

Parameters of Governing Boards and the Goodwill of Listed Firms

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Abstract

Board characteristics are a key aspect of corporate governance practice and copious literature is available on the relationship between parameters of a governing board and the goodwill of listed firms. However, in spite of the abundant literature about this association and the progress in the day-to-day area of corporate governance, inconclusive results on the relationship still abound in previous studies. Thus, a study on the nexus between board characteristics and firm value is useful in understanding corporate governance practices especially in Kenya. This study is conducted with the main aim of establishing the effect of board characteristics (specifically the board meetings, board size and board gender diversity) on firm value of listed banks in Kenya. The study employed a correlational research design to attain its objective and with the target population of ten banks that were listed at the Nairobi Securities Exchange during the financial years between 2008 and 2021 using panel data. Multiple linear regression is used for data analysis with the findings revealing that board gender had a positive but insignificant effect with firm value as proxied by Tobin's Q, while board size had a positive and significant effect with firm value. On the other hand, board meetings had a negative and insignificant effect with firm value.

Key words: Directors Characteristics, Listed Banks, Boards

JEL CODES: GO, G1, G2, G3, F3

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1. Introduction

The spectacular collapse of giants such as Coloroll, Ferranti, and Maxwell Empire in the UK, WorldCom, Lehman Brothers and Enron among others in the US had a serious impact on corporate governance practice (Naseem *et al.*, 2017). The Asian economic crisis of 1997 also contributed significantly to the rise in the profile of corporate governance practices as it was linked to weak corporate governance practices.

In developing countries, Meme (2017), posits that corporate governance frameworks continues to decline. The researcher argues that, Kenya for example lags behind other nations due to failure by companies in complying with requirements of board composition. Thus, due to poor governance practices, large corporates such as CMC Motors and Unga Group experienced corporate failures occasioned by weak financial performance. Scholars such as Koech *et al.* (2017), aver with this school of thought that, there is widespread erosion of corporate governance standards all over the global financial markets, arguing that, unethical and questionable practices were being accepted, in addition to allegations of gross malfeasance in corporate activities. These creates a net effect of undermining investor and shareholder faith in global financial markets.

Boards of directors collectively hold the position of highest governing authority in the organization, responsible for the long-term success of the organization (Westby, 2014). Ideal governing boards provide independent advice and oversight of management that is appropriate with the needs of the organization (Zahra & Pearce II, 1989). These functions are usually key around decisions deemed strategic for example mergers, which can potentially and significantly impact firm value.

Salem et al. (2019), aver that, studies tend to dwell particularly on five board directorship characteristics which are, CEO duality, board size, independent directors, board meetings and gender diversity. However, this study will focus on three board characteristics which are board meetings, board size and board gender diversity; and will seek to answer questions on the relationship between these three characteristics and firm value.

The first dimension of board characteristics which is board meetings, is defined as a formal setup that deliberates on important matters and issues that are critical for a firm's progress and growth (Eluyela et al., 2018). Ali and Oudat (2021), define board meetings as, the number of times that directors of governing boards meet on a daily basis. Frequent board meetings are important for overall effectiveness and efficiency of every governing board; and the expectation is that each and every board member attends all board meetings as it also forms a base for re-nomination. Johl, Kaur and Cooper (2015), aver that, it can be argued that, the frequency and attendance of board meetings is a key channel for directors to obtain firm-specific information and enabled to discharge their role as monitors of management.

The second dimension which is board size is the sum total of directors serving on the board of a given firm and which includes the Chairman, the CEO, executive directors, non-executive directors and independent outside directors (Nhan & Quy, 2013). Badu and Appiah (2017), posit that, board size's importance in influencing firm performance, is backed by literature. They scholars add that, different governance theories are supportive of this relationship with agency theory advocating for larger boards, while stewardship theory advocates for much smaller boards for easier governance. Agency theory presupposes that a large board enhances the performance of a firm through effective monitoring. The resource dependency theory is also supportive of this view with its proposition that, a large board enhances firm performance by bringing in a wide range of knowledge and expertise from different fields.

