ordinary  
Included observations: 250  
Correlation

| Probability | DACC                | CRO                | TURN               | ERM                 | FSIZE               | GROWTH              | LEV                | LOSS               | RMCI                | CF     |
|-------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|--------|
| DACC        | 1                   | –                  | –                  | –                   | –                   | –                   | –                  | –                  | –                   | –      |
| CRO         | 0.32688<br>0.9523   | 1                  | –                  | –                   | –                   | –                   | –                  | –                  | –                   | –      |
| TURN        | 0.405742<br>0       | 0.007273<br>0.8711 | 1                  | –                   | –                   | –                   | –                  | –                  | –                   | –      |
| ERM         | 0.193145<br>0.42738 | 0.663454<br>0.0212 | 0.480794<br>0.0002 | 1                   | –                   | –                   | –                  | –                  | –                   | –      |
| FSIZE       | 0.331883<br>0.0021  | 0.012177<br>0.7859 | 0.474892<br>0.1233 | 0.341087<br>0.2671  | 1                   | –                   | –                  | –                  | –                   | –      |
| GROWTH      | 0.140223<br>0.0017  | 0.86749<br>0.003   | 0.275918<br>0.1455 | 0.727166<br>0.0006  | 0.189334<br>0.9621  | 1                   | –                  | –                  | –                   | –      |
| LEV         | 0.152791<br>0.0006  | 0.001587<br>0.9718 | 0.137509<br>0.0021 | 0.063528<br>0.1561  | –0.096952<br>0.0302 | 0.072962<br>0.1032  | 1                  | –                  | –                   | –      |
| LOSS        | 0.418247<br>0.0001  | 0.030117<br>0.5016 | 0.820418<br>0.0002 | 0.52021<br>0.0024   | 0.567714<br>0.0035  | 0.248948<br>0.2111  | 0.060013<br>0.1803 | 1                  | –                   | –      |
| RMCI        | 0.138377<br>0.0019  | –0.035831<br>0.424 | –0.118515<br>0.008 | –0.076428<br>0.0878 | 0.323535<br>0.2451  | –0.087001<br>0.0519 | –0.006997<br>0.876 | –0.19642<br>0.4519 | 1                   | –      |
| CF          | 0.253576<br>0.8321  | 0.42642<br>0.0002  | 0.502864<br>0.0003 | 0.516727<br>0.0021  | 0.309234<br>0.0052  | 0.591974<br>0.0046  | 0.197135<br>0.0032 | 0.480782<br>0.3211 | –0.079274<br>0.0766 | 1<br>– |

ability stands of 95% with a coefficient of 0.32. This means more presence of CRO in the financial sector is expected to reduce the discretionary accruals, which is one of earnings management techniques. The same is observed for other variables (firm size, the presence of chief risk officer, turnover, leverage, loss recognition, risk management committee independence and operating cash flows).

### 3.2. Multivariate analysis – panel generalized method of moments (GMM)

Table 4 presents the result of panel GMM of the pre-ERM period (2007–2011) (ERM and accounting quality). The result shows that the CRO estimated coefficient is positive having a value of 0.20287 which suggests that a unit increase in CRO leads to about 20% increase in discretionary accruals (DACC). Also, CRO is

insignificant ( $0.22 > 0.05$ ) at 5% significance level; this means CRO presence has not to lead to a reduction in discretionary accruals in the pre-ERM period. ERM index reported a coefficient value of 0.4667; this means that a unit increase in ERM will result in a 47% increase in discretionary accruals (DACC). Also, ERM is insignificant at  $p$ -value ( $0.76 > 0.05$ ) at 5% significance level. The same is observed for RMCI, which produced an insignificant position at  $p$ -value ( $0.64 > 0.05$ ). The Durbin-Watson statistic 2.033979 is not substantially different from the 2.00 benchmark and indicative of the absence of the problem of multicollinearity. From the result, the adjusted  $R$ -squared value of 0.408941 implies that about 40% of the cross-sectional variation in the explained variable of discretionary accruals is accounted for by the explanatory variables. This means the adjusted  $R$ -squared value of 40% shows an average explanatory power of the independent variables.

**Table 4.** Generalized method of moments (GMM) pre-ERM period

Source: Authors' computation (2018) using EViews.

