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Effect of Board Diversity on Earnings quality of Non-Financial Firms Listed at the Nairobi Securities Exchange

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Abstract

The study's main objective was to examine the relationship between board diversity and earnings quality of non-financial firms listed on the Nairobi Securities Exchange (NSE) and how ownership concentration acted as a moderator. As of December 31, 2020, the NSE had 39 non-financial firms listed. The secondary data was collected over a 13-year period (2008-2020). The study used a quantitative research design and positivist research philosophy. The data were analyzed using panel regression. It was put through diagnostic and specification tests. The study found that board diversity had a significant impact on non-financial firms' earnings quality, both with and without ownership concentration as a moderator. The moderator model outperformed the one without (ownership concentration). The study concludes that board diversity has a significant impact on non-financial firms traded on the NSE. The findings suggest that non-financial companies listed on the NSE should carefully examine the criteria used to define board diversity and its characteristics. Thus, boards will be more accountable to shareholders, reducing earnings manipulation.

Keywords: Board diversity, Earnings quality, Non-financial firms.

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1. Introduction

Wealth maximization is at the center corporate finance discussion, as persuasively articulated by Nyberg, et al. (2010), requiring a judicious alignment of firm's cash flows and it's cost of capital. Accruals are earnings for which cash has not been received which is classified into normal accrual and abnormal accrual, higher abnormal accruals lead to lower earnings quality. The Deschow and Dichev (2002), McNichols (2002) and Francis et al. (2005) school of thought on accruals quality has largely been the consensus in the accrual's quality literature. Jones in 1991 used a common approach measure that apportion accruals into the normal and abnormal categories based on the forecast model of total accruals. The accrual estimation and other judgment errors are an inevitable characteristic of financial reporting. They arise out of the difficulties of predicting the uncertain future and the overt limitations of the financial information estimation tools (Doyle et al. 2007).

At the center of corporate governance is the board of directors, which administers, supervises, and provides strategic instructions to the company's management (Brennan, et al. 2008). The culture of a company's board has a substantial impact on its performance (Jensen, 1993). The board of directors plays a significant role in corporate governance. The structure and composition of the board have an impact on the performance and quality of reported results. Board diversity has an ambiguous meaning (Harrison and Klein, 2007) resulting in several empirical studies each focusing on different aspects of board diversity (gender, age, and nationality), leaving the topic nonconclusive, resulting in a knowledge gap. The goal of this study was to detect the impact board diversity has on the earnings quality.

1.1 Statement of the Problem and Study Objective

Financial statements should accurately reveal all information required by users in making informed decisions on the worth of a company, its shares valuation and the accurate future cash flows, and therefore not lead to investors into making regrettable decisions, as has happened around the world where accounting fraud has been used. The Board of Directors safeguards the interest of shareholders, overseeing how corporations are managed bearing in mind the managers have differing interests from that of the owners. Companies have been wound up all over the world in the last three decades, leaving investors with a loss of their investment due to the introduction of unethical accounting policies that favor the management. This could also happen due to lacking in oversight and control by the board of directors, aggravated by board not being properly constituted. Various studies have been inconclusive on the relationship between board diversity and earnings quality, particularly in the presence of ownership concentration as a moderator for firms listed on the NSE, resulting in a knowledge gap that this study set to contribute to.

1.2 Study Objectives

The objective of this research was to look at the relationship between board diversity and earnings quality of non-financial enterprises listed on the NSE, as well as the moderating influence of ownership concentration on the relationship between board diversity and earnings quality.

1.3 Research Hypotheses

$H0_1$ Board diversity has no significant effect on earnings quality of non-financial firms listed at the NSE

$H0_2$ Ownership concentration has no moderating effect on the relationship between diversity and earnings quality of non-financial firms listed at the NSE.

2. Literature Review

The study was informed by the following theories: Agency theory (Jensen and Meckling, 1976). In this study, the theory has been linked to explain the role of the agents in wealth maximization, which call for earnings quality. Resource Dependence Theory; where non-executive board members provide the firm with the required expertise/advice and any other information that legitimize decisions. The theory is used to investigate how ownership structures create governance structures that allow directors to contribute relevant expertise that can be used to justify company actions, as well as the moderating effect of ownership structure on the relationship between Board diversity and earnings quality. The stakeholder interests should be considered in board decisions (Manville and Ober, 2003; White, 1980). The study used this theory to address interests of stakeholders in board diversity while measuring its effects on firms' earnings quality.

Positive Accounting Theory (PAT) aims to explain and predict the accounting rules that companies pick and why they do so (Watts and Zimmerman, 1978). The policies are based on three hypotheses: the bonus plan hypothesis, the Debt covenant theory, in which directors choose policies that boost current earnings, and the political cost hypothesis. Because of its originality, which is helped by the aforesaid policies, PAT is used to assess earnings quality. The Signaling Theory (Morris, 1987), help decision makers to place a value depending on the signal being received, the mode paying for shares being acquired acts as a signalling device about the acquiring firm's stock value with cash offers being interpreted as good news while equity offers are interpreted as bad news. Signalling theory is used to analyze earnings quality (Khan, 2009). High dividends signal current performance, future cash flow expectations, and the expected value of the firm. Lastly Ethical Theory was considered in the study mainly to highlight the importance of ethics in the preparation of financial reports meeting the interest of interested parties cannot be underrated. Therefore, high ethical standards should be observed (Oliveras and Amat, 2003). Earnings quality (accrual quality and discretionary accrual) is therefore important element in financial reporting.