Lastly, board gender diversity is the ratio of female members serving on a given board (Nhan & Quy, 2013). According to Freitas (2018), in the recent past, there has been political pressure, projects and public movements for the advancement of diversity. Freitas (2018) adds that, a major shift in the paradigm of management has been the ever-increasing attribution to the importance of board diversity; be it religious, ethnic or gender and also argues that, in Europe, legislation has

been a key driver of diversity through imposition of mandatory quotas for women to serve on governing boards. This has created major challenges since not only are firms forced to move out of comfort zones and put effort in the finding of new female board members, but also because diversity in gender brings new perspectives and increased discussion regarding corporate activities, which may lead to improved monitoring.

Macheroochego *et al.* (2020), posit that firm value is contingent upon firm governance which leads to an increase in value. Highly valued organizations attract more investors. They add that, in Kenya to protect firm value, the Central Bank of Kenya increased minimum capital requirements on commercial banks from Ksh 250 million to Ksh 1 billion to cushion stockholder value. Firm value is the sum total of actual market worth of ordinary shares and the estimated market worth of preferential shares and debt (Abdullah *et al.*, 2017). This study employs Tobin's Q as a proxy in measuring firm value. Many previous studies used Tobin's Q as a proxy to measure firm value (Abdullah *et al.*, 2017). It can be considered as the best measurement for firm quality and managerial performance.

This study is justified due to the rapidly growing statistics of corporate failures and the reported inability of corporate boards to monitor top management effectively (Adebayo *et al.*, 2022). Globally, we have heard giants such as WorldCom and Enron experiencing financial depressions while in Kenya, the likes of Kenya Airways, Uchumi Supermarkets Limited amongst others have also been found in the bait of mismanagement and lack of proper corporate governance standards (Oguda, 2015). The Central Bank of Kenya (2016), warns that about three quarters of small-scale enterprises risk collapse within their first three years in operation. Also, it has been confirmed that it is not only small firms that collapse but also big firms such as Imperial Bank and Chase Bank among others (Bank Supervision Report, 2016).

Results on board characteristics and firm value have allowed for conclusions in their own right, but exhibit mixed reactions in the making. Nhan and Quy (2013), from the context of Vietnam established a positive relationship between board characteristics and firm value. Similarly, Nuryanah and Islam (2011), under the Indonesian context established that board size has a significant and positive relationship on firm value. Kamwana and Ombati (2018), from the Kenyan perspective also established a positive and significant relationship between board characteristics and firm value. Contrarily, Kumar and Singh (2013), from the context of India established a negative relationship between board size and firm value.

While it is recommended that theory should be applied to certain issues to generate new insights, M'ithiria *et al.* (2017), argue that, no single theory is able to fully explain the relationship between board characteristics and firm value holistically. Further, Ntim and Osei (2011), argue that, existing studies are heavily concentrated in a dozen developed economies of North America and Europe, which is a depiction of same institutional contexts in comparison and that it is not possible to generalize findings from developed countries to those that are developing.

Research findings on board characteristics and firm value especially on the context of listed banks needs to be evaluated in order to provide new policy recommendations that can provide clear futuristic directions to firms that are affected by inadequate corporate governance standards and their adherence. This study therefore is conducted with the main aim of establishing the effect of board characteristics (specifically the board meetings, board size and board gender diversity) on firm value of listed banks in Kenya.

2. Literature Review

While there is a strong belief that corporate governance is key to organizational performance especially at the level of the board, empirical evidence has not been supportive of this view (Lawal, 2012). Discrepancies in findings can partially be attributed to empirical flaws driven by wrong conceptualization and weak methodology. Anis *et al.* (2017), aver that, the inconsistencies may also be partially attributed to the fact that, previous studies used different measurements for exogenous variables, performance proxies, different hypotheses, sample time frames, control variables, estimation techniques and country and contextual differences.