Dependent variable: *DACC*  
 Method: panel generalized method of moments  
 Date: 12/19/18 Time: 12:02  
 Sample (adjusted): 2007–2011  
 Periods included: 5  
 Cross-sections included: 50  
 Total panel (balanced) observations: 250  
 2SLS instrument weighting matrix  
 Instrument specification: *C DACC(-1) ERM(-1) CF(-1) CRO(-1) FSIZE(-1) GROWTH(-1) LEV(-1) LOSS(-1) RMCI(-1) DACC(-2) ERM(-2) CF(-2) GROWTH(-2) LOSS(-2) TURN(-1)*  
 Constant added to instrument list  
 Dependent variable: *DACC*  
 Method: panel generalized method of moments

| Variable                   | Coefficient | Std. error                 | t-statistic | Prob.    |
|----------------------------|-------------|----------------------------|-------------|----------|
| CONSTANT                   | 0.456271    | 7.986211                   | 0.27892     | 0.3562   |
| <i>D(CRO)</i>              | 0.202873    | 5.474882                   | 0.197075    | 0.2286   |
| <i>D(ERM)</i>              | 0.466786    | 1.543926                   | 0.302337    | 0.7626   |
| <i>D(LEV)</i>              | -0.168062   | 19.75771                   | -1.755296   | 0.0817   |
| <i>D(GROWTH)</i>           | -0.821466   | 5.856716                   | -0.311005   | 0.7562   |
| <i>FSIZE</i>               | 0.253378    | 0.676254                   | 0.374679    | 0.7081   |
| <i>LOSS</i>                | -0.606826   | 1.474036                   | -2.446905   | *0.0148  |
| <i>D(RMCI)</i>             | 0.424522    | 15.94937                   | 0.465506    | 0.6418   |
| <i>TURN</i>                | 0.88813     | 0.051519                   | 17.23874    | *0.0000  |
| <i>R</i> -squared          | 0.433025    | Mean dependent var         |             | 10.8093  |
| Adjusted <i>R</i> -squared | 0.408941    | S.D. dependent var         |             | 10.59464 |
| S.E. of regression         | 4.508125    | Sum squared resid          |             | 7926.045 |
| Durbin-Watson stat         | 2.033979    | <i>J</i> -statistic        |             | 2.606125 |
| Instrument rank            | 16          | Prob( <i>J</i> -statistic) |             | 0.856407 |



**Table 5.** Generalized method of moments (GMM) post-ERM period

Source: Authors' computation (2018) using EViews.

Dependent variable: *DACC*

Method: panel generalized method of moments

Date: 12/19/18 Time: 11:57

Sample period: 2013–2017

Periods included: 5

Cross-sections included: 50

Total panel (balanced) observations: 250

2SLS instrument weighting matrix

Instrument specification: *C DACC(-1) ERM(-1) CF(-1) CRO(-1) FSIZE(-1)**GROWTH(-1) LEV(-1) LOSS(-1) RMCI(-1) DACC(-2) ERM(-2) CF(-2)**GROWTH(-2) LOSS(-2) TURN(-1)*

Constant added to instrument list

Dependent variable: *DACC*

Method: panel generalized method of moments

| Variable                  | Coefficient | Std. error                 | t-statistic | Prob.    |
|---------------------------|-------------|----------------------------|-------------|----------|
| CONSTANT                  | -0.67321    | 8.93083                    | 2.987521    | 0.0495   |
| <i>D(CRO)</i>             | -0.46329    | 4.55338                    | 2.078382    | *0.0383  |
| <i>D(ERM)</i>             | -0.420458   | 1.250831                   | -0.336143   | *0.0469  |
| <i>D(GROWTH)</i>          | 0.592578    | 4.574502                   | -0.785348   | 0.4327   |
| <i>LOSS</i>               | 0.363546    | 0.187444                   | 1.999492    | *0.0532  |
| <i>CF</i>                 | -0.041178   | 0.639448                   | 0.064397    | 0.9487   |
| <i>LEV</i>                | -0.108485   | 1.154916                   | -2.691525   | *0.0074  |
| <i>D(RMCI)</i>            | -0.355415   | 13.32783                   | 2.176729    | *0.0058  |
| <i>FSIZE</i>              | 0.046459    | 0.074512                   | 0.623518    | 0.5333   |
| <i>TURN</i>               | 0.868897    | 0.048942                   | 17.75291    | *0.0000  |
| <i>R-squared</i>          | 0.898534    | Mean dependent var         |             | 10.8093  |
| Adjusted <i>R-squared</i> | 0.885962    | S.D. dependent var         |             | 10.59464 |
| S.E. of regression        | 3.577765    | Sum squared resid          |             | 4992.158 |
| Durbin-Watson stat        | 2.112782    | <i>J</i> -statistic        |             | 8.64077  |
| Instrument rank           | 16          | Prob( <i>J</i> -statistic) |             | 0.194811 |