2.1 Conceptual Framework

A concept is a set of principles and ideas from a relevant field of study acting as a research tool to aid the researcher to develop and understanding the situation under study (Kombo and Tromp, 2006). According to Ravitch and Riggan (2016), a conceptual framework is the graphical representation of the relationship between the variables. The study's conceptual framework is arrived at after reviewing various variables used in several studies reviewed in the literature.

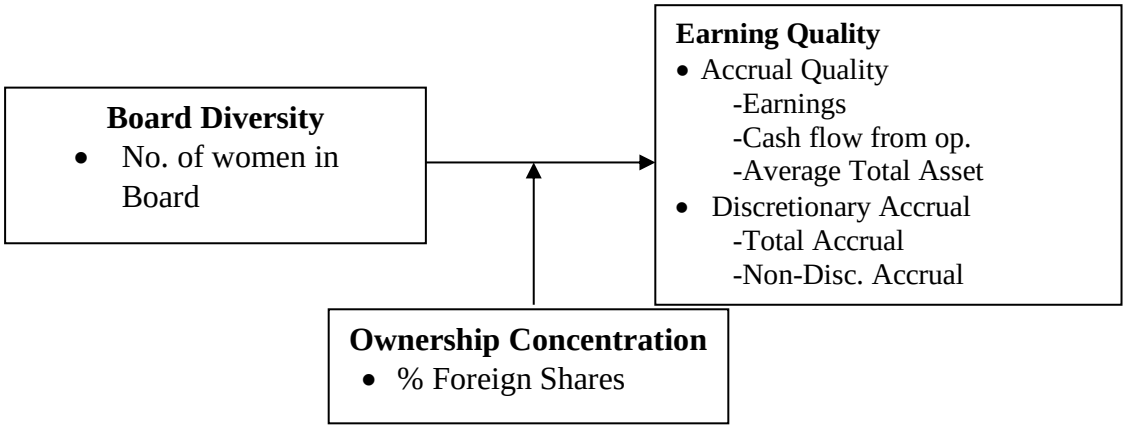

Figure 1: Conceptual Framework

2.2 Board diversity

There still exists an underestimation of ladies' abilities and prejudices about the capability of women to perform management positions (Mateos del Cabo, et al. 2012). To courter this reasoning and increase the ratio of ladies on boards, national and international corporate governance guidelines and legislation on female quotas is being enacted. From a theoretical point of view, there are convincing arguments to support gender diversity on company boards, but it is also necessary to find empirical evidence to strengthen this vindication and its derived policies.

In their study, Gender diversity, corporate governance, and firms' behavior Báez, Báez-Garca, et al. (2018) noted that there was still a significant disparity in presence, salary, and seniority in gender. Lakhal et al. (2015) in their study on impact gender diversity earnings management showed that an increase of female directors on boards resulted in decrease of earnings management. Liu and Xie (2016) examined the relationship between female/male chief finance officer and earnings management finding that male CFOs were more involved in earnings management than female CFOs indicating that female CFOs were more risk averse compared to male colleagues in financial reporting and operational decisions. Peni and Vähämaa (2010) in their investigation of the relationship between gender, company executives, and earnings management using a population of 500 Finnish businesses and employing panel regression in the evaluation of the discretionary accruals data concluded that women's strategies for managing earnings were more conservative

thereby impacting on financial reporting.

Srinidhi and Tsui (2011) investigated the relationship between female representation on corporate boards and the earnings quality of listed businesses in the United States. Found that having female directors on audit and corporate governance committees lead to more transparent reporting. They also concluded that there was a link between the participation of women on corporate boards and the higher quality of earnings reported.

Mnif and Cherif (2020) in their study's result showed that there was reduction in earnings management in the presence of women director in the board. Ghazaleh and Garkaz (2015) investigated the impact of having women on the boards of companies listed on the Tehran Stock Exchange on earnings management using the discretionary accruals index. The outcomes of the study found that having female directors on the board is highly linked to lower earnings management, meaning that firms employed discretionary accruals for earnings management less frequently. Ye et al, (2010) in their study on occupiers of top seat in management and impact it has on earnings did not show significant differences for firms with female and male top executives. The impact of board composition on earnings management in Nigerian firms investigated by (Obigbemi et al. 2016 whose result indicated a negative significant relationship between board genders and earnings management, as measured by the volume of discretionary accruals adopting modified Jones Model.

Sun et al. (2021) investigated whether the presence of female directors on independent audit committees affected the ability of the committees to control Earnings Management. Using 525 firm-year observations from 2003 to 2005, the study found no significant association between the numbers of female directors on audit committees and the level of earnings management. O'Reilly and Main (2012) evaluated the impact of female outside directors on firm performance and CEO salary. Based on a sample of over 2000 businesses from 2001 to 2005, the findings showed no evidence that adding women outsiders to the board of directors boosts corporate success. Hili and Affess (2012) empirically examined the impact of gender diversity on earnings quality and earnings management using a sample of 70 French firms. They found that gender diversity had no significant impact on earnings management, whether positive or negative, and that the enhancement of earnings persistence could not be attributed to gender diversity.