According to Hou (2014), consensus exists on the conceptual literature while empirical literature, which is mainly focused on developed economies provides inconsistent evidence. Ntim (2013), avers that, studies linking integrated indices on corporate governance and firm performance are focused mainly on developed economies of Europe and America and emerging ones such as the Asia-Pacific region. However, for Africa, previous studies are concentrated on the impact of individual corporate governance mechanisms on firm performance. Al-Matari *et al.* (2012) assert that several studies examining the relationship between board characteristics and firm performance, have been mostly undertaken in developed and emerging economies. However, they report that, a thorough review of relevant literature reveals a paucity of studies examining performance implications of board characteristics in developing economies in general and the gulf region in particular. Thus, they put forth a call that further research to examine this relationship be conducted. They posit that, most studies have concentrated on investigating the impact of board characteristics such as CEO tenure, CEO duality, board size, audit committee and board composition.

Governing boards play a key role in the governance of firms, hence gaining insights into the effectiveness and characteristics of these boards effect on firm performance is critical, since agency theory assumes that, board director's role is to make sure that resolutions made by the executive are in the investor's best interests (Deschenes *et al.*, 2014). Freihat *et al.* (2019), argue that, a governing board is one among other factors of governance mechanisms, and good firm governance is urgently required in many organizations. They further argue that, the key advantage of establishing good corporate governance practices, is that it is helpful to enterprises and consequentially aids host countries access to international capital markets and that firms gain better results when they seek international investment.

According to Azar, Rad and Botyari (2014), in spite of the availability of copious literature about the relationship between board of directors' characteristics and firm performance, and the progress in the area of day-to-day corporate governance, there still abounds nuanced results in studies. They posit that, facts from different empirical studies in the last two decades support different suggestions on the subject. They argue that, some of their findings are in agreement with, and also in disagreement with previous studies. Johl *et al.* (2015), aver that, one stream of research established that board characteristics had a positive impact on firm performance while another stream established no relationship between the two.

Controversy also abounds on whether governing boards should comprise of large or small boards (Meme, 2017). Meme (2017), argues that, though many studies have examined the relationship of this board characteristic and firm performance, the results are nuanced. Muigai (2012) established that a negative association between the size of the board and firm financial performance. Johl *et al.* (2015), posit that board size seems to differ from country to country. Governing

boards should examine their sizes with a view of determining their impact based on their numbers (Johl *et al.*, 2015).

2.1 Board Meetings and Firm Value

In a study titled, “Influence of board meetings on financial performance of sugar industries in Western Kenya,” using a descriptive research design, and where Return on Investment (ROI), Return on Assets (ROA) and Tobin’s Q were calculated and used as measures of financial performance of the sugar industries, Lukhoma *et al.* (2018), established that, there is a positive and significant relationship between board meetings, and financial performance as measured by ROI, ROA and Tobin’s Q.

In a study titled, “Effect of corporate governance practices on the market value of listed insurance firms in Kenya,” with specific objectives being to determine the effect of board gender diversity, board independence, board size and board meetings on market value; using a descriptive and inferential research design, and having collected quantitative data which was analyzed descriptively, Mbelenga (2018) established that, board meetings is positive and statistically significant in explaining market value as proxied by Tobin’s Q.

In a study titled, “Board meeting frequency and firm performance: Examining the nexus in Nigerian deposit money banks,” Eluyela *et al.* (2018), sought to establish the relationship between board meetings frequency and firm financial performance as proxied by Tobin’s Q. Using panel data regression analysis to test the hypothesis that, board meeting frequency has no significant relationship with firm performance of deposit money banks, established a positive but insignificant relationship between Tobin’s Q and frequency of board meetings. They concluded that a 1% change in board meeting frequency among Nigerian banks, will result in a 1% change in Tobin’s Q.

In a study titled, “Boards of directors’ characteristics and firm value: A comparative study between Egypt and USA,” adopting a positive philosophy and quantitative approach, while utilizing GLS regression to test hypotheses, Salem *et al.* (2019), established that, the relationship between board meetings and firm value as measured by Tobin’s Q, in Egypt is positive and significant.