Table 5 presents the result of panel GMM of the post-ERM period (2013–2017) (ERM and accounting quality). The result shows that the estimated coefficient of CRO is negative having a value of -0.463290, which suggests that a unit increase in CRO leads to about 46% reduction in discretionary accruals (DACC). Also, CRO shows a significant ( $0.03 < 0.05$ ) with discretionary accruals (DACC) at 5% significance level; this means the CRO presence has led to a reduction in earning management in the post-ERM period. ERM index reported a coefficient value of -0.4204; this means that a unit increase in ERM will result in a 42% reduction in discretionary accruals (DACC). Also, ERM is significant at *p*-value ( $0.04 < 0.05$ ) at 5% significance level. The same is observed for RMCI which produced a significant position at *p*-value ( $0.005 < 0.05$ ). The Durbin-Watson statistic 2.11782 is not substantially different from the 2.00 benchmark and indicative of the absence of the problem of multicollinearity. From the result,

the adjusted *R*-squared value of 0.8859 indicates that about 88% of the cross-sectional variation in the dependent variable of discretionary accruals is accounted for by the explanatory variables. This means the adjusted *R*-squared value of 88% shows a strong explanatory power of the independent variables for the post-ERM period.

### 3.3. Restatement of hypothesis and discussion of findings

$H_0$ : *Enterprise risk management has no impact on accounting quality of firms operating in the Nigerian financial sector.*

The aforementioned hypothesis was tested in an attempt to draw a detailed conclusion about explanatory variables between the two periods and present a reasonable assessment. Looking at the panel GMM (Table 4) of the pre-ERM period for (ERM and accounting quality). The result

shows that the CRO coefficient is insignificant ( $0.22 > 0.05$ ) at 5% significance level. This outcome implies that the presence of CRO has not led to a reduction in discretionary accruals in the pre-ERM period. This implies that the presence of CRO alone is not sufficient to reduce discretionary accruals practices in an organization. This outcome is similar to the findings of Pagach and Warr (2011), Bromiley et al. (2014), Li et al. (2016) where they observed that the presence of CRO alone cannot reduce discretionary accruals. They are of the opinion that it takes a holistic effort of other risk managers, financial managers, and executive management to reduce excessive discretionary accruals. Also, findings from the study also shows that ERM index reported a coefficient value of 0.76; which is also not significant at  $p$ -value ( $0.76 > 0.05$ ) at 5% significance level. This result suggest that the non-implementation of ERM during this period by most firms might account for the inverse relationship between ERM index and discretionary accruals.

The same is observed for RMCI, which produced an insignificant position at  $p$ -value ( $0.64 > 0.05$ ). This means that risk management committee independence has not significantly impacted the level of discretionary accruals during this period. It could also mean that independent directors are not carrying out their oversight function of risk governance and risk compliance. Another reason for this insignificant relationship could be the non-involvement of independent directors in the risk committee. Also, the firm size produced insignificant ( $0.70 > 0.05$ ) relationship with discretionary accruals during the pre-ERM period. This implies the size of the firm has nothing to do with the practice of discretionary accruals. Studies have shown that managers engage in abnormal discretionary accruals for selfish reasons, especially to enhance their performance evaluation (Dechow & Schrand, 2004; Hoyt & Liebenberg, 2011; McShane et al., 2011). What is important is adherence to ethical values in financial reporting irrespective of the size of the firm.

Furthermore, the financial leverage result is insignificant at  $p$ -value ( $0.08 > 0.05$ ); this means there is an inverse relationship between lever-

age and discretionary accruals. This could suggest that firms engage in discretionary accruals in order to present quality accounting information to equity shareholders who finance the operation of the business. However, only turnover ( $0.0001 < 0.05$ ) and loss recognition ( $0.01 < 0.05$ ) show a positive and significant relationship with discretionary accruals. The implication is that aggressive discretionary accruals might invariably lead to an increase in turnover and reduction in losses if other things are constant. The coefficient of determination ( $r$ ) shows 0.433025, while the adjusted  $R$ -squared value shows 0.408941. This implies that about 41% of the cross-sectional variation in the dependent variable of discretionary accruals is accounted for by the explanatory variables. Given that the majority of the explanatory variables produce an insignificant relationship with the dependent variable. Hence, the study accepts the null hypothesis and reject the alternative hypothesis for the pre-ERM period.