Directors' views on improved corporate governance with functional diversity on financial Times Stock Exchange (FTSE) 350 boards: Goyal and Kakabadse (2019) recommends that functional experience be part of discussion on board diversity is an important component of board diversity overlooked in debates on gender and ethnic diversity. Functional diversity on boards leads to increased intellectual capital aiding boards in managing external dependencies; and boosts boarding ability to challenge assumptions.

A functionally diverse boards may have increased their position as shareholders' agents in aligning the executive's interests with the shareholders' interests. Valls, et al. (2019) in their study on gender policies on board of directors found that

the presence of female in boards and position of influence was positively associated with voluntary disclosure while comparing the financial reports. Board diversity when it interacted with audit committee was found to exert a negative impact on performance as assessed by return on assets, according to the conclusions of a study done by Nyatichi (2016) on Nairobi Stock Exchange enterprises (ROA). the empirical studies so far remain inconclusive on the effect of board diversity on earnings quality calling for more empirical studies in this important area of financial reporting.

2.3 Ownership Concentration and Earnings Quality

Rouf and Al-Harun (2011) looked into the relationship between ownership structure and voluntary disclosure levels and discovered a significant negative relationship between managerial ownership and voluntary disclosure levels, but a significant positive relationship between institutional ownership and voluntary disclosure. Ali and Muhammad (2018) in their evaluation of the impact of ownership structure on disclosure both Malaysian and Nigerian capital markets that companies whose higher proportion of equity shares was in the hands of directors disclosed less information while those companies whose majority shares are held by the state disclosed significantly more information.

Ongore and K'Obonyo (2011) conducted a study in Kenya on the interrelationships between ownership, board, and manager characteristics and business success; the research demonstrated that there was a significant positive relationship between foreign, insider, institutional, and other ownership forms and performance. Further the research showed a strong negative relationship between government ownership and corporate performance. The moderating influence of ownership concentration when introduced to the relationship of board diversity on earnings quality of non-financial firms listed on the NSE, which was the subject of the current study, was not examined in these studies.

2.4 Critique of Reviewed Literature

The influence of board diversity on earnings quality is still not clear, from the literature reviewed, with some studies demonstrating a negative relationship while others showed positive relationship, leaving that the subject open for further research. The impact of board diversity on earning quality using the two metrics (accrual quality and discretionary accrual) has not been investigated in the empirical literature reviewed necessitating this study. The empirical literature reviewed did not investigate the moderating effect of ownership concentration on the link between board diversity and earnings quality of firms listed on the NSE, which the current study investigated.

2.5 Research Gaps

In the empirical research evaluated, the topic of board diversity and its impact on the earning quality of non-financial firms listed on the NSE was not adequately

addressed. The empirical studies on the influence of ownership concentration as a moderating variable between board diversity and earnings quality were carried elsewhere and not related firms listed Nairobi Securities Exchange , this knowledge gap was filled by look into at the moderating effect of ownership concentration on the effect of board diversity on earnings quality.

3. Methodology

To achieve the objective of the study positivism research philosophy was adopted being the best suited philosophy for the type nature of the study. The Philosophy emphasizes quantifiable observations which were used in the panel regression models adopted by the study. The research design employed in this study was quantitative survey research design that emphasizes objective measurements and the statistical, mathematical, or numerical analysis of data collected. The choice of this research design was because of the need to correlate the present situation regarding Board diversity and earnings quality to establish a relationship between the two variables.

The study's target population was a total of 39 non-financial enterprises listed on the NSE; financial institutions did not form part of this study as they were considered to be in different category. The 39 firms are categorized as Agriculture, Commercial and services, telecommunication and technology, vehicles and accessories, investment, Manufacturing and related, Construction and associated, Energy and petroleum industries (NSE, 2020). This study purposively selected 33 non-financial enterprises listed on the NSE between 2008 and 2020, whose data were complete the other six had incomplete data. The analysis focused on the 33 companies that had not been delisted or deregistered. Secondary data was used throughout a 13-year period, from 2008 to 2020, based on information provided in the handbook. As indicated in equations 1 and 2 below, the suggested model was employed to conduct data analysis, which was done using e-views and Stata.

3.1 Model Specifications

In this study, panel regression analysis was performed. A panel regression model was utilized since panel data was collected and 33 sampling units (non-financial enterprises) were used throughout a thirteen-year period. The moderating effect of ownership concentration was also taken into account. The model was as follows:

$$Y_{it} = \beta_0 + \beta_1 x_{1it} + \varepsilon_{it} \quad (1)$$

Equation 1 can be written as follows in the presence of a moderator (ownership concentration):

$$Y_{it} = \beta_0 + \beta_1 x_{1it} + \theta_1 x_{1it} * z + \varepsilon_{it} \quad (2)$$

where: Y_{it} is the Earnings Quality, x_1 is Board diversity, β_0 = Is the time-invariant intercept β_1 is the coefficient of the regressor variable (board size), θ_1 is the

coefficients of the moderator variable(ownership concentration), Z is the moderator(ownership concentration), ε_{it} is an error term $i = 1,2,3,...,33$ firms listed in NSE and t is the time in years from the year 2008 to 2020.