In a study titled, “The impact of corporate governance on firm value: Evidence from listed manufacturing companies in Sri Lanka,” using descriptive statistics and multiple regression analysis to analyze data, Wijesinghe *et al.* (2019), established that, board meetings frequency had an effect on listed manufacturing companies in Sri Lanka capable of improving firm value. Specifically, they established that frequency of board meetings had a positive and significant relationship with firm value.

2.2 Board Size and Firm Value

In a study titled, “Board characteristics and firm value of listed non-financial firms at the Nairobi Securities Exchange,” using both correlational and descriptive research designs, and relying on panel data regression, Patel (2022), with one of the objectives being to establish the influence of board size on firm value of non-financial firms listed at the Nairobi Securities Exchange, established that, the relationship between board size and firm value of non-financial firms listed at the NSE is positive and significant.

In a study titled, “Board characteristics and financial performance of listed manufacturing and allied firms in Kenya,” using panel data fixed effects model, and utilizing the explanatory research design while employing a quantitative approach, and the main objective being to examine the influence of board characteristics on financial performance of listed manufacturing and allied firms in Kenya, Manini and Abdillahi (2018), established that, the relationship between board size and firm performance as measured by Tobin’s Q was significant at 5% significance level.

In a study titled, “Board size, corporate regulations and firm valuation in an emerging market: A simultaneous equation approach,” using Two Stage Least Squares regression, Ntim (2013) investigated the association between board size and firm valuation for a sample of 169 firms from 2002 to 2011 in South Africa, and established a positive and significant relationship between board size and firm value as proxied by Tobin’s Q.

Contrarily, in a study titled, “Boards of directors’ characteristics and firm value: A comparative study between Egypt and USA,” adopting a positive philosophy and quantitative approach, while utilizing GLS regression to test hypotheses, Salem *et al.* (2019), established that, the relationship between board size and firm value as measured by Tobin’s Q, in Egypt is negative and significant.

In a study titled, “The impact of corporate governance practices on firm’s performance: An empirical evidence from Indian tourism sector,” adopting multiple correlation and utilizing ordinary least square (OLS) regression model to estimate the results, Yameen *et al.* (2019), established that, board size and the size of the audit committee have a negative effect on the performance of Indian hotels. They measured firm performance using proxies such as Return on Assets (ROA), Return on Capital Employed (ROCE) and Tobin’s Q. From their analysis, board size has a negative and insignificant relationship with firm performance as measured by ROA. Similarly, board size has a negative and insignificant relationship with firm performance as measured by ROCE. However, board size has a positive but insignificant relationship with firm performance as measured by Tobin’s Q.

In a study titled, “Effect of board characteristics on firm value: Evidence from India,” Rakesh and Kapil (2018) sought to explore the relationship between board characteristics and firm performance for Indian companies using Structural Equation Modelling (SEM) methodology, while employing both accounting and market-based measures as proxies for firm performance, established a positive and significant relationship between board size and firm performance as measured by both Tobin’s Q and ROA.

2.3 Board Gender Diversity and Firm Value

In a study titled, “Board characteristics and financial performance of listed manufacturing and allied firms in Kenya,” using panel data fixed effects model, and utilizing the explanatory research design while employing a quantitative approach, and the main objective being to examine the influence of board characteristics on financial performance of listed manufacturing and allied firms in Kenya, Manini and Abdillahi (2018), established that, the relationship between board gender diversity and firm performance as measured by Tobin’s Q was significant at 5% significance level.

In a study titled, “effect of gender diversity on the financial performance of insurance firms in Kenya,” Ibrahim *et al.* (2019) with the objective of assessing the effect of gender diversity in the board on the performance of insurance firms using descriptive and inferential statistics, estab-

lished a statistically positive and significant relationship between board gender diversity and accounting measures of ROA and ROE and marketing measure of Tobin's Q.

