ABSTRACT

The aim of this paper is the effect of board membership diversity on earnings management among listed non-financial firms in three selected Sub-Saharan African countries (Nigeria, Kenya and South Africa) were used for the period of ten years spanning 2009 to 2018. The study employed ex-post facto research design. The secondary sources of data were collected from annual reports of the selected non-financial firms quoted in their respective stock exchange and three specific objectives and hypotheses were tested and analyzed using descriptive statistics, Pearson correlation analysis and panel regression analysis. Using some selected Sub-Saharan African countries a sample of 470 observations were used, the result revealed that board membership diversity has positive influence on earnings management, the influence is effective in driving the level of manipulated earnings among firms in Sub-Saharan Africa because the result was found to be statistically significant, therefore the researcher rejects the null hypothesis and accepts the alternatives hypothesis which states that foreign board membership diversity has significant effect on earnings management among non-financial firms in Sub-Saharan African countries with a high significant value of 0.005 indicated using hypothesis testing tool. The research concludes that foreign board membership diversity is very influential on earnings management of non-financial firms in Sub-Saharan African countries.
Keywords: Earning management; board membership; diversity; non-financial firms; Sub-Saharan; correlations; descriptive statistics.

1. INTRODUCTION

Board diversity as an aspect of corporate governance has gained attraction among researchers and practitioners of corporate finance. Although much research has been devoted to corporate governance, few studies exist on board diversity especially on its relationship with earnings management across countries. The current study sought to examine the corporate board diversity on earnings management among listed non-financial firms; Roles of boards of directors have been major pillars of corporate governance over the last two decades [1]. A proportion of scholars express their views that different boards of directors affect organizational performance resulting in different orientations. Board members’ gender, age, education and experience in the industry are some of the most common attributes of boards of directors [2]. There is evidence of managers engaging in earnings management through accrual manipulation which has been shown in many different contexts, for many different accruals, and in response to many managerial incentives [3]. Also, accrual management involves possible accounting deception with the intention of bringing litigation risk to the establishment. A second source through which earnings may possibly be manipulated is real activities management, like providing discounts to customers to momentarily boost sales, while cutting research and development expense [4,5]. In valid activities management, managers can offer impermanent price discounts to boost sales, cut optional expenditures like research and development and also advertising, or overproduction to trim down cost of goods sold [5]. However, real activities manipulation sacrifices firms’ future economic benefits, even though this approach introduces fewer litigation risks to the firm. It was as a result of looking for a way to manage earnings, that board of directors as an organ of the firm is instituted to ensure good corporate governance. OECD noted that the board of directors is a legal requirement in most countries of the world and one of the essential prerequisites of good corporate governance of firms [6]. The board of directors of a firm comprises people of different ethnicity and gender (male and female) charged with the responsibilities of monitoring and controlling management and ensuring credible reporting of earnings in the interest of varied shareholders and other stakeholders. When the board of directors of a firm is not well constituted, the firm becomes vulnerable to earnings malpractice on the part of those charged with the management of the cooperation or entity [7]. Earnings management practices do not only give false reflection of the firm’s financial performance but bring about less dependable reported accounting numbers which consequently reduces investors confidence in the financial reports for the purpose of decision making. However, accounting earnings are more practical and of higher superiority when managers’ opportunistic behavior is checked and also limited using monitoring systems such as the board [8]. Researchers have reviewed the studies on earnings management and its relationships with corporate board diversity, but there is not detailed study on the effect of board member diversity on earnings management in the case study. This makes the researcher to venchor into the knowledge gap. This study therefore, explores the relationships that exist within foreign board member diversity on the earnings management among quoted non-financial firms in Sub-Saharan African countries which is the selected geographical locations use for this study.

1.1 Objectives of Research Study

The main objective of this study is to ascertain the influence of foreign board member diversity on Earnings Management among quoted non-financial firms in Sub-Saharan African countries.

1.2 Research Questions

The following research question was addressed:

I. How does board membership diversity affect earnings management of quoted non-financial firms in Sub-Saharan African countries?