The independent variable was board diversity, which was measured in terms of the proportion of female directors on the board. The dependent variable earnings quality was evaluated using the modified Jones model in terms of accrual quality and discretionary accruals (1991). The metric ratio for the absolute value of aberrant accruals derived using the modified Jones (1991) approach, where the cross-sectional regression of each of the 33 firms listed on the NSE is first calculated in year t, was used as a proxy for accrual quality in this example.

$$\frac{TA_{j,t}}{Assets_{j,t-1}} = \phi_1\left(\frac{1}{Asset_{j,t}}\right) + \phi_2\left(\frac{\Delta REV_{j,t}}{Assets_t}\right) + \phi_3\left(\frac{PPE_t}{Assets_t}\right) + \varepsilon_t \quad (3)$$

From the above equation, the parameter estimates obtained are then used to estimate firm-specific normal accruals (NA) as a percentage of lagged total assets expressed as follows:

$$NA_{j,t} = \hat{\phi}_1\left(\frac{1}{Asset_{j,t-1}}\right) + \hat{\phi}_2\left(\frac{\Delta REV_{j,t} - \Delta REC_{j,t}}{Assets_{j,t-1}}\right) + \hat{\phi}_3\left(\frac{PPE_{j,t}}{Assets_{t-1}}\right) + \varepsilon_{j,t} \quad (4)$$

where $\Delta REC_{j,t}$ = firm j's net receivable change in year t minus net receivable change in year t-1 We use the expression to compute abnormal accruals (AA) in year t1.

$$AA_{j,t} = \frac{TA_{j,t}}{Assets_{j,t-1}} - NA_{j,t} \quad (5)$$

From the above equation, the absolute value of the resulting measure of abnormal accruals becomes an additional proxy for accruals quality considered in this study that is, $AQ = |AA_{j,t}|$ with low values of $|AA_{j,t}|$ suggesting better accruals quality while large values $|AA_{j,t}|$ suggesting poor accrual quality.

The discretionary accruals (DA) were computed based on equation 3.6 given below

$$DA = TA_{j,t} - NDA_{j,t} \quad (6)$$

With Non-discretionary accrual (NDA_{jt}) being computed as illustrated in equation 7 presented below

$$NDA_{jt} = \phi_1\left(\frac{1}{Asset_{j,t}}\right) + \phi_2\left(\frac{\Delta REV_{j,t} - \Delta REC_{j,t}}{Assets_{j,t}}\right) + \phi_3\left(\frac{\Delta PPE_{j,t}}{Assets_{j,t}}\right) + \varepsilon_{j,t} \quad (7)$$

Where: DA_{jt} is firms j discretionary component of accruals at a time t, TA_{jt} is firms j total accruals at time t, NDA_{jt} is firms j non-discretionary accruals at a time, ΔREV_t = is revenues in year t less revenue in year t-1, ΔREC_t = is net receivables in year t less net receivable in year t-1, ΔPPE_t = is gross property plant and equipment in year t less gross property plant and equipment in year t-1.

Finally, equation 8 also illustrate how firms j total accruals at time t (TA_{jt}) were computed

$$TA_{jt} = \left(\Delta CA_{jt} - \Delta Cash_{jt}\right) - \left(\Delta CL_{jt} - \Delta STD_{jt} - \Delta TP_{jt}\right) - DEP_{jt} \quad (8)$$

Where:- $Assets_{T-1}$ = is total assets at the end of year t-1, ϕ_1, ϕ_2 and ϕ_3 are firm-specific parameters, ΔCA = is Current Assets in year t less current assets in year *t-1*, $\Delta Cash$ = is the cash / Cash equivalents in year t less cash / Cash equivalents in year t-1, ΔCL = is the Current Liabilities in year t less current liabilities in year *t-1*, ΔSTD = is Short-term Debts in year t less short-term debts in year *t-1*, ΔTP = is Income Taxes Payables in year t few Income Taxes Payables in year*t-1*, DEP = Depreciation and Amortization expense.

3.2 Diagnostic Tests /Model specification test

To see if the data was suitable for panel regression analysis, we ran a series of diagnostic statistical procedures. Stationarity test employing unit root test, panel cointegration test, heteroscedasticity test, outlier test, and autocorrelation were the diagnostic tests used in the study. Furthermore, Hausman specification tests of the model were carried out.

4. Research Findings and Discussion

4.1 Descriptive Statistics for Board Diversity

The final goal of the study was to determine how board diversity affects the quality of earnings for companies listed on the NSE. Gender equality, which takes into consideration the board's gender balance, was shown to be the most important factor in determining board diversity in this study. It was established that many organizations faced gender imbalance because the greatest mean for Board diversity was 12.03 percent for women, implying that their male counterparts had an overall representation of 87.97 percent. At 6.90 percent, women's representation on the board was at its lowest level in 13 years, suggesting that men made up 93.10 percent of the whole board. According to the data, there is a considerable gender gap in board member representation for firms listed on the NSE, with 13 percent of board members being male. Furthermore, the mean percentage has remained relatively

constant over time, showing that board diversity has developed at a slow pace, falling short of expectations in terms of gender considerations among Nairobi Securities Exchange-listed companies (NSE). In terms of board diversity, many prior studies, such as those undertaken by (Brammer et al. 2007; Francoeur et al. 2008; Luckerath-Rovers 2013), have indicated that women make up a very small fraction of the population. The greatest % median value for firms throughout time was 11.11, with a matching positive median growth of 1.1111, and the lowest percentage median value was 8.3333, with a corresponding positive median growth of 1.3015, according to the study's findings. The majority of the corporations had sustained development in board diversity. Based on the results of mean and median growth over time, it was determined that there was a lack of gender balance for enterprises listed on the NSE.