In a study titled, "Impact of corporate governance on firm's performance," Dabor *et al.* (2018), examined the impact of corporate governance on financial performance of quoted companies in Nigeria using two models, the Pooled Ordinary Least Squares (OLS) method and the Random Effects model. Return on Equity (ROE), Return on Assets (ROA) and Tobin's Q were used as proxies to measure firm performance. In their analysis, they established that board gender diversity had a negative and insignificant relationship with firm performance across all the three measures.

In a study titled, "Boards of directors' characteristics and firm value: A comparative study between Egypt and USA," adopting a positive philosophy and quantitative approach, while utilizing GLS regression to test hypotheses, Salem *et al.* (2019), established that, the relationship between board gender diversity and firm value as measured by Tobin's Q, in Egypt is positive and significant.

In a study titled, "The impact of board gender diversity on firm value: Evidence from Kuwait," using a balanced panel dataset and employing the two-step system Generalized Method of Moments (GMM) estimation, Issa *et al.* (2021) established that board gender diversity is positively associated with firm value as proxied by Tobin's Q.

3. Research Method

This study used correlational research design, as it sought to provide information on potential relationships. A correlational research design concerns itself with the establishment of relationships between two or more variables in the same population (Curtis *et al.*, 2016). The study's population of interest was all the 10 banking institutions listed at the NSE for a period of fourteen years from 2008 to 2021. Because of the small population, a census was carried out.

The study used secondary sources of data. Yusuf (2013), argues that, secondary data is not associated with the loopholes of primary data, since it is derived from a wide range of sources such as published literature, online sources, and government agencies among others. Cooper and Schindler (2011), posit that, secondary data is desirable because it allows a researcher to perform a longitudinal analysis; which means that studies spanning over a large period of time can be performed.

Data was compiled, edited, coded then analyzed using STATA version 12. STATA is quite useful in graphical presentation of raw data. Cooper and Schindler (2011), argue that editing is undertaken to obtain accuracy, consistency and uniformity of the data and is achieved through detecting errors and omissions, correcting where possible to ensure that maximum standards of data have been realized. The results of this study are presented in the form of tables and figures. The equation for the random effects model is expressed below:

$$Y_{it} = \beta_0 + \beta_{1it} bodgdv + \beta_{2it} bodsiz + \beta_{3it} bodmt + \epsilon_{it}$$

Where:

Y = Firm value

β_0 = The intercept or constant

β_1 = Coefficient of board gender

β_2 = Coefficient of board size
 β_3 = Coefficient of board meetings
 ε = Error term

Value = Tobin's Q (as measured by the market value of outstanding stock and debt) divided by the replacement cost of the company's assets of firm i in year t as a proxy of the value of the firm.

The econometric model used for the study is multiple linear regression, which sought to express the relationship between endogenous and exogenous variables. Diagnostic tests were conducted to ascertain that the regression assumptions were met and sampled data appeared to be from a population that met regression assumptions.

Breusch and Pagan LM test is aimed at aiding the researcher choose an appropriate model to fit between the Ordinary Least Squares (OLS) and the Random Effects model (Musyoka, 2017). The null hypothesis of the Breusch Pagan LM test is that there exists uniform variance across panels under investigation against the alternative that states that there is no uniformity in variance across the panels. A p-value of less than 0.05 indicates that the appropriate model to fit is the Random Effects model.

When dealing with panel data, a decision on the treatment of individual specific effects, that is if one has to employ a fixed effects model or a random effects model has to be made (Bole & Rebec, 2013). This decision is dependent on the correlation between the unobserved effects and the independent variables. The Hausmann test is a standard test to discriminate between a fixed effects model and a random effects model in panel data analysis (Bole & Rebec, 2013). Ali *et al.* (2014), aver that the Hausmann test is applied in empirical studies to help determine if a fixed effects model or a random effects model will be utilized in panel regression analysis. This study employed the Hausmann test to determine if the fixed effects model was suitable or if the random effects model was the most suitable.

According to Ali *et al.* (2013), two hypotheses exist to determine which model is appropriate and they are:

H_0 = The random effect model is the most suitable and consistent for panel regression analysis.

H_1 = The random effect model is inconsistent for panel regression analysis.