1.3 Hypotheses of Research Study

The following hypothesis was formulated from the research question above.

H0: Foreign board membership diversity has no significant effect on earnings management among non-financial firms in Sub-Saharan African countries.
Hi - Foreign board membership diversity has significant effect on earnings management among non-financial firms in Sub-Saharan African countries.

2. LITERATURE

Earnings management has been expressed, explained and described in so many ways. The explanation of earnings management distinguished depending on how someone considers the practice of managing earnings, for those who accept the practice of earnings management signifying it is good for the firm; earnings management is defined as the means used by managers to improve the financial position of the firm [9,10]. Earnings management activity of firms is predominantly an effort for executive directors to hide their hush-hush control benefits. Insiders can use their diplomacy in financial reporting to overstate earnings as well as conceal unfavorable earnings realizations, for instance is losses that would have prompted outsider intrusion. Seeing the earnings management into a negative way, the practice considered as manipulation of earnings by management in order to gain out of it or to show that the company is performing while it is not at the expense of the shareholder’s wealth as well as the investors [11,12]. According to Wu [13], earnings management occurs when managers use decision in financial reporting and in the way financial transactions are prepared to harm financial reports and to give the wrong impression about some stakeholders concerning the underlying economic performance of the company and to influence contractual results upon which reported accounting numbers depend. Mishra and Malhotra [14] argued that earnings management occurs when company managers take advantage of the flexibility provided by accounting rules and standards to match the reported earnings of a company with a preferred or desired level. Earnings management distorts the quality in addition to integrity of financial reporting and can in the process, hinder effective decision making by investors as well as other stakeholders of a firm. Earnings management is the technique which deliberately influences the process of financial reporting to acquire some confidential gain. Earnings management is the discretionary exploitation of earnings levels by managers. Even though earnings management is allowable by law but it is unreliable. Unexpected collapse along with demise of most profile firms in the past were allied to poorly constituted board along with misleading earnings management practices [15,18]. In the same way, insiders can use accounting choices to minimize earnings in years of good performance to create reserves for periods of poor future performance, successfully making reported earnings a lesser amount of variable than true firm performance. Managers can choose from among the available accounting options to align their earnings levels with their intentions [16,17].

Alqatan [18] aims to examine the consequences of board diversity. The study measures the impact of gender, age, national diversity on earnings management. Earnings management was measured with the model customized by [19] and [20]. Firm performance measured by ROA, ROE, Tobin’s Q and total shareholder return. Debnath et al. [21] analyzed the association between female directorship on the board and real earnings management in context of an emerging economy, in Bangladesh. The perseverance of female directors may resolve the problem of income-increasing genuine earnings management in an important manner. Additionally, it provides proof that corporate governance plays a favorable role in restraining true earnings management chiefly when the board appoints female director(s). Hosam, et al. [10] determined whether the Board Characteristics have any influence on Earnings Management in the midst of the international Oil and Gas Corporation in the world. The result of this learning shows that the board independence has a significant effect on the diminution of earnings management. Gender diversity has a significant influence on the diminution of earnings management. Furthermore, the chief executive officer (CEO) duality has a significant effect on the raise of earnings management, which implies that untying the functions of CEO along with Chair of the Board may augment the board of directors’ monitoring as well as control ability and appraise Directors’ information processing capacities. Corporate board of selected non-financial firms in Sub-Saharan Africa constrains classification shifting were examined [22]. This suggests therefore that tough corporate board tends to act as a substitute for stringent accounting standards. The impact of board diversity on earnings management in the midst of listed manufacturing firms at the Nairobi Stock Exchange was ascertained [23]. The outcome established that Gender diversity had statistically significant negative influence on earnings management of listed manufacturing firms in Kenya. Age diversity had a non-statistically
significant effect on earnings management while board independence had a non-statistically significant effect on earnings management. Nationality had a statistically significant effect on earnings management and Firm size had a statistically significant effect on earnings management. Board oversight function and earnings management was investigated in two international countries namely; French and Canadian firms [24]. They found that size of the board and leadership structure has a neutral association to earnings management. They found a positive relation between strong earnings management determinants such as shares owned by CEO and dual leadership while negative relation was also found between some strong earnings management determinant such as independent monitoring, audit committee independence and institutional investor’s property. However, some differences were noticed between French and Canadian firms. However, it was also observed that French earnings management is more related to high ownership concentrations while Canadian firms have more dominant minority ownerships related to earnings management. In this context, our contribution will consist in filling the gap regarding the effect of foreign board membership diversity on earnings management [25].