Table 1: Mean, Median for board diversity across the years

Year	Mean	Median	Increase/Decline in mean	Increase/Decline in median
2008	6.9003	0.00000	-	-
2009	8.2018	8.33333	1.3015	8.3333
2010	8.3168	9.09091	0.1149	0.7576
2011	8.6405	9.09091	0.3237	0.0000
2012	8.8299	9.09091	0.1894	0.0000
2013	9.7697	9.09091	0.9399	0.0000
2014	10.0944	9.09091	0.3247	0.0000
2015	12.0323	10.00000	1.9379	0.9091
2016	10.8672	10.00000	-1.1651	0.0000
2017	11.1551	10.00000	0.2879	0.0000
2018	12.5080	11.11111	1.3529	1.1111
2019	11.5711	11.00000	-0.9369	-0.1111
2020	11.6317	11.11111	0.0606	0.1111

The highest percentage of mean growth of Board diversity was recorded by Eveready East Africa Ltd at 38.55 percent, followed by Total Kenya Ltd at 27.00 percent, and others such as Safaricom Ltd, KenGen Co. Ltd, Bamburi Cement Ltd, and Standard Group Plc at 22.00 percent, 21.27 percent, 17.27 percent, and 16.18 percent, respectively. Moreover, Kakuzi Plc, Kapchorua Tea Co. Ltd, Limuru Tea Co. Ltd, Williamson Tea Kenya Lt, Car and General (K) Ltd, and ARM Cement Plc, among others, reported a board diversity of 0.0 percent, suggesting that all board members in such firms were male.

Eveready East Africa Ltd had the highest average growth rate of 56 percent, followed by Sameer Africa Ltd and Sasini Ltd with 50 percent and 33 percent growth rates, respectively. Kakuzi Plc, Kapchorua Tea Co. Ltd, Limuru Tea Co. Ltd, Williamson Tea Kenya Lt, Car and General, and other companies had a board diversity of 0.0 percent. Eveready had the highest median value, which was 38

percent. Finally, the total mean rise in board diversity for all firms was 9.69 percent, implying that 90.31 percent of board members for all firms listed on the NSE are men. It was also discovered that only one company (Eveready) did rather well in terms of gender balance. There was no difference in board diversity between the median components of each firm. The results suggest gender imbalance among firms listed in NSE. Table 3 in appendixes I gives the details of the output.

Telecommunication and technology firms had the highest mean growth of 22.0 percent, followed by Energy and Petroleum with a mean growth of 14.21 percent of Board diversity, Commercial Service Industry with a growth of 13.3 percent of Board diversity, Construction allied industry sector with an increase of 8.04 percent of Board diversity, and Manufacturing firms with a growth of 6.67 percent of Board diversity. According to the findings, companies with a high mean score for board diversity are more likely to have greater earning quality than companies with a lower mean score for board diversity. The details of the discovery are shown in Figure 2.

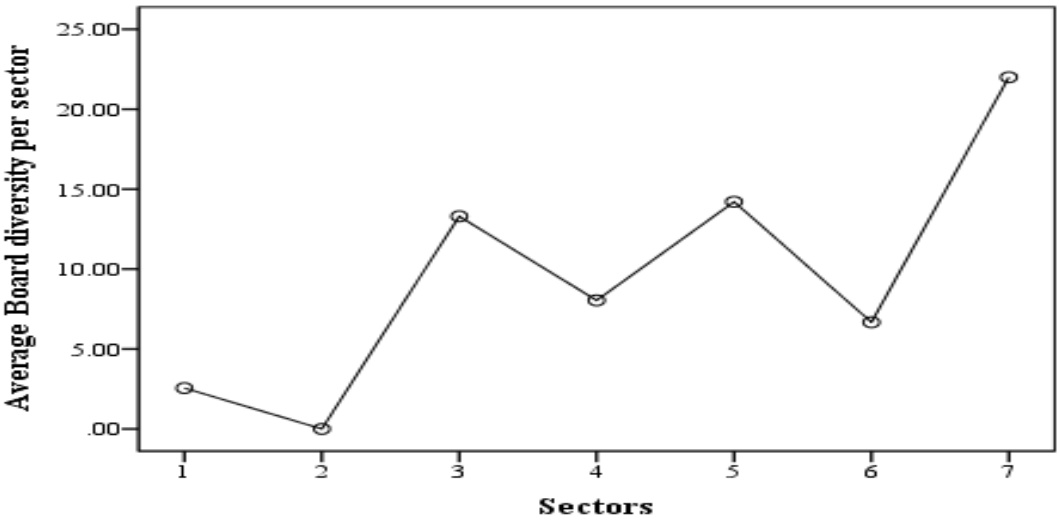

Figure 2: Average Board diversity per Sector

4.2 Regression Analysis for Board diversity and earnings quality of non-financial firms listed at the NSE

The study's objective was to see if there was a link between board diversity and the level of earnings quality of non-financial companies listed on the Nairobi Securities Exchange. The null hypothesis in this section was that there was no significant relationship between Board diversity and earnings quality of non-financial firms listed on the Nairobi Securities Exchange, as opposed to the alternative hypothesis that there was a positive significant relationship between Board diversity and earnings quality measured in terms of accrual quality and discretionary accrual of