The null hypothesis is accepted if the p-value of the Hausman test is greater than 0.05. However, if the p-value is less than 0.05, (i.e., significant), then the null hypothesis is rejected.

The study used the Shapiro-Wilk test to test for normality. The test statistic W may be written as the square of the Pearson correlation coefficient between the ordered observations and a set of weights which are used to calculate the numerator. Since these weights are asymptotically proportional to the corresponding expected normal order statistics, W is roughly a measure of the straightness of the normal quantile-quantile plot. Hence, the closer W is to one, the more normal the sample is (Shapiro & Wilk, 1965).

Multicollinearity is a statistical phenomenon in which two or more independent variables in a multiple regression model are highly correlated (Daoud, 2017). Severe multicollinearity can raise the variance of the coefficient estimates and make them very sensitive to minute changes in the model (Mwaura, 2014). In regression analysis, the assumption is that independent variables are

not correlated with each other. The study utilized the correlation analysis to examine the strength of the relationship between variables under investigation. According to Musyoka (2017), a correlation coefficient higher than 0.8 is not desirable.

4. Result and Discussion

4.1 Exploratory Data Analysis

Both linear and overlay graphs are utilized to present data as shown below:

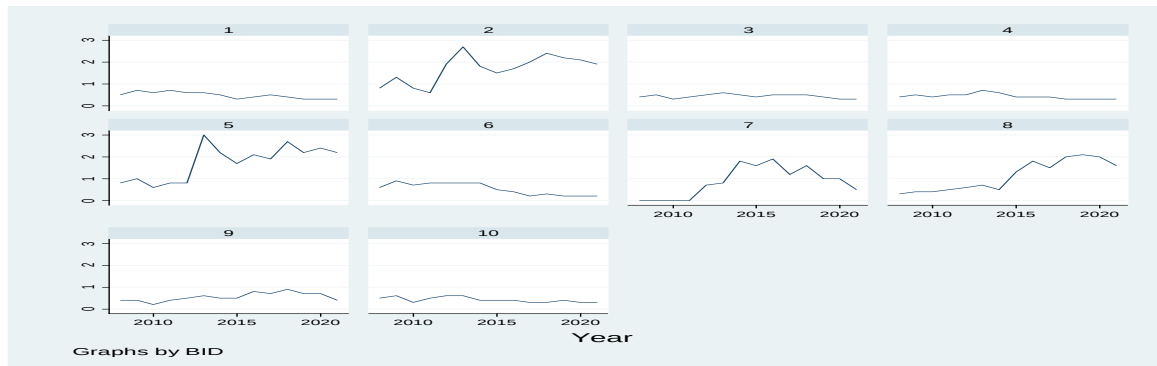


Figure 1: Trend Analysis of Tobin's Q

As indicated in figure 4.1 above, a downward and upward trend is observed for the listed banks as shown by Tobin's Q.