Considering the panel GMM (Table 5) of the post-ERM period (ERM and accounting quality). The outcome here implies that CRO coefficient is positive and significant with a  $p$ -value of ( $0.03 < 0.05$ ) at 5% significance level; this means the presence of CRO has positively impacted discretionary accruals in the post-ERM period. This implies that the presence of CRO has reduced the practice of discretionary accruals of firms operating in the financial sector after the implementation of ERM in Nigeria. Even though some researchers (Pagach & Warr, 2011; Bromiley et al., 2014; Li et al., 2016) disagreed that the presence of CRO alone cannot reduce discretionary accruals, another school of thoughts argued that the institutionalization of CRO has the potency to reduce fraud, minimize creative accounting and other unethical practices (Aabo et al., 2005; Mojtaba & Davoud, 2007; Daud et al., 2010). Similarly, ERM index has a coefficient value of 0.04; which is significant at  $p$ -value ( $0.04 < 0.05$ ) at 5% significance level. This is indicating that the implementation of ERM during this period by most firms might account for the positive and significant relationship between ERM index and discretionary accruals. This means the whole ERM strategy has reduced the incidence of discretionary accruals practices.

The result relating to risk management committee independence (RMCI) presents a positive and significant relationship with the dependent variable (DACC) at  $p$ -value ( $0.005 < 0.05$ ). This means that risk management committee independence has significantly impacted the level of discretionary accruals during this period. It could also mean that independent directors are carrying out their oversight function of risk governance, risk implementation, and risk disclosure. Another reason for this significant relationship could be the involvement of independent directors in the risk committee and to ensure compliance. Also, the firm size produced insignificant ( $0.533 > 0.05$ ) relationship with discretionary accruals during the pre-ERM period. The same is observed for the post-ERM period. This implies the size of the firm has nothing to do with the practice of discretionary accruals. Studies have shown that managers engage in abnormal discretionary accruals for selfish reasons, especially to enhance performance evaluation (Dechow & Schrand, 2004; Hoyt & Liebenberg, 2011; McShane et al., 2011).

Furthermore, the financial leverage result is insignificant at  $p$ -value ( $0.07 > 0.05$ ). This implies that an inverse relationship exists between leverage and discretionary accruals. This suggests that firms engage in discretionary accruals in order to present quality accounting information to equity shareholders who finance the operation of the business. However, only turnover ( $0.0001 < 0.05$ ) and loss recognition ( $0.05 < 0.05$ ) show a positive and significant relationship with discretionary accruals. The same is observed during the pre-ERM period. The implication is that aggressive earnings management will invariably lead to an increase in turnover and reduction in losses if other things are constant. The coefficient of determination ( $r$ ) shows 0.898534, while the adjusted  $R$ -squared value shows 0.885962. This implies that about 88% of the cross-sectional variation in the dependent variable of discretionary accruals is accounted for by the explanatory variables. Given that the majority of the explanatory variables produce a significant relationship with the dependent variable. Thus, the study accepts the alternative hypothesis and rejects the null hypothesis for the post-ERM period.

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## CONCLUSION

The research observed that there is no significant association between enterprise risk management (ERM) and accounting quality during the pre-ERM period. It also observed that there was significant positive relationship between enterprise risk management (ERM) and accounting quality during the post-ERM period. This shows that ERM implementation by Nigerian financial firms has a significant and positive impact on accounting quality, which has greater tendency to minimize the practice of discretionary accruals. The study thus concludes that the relationship between enterprise risk management (ERM) and accounting quality during the pre-ERM period is not significant. However, the study's finding documents a positive and significant relationship between enterprise risk management (ERM) and accounting quality during the post-ERM period. This shows that ERM implementation by Nigerian financial firms has a greater and positive impact on accounting quality, which has the likelihood to minimize the practice of discretionary accruals.

This research adds value to the growing research in the area of corporate reporting, risk management, risk disclosure, and accounting quality in emerging economies, especially the Sub-Saharan African countries. The study suggests that accounting standard-setters and regulatory agencies in Nigeria should make pronouncement by setting up guiding principles on the issues of risk disclosure index development to complement the financial information in the annual reports.

This research was limited to firms of financial sector in Nigeria. However, this limitation does not in any way affect the findings of this study. Nevertheless, future research could look at comparative analysis of African countries compared to other continents of the world in the area of ERM and accounting quality.

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