3. METHODS OF DATA ANALYSIS

The information relating to the features of board membership diversity was used as independent variables and earnings management was used as dependent variable. Descriptive statistics, t-test, missing value analysis, one way ANOVA, nonparametric test, main effect analysis, reliability analysis, correlation matrix and polynomial regression were used to analyze the causal relationship between board membership diversity and earnings management.

The Table 1 shows that the data generated from the sub-Sahara Africa for statistical validation of foreign board membership and earnings management are valid and there is no missing value among the overall data set used to evaluate the influence of the variables. It also shows that the there is no extremes high or extremes low variables from the overall data sets.

Fig. 1 shows the analysis of foreign board membership diversity on earnings management. It observed that slight increase in foreign board membership diversity will slightly increase the earnings management.

Fig. 2 shows the mean plot of the foreign board membership diversity and the earnings management using one way ANOVA. It observed that increase in foreign board membership diversity will increase the mean of earnings management.

The Table 2 shows the descriptive statistics of the variables which reveals the mean, standard deviation and the standard error mean in the variables data.

![Fig. 1. Evaluation of FBMD in ENMGT](image-url)
The Table 3 shows the T statistical test, the degree of freedom in the variables, the significant of each univariate data set, the mean difference and the confidence interval along the mean difference. The variables used for this analysis shows that each of the variables are significant with a significant level of 0.000. This shows that the data sets used for the variables are statistically significant to portray the variables.

Table 1. Missing variables analyses with univariate statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Missing Count</th>
<th>Percent</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENMGT</td>
<td>10</td>
<td>1441.0750</td>
<td>355.99464</td>
<td>0</td>
<td>.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FBMD</td>
<td>10</td>
<td>9.2520</td>
<td>1.27660</td>
<td>0</td>
<td>.0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Fig. 2. Means plots with one way ANOVA

Table 2. T-test statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENMGT</td>
<td>10</td>
<td>1441.0750</td>
<td>355.99464</td>
<td>112.57539</td>
</tr>
<tr>
<td>FBMD</td>
<td>10</td>
<td>9.2520</td>
<td>1.27660</td>
<td>.40370</td>
</tr>
</tbody>
</table>

Table 3. One-sample test

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>ENMGT</td>
<td>12.801</td>
<td>9</td>
<td>.000</td>
<td>1441.07500</td>
<td>1186.4118</td>
</tr>
<tr>
<td>FBMD</td>
<td>22.918</td>
<td>9</td>
<td>.000</td>
<td>9.25200</td>
<td>8.3388</td>
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</tbody>
</table>
Table 4. Pearson correlations

<table>
<thead>
<tr>
<th></th>
<th>ENMGT</th>
<th>FBMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1.000</td>
<td>.600</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 5. Nonparametric correlations

<table>
<thead>
<tr>
<th></th>
<th>ENMGT</th>
<th>FBMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kendall's tau_b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>1.000</td>
<td>.600</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Spearman's rho

<table>
<thead>
<tr>
<th></th>
<th>ENMGT</th>
<th>FBMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation Coefficient</td>
<td>1.000</td>
<td>.782</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Pearson Correlation is a parametric correlation method used for this research and the significant level adopted in this research is ≤ 0.05 significant levels. However, the Pearson correlation applied shows that there is a strong relationship between the foreign board membership and the earnings management with a high significant level of 0.001. This also shows that foreign board membership has strong effect to earnings management.