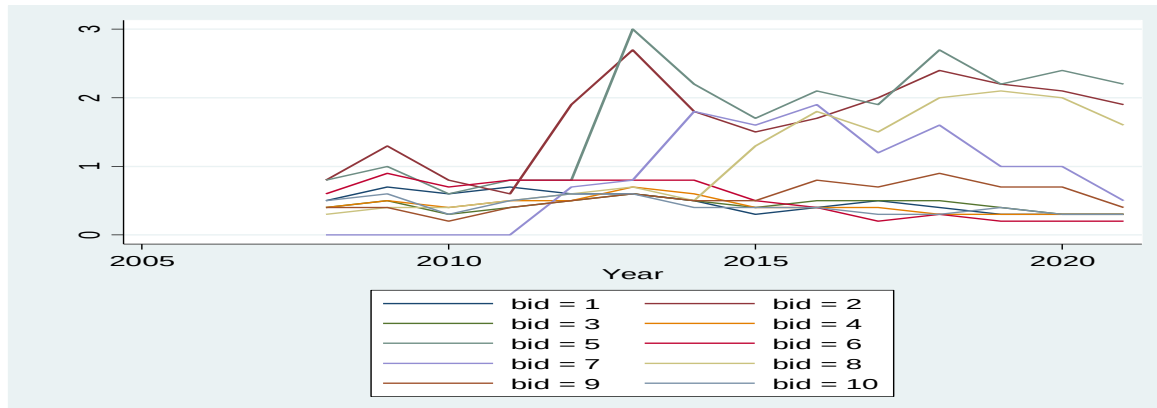


Figure 2: Overlay Graph of Tobin's Q

From the above graph, it can be deduced that the ten listed banks at the NSE had different slope coefficients and intercepts with some banks exhibiting higher slope coefficients as compared to others.

4.2 Descriptive Statistics

Descriptive statistics is useful in summarizing information about a population through output that conveys information that is precise about the behavior of the variables (Berenson, Levine & Krehbiel, 2012) through measures of dispersion (standard deviation, range) and central location

(median, mean) (Wegner, 2001), as cited in Oguda (2015). These measures compress large volumes of data to simple formats that ease understanding of sample populations.

Table 1: Descriptive Statistics

Variable	Mean	Std.Dev.	Min	Max	Observations	
tobinsq overall	0.826	0.670	0	3	N	= 140
boardg~r overall	2.329	1.278	0	5	N	= 140
boards~e overall	9.950	2.293	0	14	N	= 140
boardm~s overall	6.236	2.976	0	20	N	= 140

From the results in Table 1, the mean Tobin's Q is 0.8264286 with a standard deviation of 0.669759. Since the mean value of Tobin's Q is less than one, the implication is that the firms are undervalued, that is the market value of the firms' stock are lower than their stated book values. Thus, the companies are trading undervalued (Meme, 2013).

Board size as a characteristic of governing boards was measured using total number of directors serving on the board. The mean number of directors serving on governing boards is 9.95 with a standard deviation of 2.2927 and a maximum of 14 directors. According to the CMA Code of Corporate Governance (2015), a governing board shall be comprised of such a number that enables the company meet its business requirements. The number should also not be too large that it undermines interactive discussions during board meetings or too small such that it compromises the inclusion of wider skills and expertise so as to improve board effectiveness and the formation of board committees.

Most governing boards are male-dominated, since on average the mean ratio of female directors is 2.328571 with a standard deviation of 1.277604 and a maximum of 5. In as much as article 27(8) of the Constitution of Kenya (2010), on the gender make-up of governing boards stipulates that, one gender shall not dominate the other gender in appointive or elective posts, women still have low representation on governing boards.

Lastly, is board meetings which was measured using the total number of meetings held in one financial year. The mean value for board meetings is 6.235714 with a standard deviation of 2.97619 and a maximum value of 20. This shows that there is approximately a mean of 6.235714 board meetings held per year for all the sampled banks in the study.

4.3 Study Variables

4.3.1 Tobin's Q as a proxy of Firm Value

Sometimes referred to as the general equilibrium theory or Q theory, Tobin's Q is at times written as "Tobin's-q," "Tobin's Q," Tobin's Quotient or simply "Q", since Q stands for Quotient. Others call it the Brainard Tobin Q (Bond & Cummins, 2004), as cited in Ali, Mahmud & Lima (2016). Tobin's Q plays a critical role in most financial relations (Chung & Pruitt, 1994), as cited

in (Alajlani & Posecion, 2018). The beauty of Tobin's Q is its ability to account for both financial and market data (Alajlani & Posecion, 2018).

Tobin's Q, thus counters some criticisms levelled at both accounting measures as well as stock returns as performance measurement tools (Alajlani & Posecion, 2018). Q is attractive because of its accuracy, precision, and relationship with valuation of investments thus showing the investment's real performance (Alajlani & Posecion, 2018). It is attractive in the valuation of investment opportunities, managerial performance, and stock mispricing. It's defined as the ratio of the market value of a firm to the replacement cost of its assets.