non-financial firms listed on the Nairobi Securities Exchange. The findings reveal that there is a substantial association between Board diversity and the earnings quality of non-financial enterprises listed on the Nairobi Securities Exchange, according to a panel regression study.

The relationship between earnings quality evaluated in terms of accrual quality and discretionary accrual of non-financial enterprises listed on the NSE, as well as Board diversity, was examined using three types of panel regression models (Pooled OLS, Randomized, and fixed models). Based on the R-square results, the following values were recorded: 0.400, 0.186, and 0.666, suggesting that in the absence of a moderator, Board diversity explained 40.0 percent, 18.6%, and 36.6 percent of accrual quality, respectively. Furthermore, R-square values of 0.366, 0.313, and 0.639 were found in the absence of a moderator (ownership concentration), indicating that Board diversity explained 36.6 percent, 31.3 percent, and 63.9 percent of the total variation in quality accrual of non-financial firms listed on the NSE, respectively.

The R-square values for discretionary accrual of earnings quality and Board diversity for non-financial firms listed on the NSE were 0.441, 0.2604, and 0.821, respectively, demonstrating that there was a link between discretionary accrual of earnings quality and Board diversity. For non-financial businesses listed on the NSE, board diversity without ownership concentration was found to predict 44.1 percent, 26.04 percent, and 82.1 percent variation in discretionary accrual of profits quality (moderator). R-square values of 0.4432, 0.2601, and 0.846 are likewise obtained when the moderator is included in the model. The findings suggest that the models improved dramatically once again in the presence of moderators. In this scenario, board diversity in the presence of a moderator explained 44.32 percent, 26.01 percent, and 84.6 percent of non-financial firms listed on the NSE's discretionary accrual of profits quality.

F-statistics values for accrual quality were 240.89, 93.349, and 19.925 when a moderator was not present, and 103.75, 40.980, and 19.1079 when a moderator was present. The statistics obtained for discretionary accrual when a moderator is not included in the model are 258.56,115.51, and 57.483, respectively. The statistics obtained when a moderator is added in the model for discretionary accrual are 130.166, 23.381, and 47.589, respectively. All of the models had P-values of 0.0000.05, demonstrating that there was a significant association between Board diversity and accrual quality and discretionary accrual of profits quality of non-financial enterprises listed on the Nairobi Securities Exchange.

The coefficients of estimates for the three models are shown in Table 2, and t-test statistics were used to examine the effect of the explanatory variable (Board diversity) on accrual quality and discretionary accrual of total earnings quality of non-financial enterprises listed on the NSE in each case. Each of these models was tested in two scenarios: with the moderator present and without the moderator present. Board diversity had a substantial impact on the earnings quality of non-financial firms listed on the Nairobi Securities Exchange, with P-values less than 0.05 for both models without and with a moderator.

The following was the regression model for the dependent variable (accrual quality, discretionary accrual of earnings quality of non-financial enterprises listed on the NSE) and Board diversity: QA= 3.8134 + 0.04883 QA= 3.8134 + 0.04883 QA= 3.8134 + When the moderator was not included in the pooled regression model, QA = 3.8752 + 0.042474*B.DIV for randomized model and QA= 3.9137 + 0.03851*B.DIV for fixed model. As a result, the following models were created in the presence of moderators: 4.8654 + 0.04186 = QA For the pooled egression model, *B.DIV+ 0.00615B.DIV*Z For the randomized model, QA2 = 4.910 + 0.03536* B.DIV + 0.00686B.DIV*Z, and for the final model, QA2 = 4.9312 + 0.03223 For a fixed model, B.DIV + 0.0098 B.DIV *Z is used. The models indicate that the value of accrual quality changes by the coefficient values given on the models both in the presence of a moderator and in the absence of a moderator for every unit of Board diversity for non-financial firms listed on the Nairobi Securities Exchange (Ownership Concentration). These findings revealed that board diversity has a significant impact on accrual quality for non-financial firms listed on the Nairobi Securities Exchange.

DA = 1.0089 + 0.0332 B.DIV, for pooled OLS, DA = 1.0861 + 0.0254 B.DIV for randomized model, and DA = 1.1024 + 0.0238B.DIV*Z for fixed model when moderator is omitted. Inclusion of a moderator, on the other hand, resulted in the following regression equations: For pooled OLS, DA = 1.0118 + 0.03464 B.DIV +0.00546 B.DIV *Z, for randomised model, DA = 1.083 + 0.02497 B.DIV +0.002485 B.DIV *Z, and for fixed model, DA = 1.09402 + 0.022993 B.DIV + 0.00508 B.DIV *Z, as shown in table 3. Since the t- statistical values were all significant with p-values less than 0.05, the tables with the corresponding model plainly illustrate that there was some substantial influence of Board diversity on quality and discretionary accrual of financial institutions listed on the NSE.