Spearman’s rho correlations and Kendall’s correlations are nonparametric correlation method. It is used validate the correlations of the Pearson method to ensure efficiency and effectiveness. The Spearman’s correlation shows that there is a good relationship between the foreign board membership and the earnings management with a significant level of 0.016. However, Kendall’s correlation shows that there is a good relationship between the foreign board membership and the earnings management with a significant level of 0.008. These nonparametric correlations also proved that foreign board membership has strong effect to earnings management.

Table 6 shows a reliability statistical test using ANOVA with Cochrans testing method. The reliability test shows that there is a strong significant effect between the people of foreign board membership diversity used for the variables and the people used for earning management with a significant level of 0.002.

The use of Minitab software in Fig. 3 shows the main effect plot of the foreign board membership diversity along the mean of the earning management. It revealed that increase in foreign board membership diversity will increase the earnings management.

Table 6. Test of reliability using ANOVA with Cochrans's test

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>Cochran's Q</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between People</td>
<td>573871.129</td>
<td>9</td>
<td>63763.459</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within People</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Items</td>
<td>10250585.517</td>
<td>1</td>
<td>10250585.517</td>
<td>9.476</td>
<td>.002</td>
</tr>
<tr>
<td>Residual</td>
<td>566733.181</td>
<td>9</td>
<td>62970.353</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10817318.698</td>
<td>10</td>
<td>1081731.870</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11391189.827</td>
<td>19</td>
<td>599536.307</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Fig. 3. Main effects plot for ENMGT versus FBMD

Fig. 4. Overall trend line polynomial regression plot

Fig. 4 shows a nonlinear and a polynomial regression model developed in this research. The data sets shows that the most appropriate regression method that will produce a more preferred correlations of the independent and the dependent variables is the polynomial model to the sixth order that gives a more appropriate coefficient of the relationship (that is the R-Squared) of 0.882. The linear regression model in Fig. 5 shows the variables relationship of 0.761 coefficients between the dependent and the independent variables. The R-Squared of 88.2% is more preferred to achieve more accuracy of the model application. Therefore, the regression model suggested is polynomial regression model for more accuracy and more appropriate results.

Fig. 6 shows the nonparametric hypothesis test of the variables. It shows that the decision rule suggested by the tool is to reject the null hypothesis and accept the alternative hypothesis based on the fact that there is a strong relationship between the dependent and the independent variables with a significant level of 0.005.
Fig. 5. Trend line linear regression plot

Asymptotic significances are displayed. The significance level is .05.

Fig. 6. Nonparametric hypothesis tests

Fig. 7. Trend line polynomial regression Plot in South Africa
Fig. 8. Trend line polynomial regression plot in Nigeria

Fig. 9. Trend line polynomial regression plot in Kenya

4. COMPARATIVE ANALYSIS OF COUNTRIES SPECIFIC REGRESSION RESULT

Fig. 7, Fig. 8 and Fig. 9 show the comparative analysis of Countries specific polynomial regression results. The result provides an insight into the regression models between foreign board membership diversity variables and earnings management which serves as the dependent variable of non-financial firms quoted across these selected Sub Sahara African countries. The study examines the coefficient of determination (that is the R-Square) among the three selected countries in Sub Sahara Africa.

Table 7. Summary of country specific regression analysis

<table>
<thead>
<tr>
<th>Items</th>
<th>Kenya R-Sq</th>
<th>Nigeria R-Sq</th>
<th>South Africa R-Sq</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENMGT vs FBMD</td>
<td>97.5%</td>
<td>86.6%</td>
<td>93.2%</td>
</tr>
</tbody>
</table>

Source: Researchers’ Summary of country specific Regression analysis (2020)
The country specific regression analysis is carried out to examine the effect of foreign board membership diversity on earnings management of each country selected for the study. This will enable us examine the impact each country’s foreign board membership diversity and its system plays on earnings management of firms quoted in their stock exchange.

From the result above, the study observed that coefficient of determination between the independent variable, that is foreign board membership diversity and that of the dependent which is the earnings management in Nigeria is 86.6%, why South Africa is 93.2% and Kenya is 97.5%. The result revealed that all foreign board membership diversity variables on earnings management R-square value is more appropriate in Kenya, followed by South Africa and lastly Nigeria.