Table 2: Panel regression analysis for Board diversity and quality accruals of non-financial firms listed at the NSE

Dependent Variable: Earnings quality of non-financial firms listed at the Nairobi Stock Exchange (NSE), Quality Accrual,									
Method: Panel Least Squares									
Sample: 2008 2020, Periods included: 13Cross-sections included: 33Total panel (balanced) observations: 429									
Type of Model	**Variable**	**B**	**SE**	**T**	**P**	**R^2**	**Adj R^2**	**F**	**P-value**
Pooled OLS	C	3.8134	0.044	84.972	0.0000	0.400	0.399	240.89	0.000
	B.DIV	0.0488	0.003	15.521	0.0000				
	S.E. of regression			0.6255	Akaike info criterion				1.9053
	Sum squared resid			141.28	Schwarz criterion				1.9267
Pooled OLS with moderator	C	4.8654	0.041	116.41	0.0000	0.366	0.363	103.75	0.000
	B.DIV	0.0418	0.003	12.316	0.0000				
	B.DIV*Z	0.0061	0.0065	0.0939	0.9252				
	S.E. of regression			0.5794	Akaike info criterion				1.7548
	Sum squared resid			120.54	Schwarz criterion				1.7870
Random Effects Model	C	3.875	0.085	45.380	0.0000	0.186	0.181	93.349	0.000
	B.DIV	0.0425	0.004	9.673	0.0000				
	S.E. of regression				0.4892	Sum squared resid			86.415
Random Effects with Moderator	C	4.9100	0.082	59.327	0.0000	0.312	0.309	40.980	0.000
	B.DIV	0.0353	0.004	7.7509	0.0000				
	B.DIV*Z	0.0068	0.009	0.6918	0.4895				
	S.E. of regression			0.4409	Sum squared resid				69.794
Fixed effect Model	C	3.9137	0.057	68.533	0.0000	0.666	0.633	19.925	0.000
	B.DIV	0.0385	0.005	7.3403	0.0000				
	S.E. of regression			0.4886	Akaike info criterion				1.4946
	Sum squared resid			78.558	Schwarz criterion				1.8594
Fixed effect Model with moderator	C	4.9312	0.054	89.887	0.0000	0.639	0.637	19.107	0.000
	B.DIV	0.0322	0.005	6.1382	0.0000				
	B.DIV*Z	0.0097	0.012	0.7898	0.4302				
	S.E. of regression			0.4413	Akaike info criterion				1.2935
	Sum squared resid			63.683	Schwarz criterion				1.6698

Table 3: Panel regression analysis for Board diversity and discretional accruals of non-financial firms listed at the NSE with no moderator

Dependent Variable: Earnings quality of non-financial firms listed at the Nairobi Stock Exchange (NSE), Quality Accrual,									
Method: Panel Least Squares									
Sample: 2008 2020, Periods included: 13Cross-sections included: 33Total panel (balanced) observations: 429									
Type of Model	**Variable**	**B**	**SE**	**T**	**P**	**R^2**	**Adj R^2**	**F**	**P-value**
Pooled OLS	C	1.0089	0.030	33.60	0.0000	0.441	0.439	258.56	0.000
	B.DIV	0.0331	0.002	16.80	0.0000				
	S.E. of regression			0.3961	Akaike info criterion				0.9916
	Sum squared resid			51.454	Schwarz criterion				1.0146
Pooled OLS with moderator	C	1.0118	0.030	33.613	0.0000	0.443	0.440	130.16	0.000
	B.DIV	0.0346	0.002	14.38	0.0000				
	B.DIV*Z	0.0054	0.004	1.1957	0.2326				
	S.E. of regression			0.3958	Akaike info criterion				0.9933
	Sum squared resid			51.230	Schwarz criterion				1.0278
Random Effects Model	C	1.0860	0.064	16.918	0.0000	0.260	0.258	115.51	0.000
	B.DIV	0.0254	0.002	10.779	0.0000				
	S.E. of regression				0.219	Sum squared resid			15.829
Random Effects with Moderator	C	1.0826	0.065	16.441	0.0000	0.260	0.255	57.483	0.000
	B.DIV	0.0250	0.003	9.0213	0.0000				
	B.DIV*Z	0.0024	0.008	0.3122	0.7550				
	S.E. of regression			0.2197	Sum squared resid				15.794
Fixed effect Model	C	1.1024	0.028	39.105	0.0000	0.821	0.829	23.381	0.000
	B.DIV	0.0238	0.002	9.3555	0.0000				
	S.E. of regression			0.2190	Akaike info criterion				0.1018
	Sum squared resid			14.201	Schwarz criterion				0.2896
Fixed effect Model with moderator	C	1.0940	0.033	33.283	0.0000	0.846	0.828	47.589	0.000
	B.DIV	0.0229	0.003	7.5814	0.0000				
	B.DIV*Z	0.0508	0.102	0.4977	0.6190				
	S.E. of regression			0.2193	Akaike info criterion				-0.0966
	Sum squared resid			14.189	Schwarz criterion				0.3063

4.3 Hausman test for Board diversity

After collecting nearly six models, all of which were noteworthy, the only remaining task was to choose the most appropriate model. Pooled OLS models were obviously not investigated because the data contained panel data. With this in mind, the researchers conducted more tests to evaluate which model was the best among fixed and random models. The Hausman test, which was previously addressed in the section on board size and audit independence, was used to conduct the test. The null hypothesis was that the random effect model suited the data the best, whereas the alternative hypothesis was that the fixed-effect model fit the data better. The

null hypothesis is rejected when the measured p-value is less than the usual level significance value of 0.05. The null hypothesis is accepted in all other cases. The Hausman test results show that the fixed effects model with no moderator (ownership concentration) was the most appropriate model compared to the Random effects model since the null hypothesis for accrual quality of non-financial enterprises listed on the NSE was rejected. This result had a p-value of 0.01525. The fixed effect model was considered to be the best appropriate model with a moderator present in the absence of a moderator, as demonstrated by a p-value of 0.00386.

In the instance of Discretional accrual, both fixed models in the lack of a moderator and fixed models in the presence of a moderator were found to be the most appropriate models. In this case, the p-values were 0.00269 and 0.00724 respectively. The details of these observations are once again shown in Table 4. With R2FW>R2FM (0.666>0.639), the R2-values fixed effect model with no moderator (FW) was shown to be the most optimal for earnings quality as measured by accrual quality. The fixed model with moderator (FM) was the most efficient model based on discretionary accrual of non-financial institutions listed on the NSE, with R-square values of R2FM>R2FW (0.846>0.821). For the time being, the conclusion was that board diversity influenced the earning quality of NSE-listed companies.

The study findings of of Carter et al.(2003) demonstrated that board diversity improves firm performance. Fraga and Silva (2012) showed that greater educational discipline diversity with or without independent members negatively affect performance, while years of schooling diversity positively affected performance. Furthermore, et al. (2021) findings demonstrated that board diversity has a significant and favourable influence on the financial performance of FTSE 100 businesses in the UK, particularly when three or more women are appointed to the board, as opposed to fewer women on the board. The results were likewise consistent, correlating with those of Kristie (2011), Konrad et,.al (2008), Joecks et al. (2013), and Liu et al. (2014).

Table 4: Hausman test table for Board diversity

Model	Correlated Random Effects - Hausman Test				
	Equation: Untitled				
	Test cross-section random effects				
Board Diversity Accrual quality with no moderator (Ownership concentration)	Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
	Cross-section random		0.746571	1	0.00386
	Cross-section random effects test comparisons:				
	Variable	Fixed	Random	Var(Diff.)	Prob.
	B. DIV	0.025475	0.026274	0.000001	0.00386
Board Diversity Accrual quality with moderator	Cross-section random		0.893421	2	0.01525
	Cross-section random effects test comparisons:				
	Variable	Fixed	Random	Var(Diff.)	Prob.
	B. DIV	0.130312	0.142135	0.000405	0.03569
	B. DIV*Z	0.000014	0.000011	0.000010	0.02545
Board Diversity with Discretional Accrual in the absence of a moderator	Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
	Cross-section random		1.045084	1	0.00269
	Cross-section random effects test comparisons:				
	Variable	Fixed	Random	Var(Diff.)	Prob.
	B. DIV	0.230312	0.202432	0.000405	0.00269
Board Diversity with Discretional Accrual in the presence of a moderator (Ownership concentration)	Cross-section random		0.691195	2	0.00724
	Cross-section random effects test comparisons:				
	Variable	Fixed	Random	Var(Diff.)	Prob.
	B. DIV*Z	0.025502	0.026364	0.000001	0.4222
		-0.000001	-0.000005	0.000000	0.8029

Similarly, it was determined that for discretionary accrual of non-financial institutions listed on the NSE, both fixed-effects models were adequate in the presence of a moderator and in the absence of a moderator. P-values of 0.00367 and 0.032, as seen in Hausman table 4, backed up the conclusions. The fixed effect model with moderator was found to be superior to the fixed effect model without moderator, i.e., R2FW R2FM, using the R-squares values in table 4. In conclusion, the final models used in this scenario were:

DA = 0.9869 + 0.0381*BOARD SIZE + 0.0013 BOARD SIZE*Z

5. Conclusion

As a result, board diversity had a significant impact on financial performance, which may be utilized to predict the financial success of non-financial firms on the Nairobi Securities Exchange. The results showed that board size had a significant impact on both return on assets and discretionary accrual (financial performance) of the companies listed at the. The two models, random effects and fixed effect, were used with and without a moderator, and the results showed that board size had a significant impact on both return on assets and discretionary accrual (financial

performance) of the companies listed at the. The results also revealed that when the moderator was included in the models, the R2 increased dramatically, indicating that the moderating variable (firm size) had an effect on both models. The fixed effect model was considered to be the most appropriate model because the null hypothesis was rejected. Based on these findings, board diversity could be used to estimate earning quality in the presence of ownership concentration for non-financial firms listed on the Nairobi Securities Exchange.

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