5. TEST OF HYPOTHESES AND RESULTS

The study investigated the relationship that exists between foreign board membership diversity and earnings management of quoted companies in Sub-Saharan Africa countries from 2009 to 2018. The study carried out some tests like descriptive statistics, correlations analysis reliability tests and nonparametric tests. The descriptive statistics was used to analyze the data in order to ascertain the normality and nature of the data. Correlation analysis was used to ascertain the association between the variables and to test for the presence of multi-colinearity. To further check for the case of perfect correlation among variables, a nonparametric correlation was conducted to test for the presence of multi-colinearity and adequacy of the parametric result.

Reliability test using ANOVA with Cochran’s testing method was applied to understand the significant importance of the people that form the foreign board membership diversity and those that generate the earnings of the management. The study also uses regression analysis in obtaining functional causal effect relationship between earnings management and foreign board membership diversity in the case study geographical area. The nonparametric hypothesis test shows that the decision rule suggested by the tool is to reject the null hypothesis and accept the alternative hypothesis based on the fact that there is a strong relationship between the dependent and the independent variables with a significant level of 0.005. Finally, the results of all the tools applied shows that there is a strong significant relationship between the foreign board membership diversity on the earnings management in Sub-Sahara African Countries. Therefore, the study suggests that the null hypothesis will be rejected and the alternative hypothesis will be accepted which states that foreign board membership diversity has significant effect on earnings management among non-financial firms in Sub-Sahara African countries.

6. DISCUSSION OF FINDINGS

Based on a sample of 470 quoted non-financial firms selected from three Sub-Sahara African Countries (Nigeria, Kenya and South Africa) for ten fiscal year from 2009-2018 and using seven measures of foreign board membership diversity as reported on overall regression result. Specifically, the study found that:

- The missing value analysis shows that the data set for the variables has valid data set to model and to analyze the variables.
- Foreign board membership diversity was positively and significantly related to earnings management having reported a positive coefficient of determination value of 88.2% and a statistic Pearson correlation of 0.001.
- Pearson correlation shows that foreign board membership diversity has a significant relationship to earnings management with a strong significant value of 0.001.
- Spearman’s rho nonparametric correlation shows that foreign board membership diversity has a significant relationship to earnings management with a significant value of 0.008.
- Kendall’s nonparametric correlation shows that foreign board membership diversity has a significant relationship to earnings management with a significant value of 0.016.
- The reliability test using ANOVA with Cochran’s testing methods shows that the foreign board membership diversity and that of earnings management are significant with each other.
- Nonparametric hypothesis test shows that there is a strong relationship between the dependent and the independent variables with a significant level of 0.005.
7. CONCLUSION

The study examines the relationships and evaluates the effects between foreign board membership diversity and earnings management. In this study, the following results were ascertained:

- The descriptive statistics was used to analyze the data in order to ascertain the normality and nature of the data.
- Correlations analysis for both parametric and nonparametric was used to ascertain that there is a strong effect of foreign board membership diversity on earnings management.
- Reliability test using ANOVA with Cochran’s testing method was applied to understand the significant importance of the people that form the foreign board membership diversity and those that generate the earnings of the management.
- The application of regression models show that polynomial models to the sixth order are the most appropriate models to model the overall effect, the country’s individual effects and the relationships of foreign board membership diversity on earnings management.
- In the decision rule of nonparametric hypothesis test tool, it shows that the null hypothesis will be rejected while the alternative hypothesis will be accepted based on the fact that there is a strong relationship between the dependent and the independent variables with a significant level of 0.005.

However, the results of all the tools applied shows that there is a strong significant relationship between the foreign board membership diversity on the earnings management in Sub-Sahara African Countries. Therefore, the study suggests that the null hypothesis will be rejected and the alternative hypothesis will be accepted which states that foreign board membership diversity has significant effect on earnings management among non-financial firms in Sub-Sahara African countries.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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