Most investment analysts agree that measuring Tobin's Q is not easy due to unavailable data, lack of ease of access to data, or non-disclosure of data for public usage (Alajlani & Posecion, 2018). They add that, dialogue with senior managers of finance suggests little if any, reliance on Tobin's Q in analysis of decisions. They argue that, the probable reason managers shun Tobin's Q may be due to lack of familiarity with this tool and its many facets. They further argue that, the unavailability of timely and accurate Q data is limiting as compared to established sources of other important financial variables like beta.

To overcome the issue of unavailable data, some researchers devised their own operational measures of Tobin's Q (Alajlani & Posecion, 2018). The most common estimation methods for Tobin's Q are those developed by Lang and Litzenberger (1989), and Lindenberg and Ross (1981), (referred to as L-R procedure). The L-R procedure divides a firm's assets into three components namely, inventory, plant and equipment, and other assets, where they apply a different methodology for each. However, researchers deem the procedures typically employed to calculate Q values in the L-R procedure and Lang and Litzenberger (1989), method as cumbersome and complex to the extent that even dedicated financial analysts never dare attempt them (Alajlani & Posecion, 2018).

Hall (1990), as cited in Alajlani and Posecion, (2018), proposes a method that uses a recurrent model. Hall's method does not utilize other asset components in the replacement cost. The Chung and Pruitt (1994), model used basic accounting information to model an accurate approximation of Q called the approximate q. They then ascertained the values obtained by the approximate q with those of Lindenberg and Ross (1981), and found them theoretically correct, and that the model indicated that approximate q explained at least 96.6% of the variability in Tobin's Q.

To help achieve the objective of the research, this study sought to utilize a simplified method of data gathering which may be reliable and accurate for investors who may want to use it as a guide in market valuation. Chung and Pruitt's approximate q was deemed suitable for this study. Chung and Pruitt's approximation of Q is extremely conservative with regard to data requirements and effort employed to compute it. It simply approximates Q as below:

Approximate Q = (MVE + PS + Debt)/TA where:

MVE = The product of the share price of a firm and the number of outstanding ordinary shares;

PS = The liquidating value of a firm's outstanding preference shares;

Debt = The value of a firm's short term liabilities net of its short-term assets, plus the book value of a firm's long-term debt;

TA = The book value of a firms' total assets.

Interpretation

Tobin's $Q > 1$ = Overvalued firm. The implication to an investor is that the market value of the firm's stock is higher than its stated book value (Ali *et al.*, 2016). They add that, in this scenario, the market is pricing the firms' assets above its stated book value. Thus, the stock is more expensive than the cost of the assets.

Tobin's $Q < 1$ = Undervalued firm. The implication to an investor is that the market value of the firm's stock is lower than its stated book value (Ali *et al.*, 2016). Thus, the market value is below the cost of the assets.

Tobin's $Q = 1$ = Fairly valued firm. The implication to an investor is that the market value of the firm's stock reflects its book value (Ali *et al.*, 2016).

Ali *et al.* (2016), argue that if Tobin's Q is less than one, it means that it costs a firm more to replace its assets than it is worth, thus it would be in a better position shedding off its assets instead of trying to put them to use. The ideal scenario is where Tobin's Q is approximated to equal one, indicating that the firm is in equilibrium.

The study adopted the Chung and Pruitt (1994), method, because it assumes that book values are good estimates of market values (Alajlani & Posecion, 2018). This method is also supported by the simple Q , another commonly used approximation of the True Q (Switzer & Emery, 1996), as cited in Alajlani and Posecion (2018), which assumes that book values are good estimates of market values. Thus, it provides an empirically fruitful framework for individual firm analysis.

TABLE 2: Tobin's Q of listed banks in Kenya

		Years													
	Bank	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	Absa	0.5	0.7	0.6	0.7	0.6	0.6	0.5	0.3	0.4	0.5	0.4	0.3	0.3	0.3
2	CfC	0.8	1.3	0.8	0.6	1.9	2.7	1.8	1.5	1.7	2	2.4	2.2	2.1	1.9
3	Co-op	0.4	0.5	0.3	0.4	0.5	0.6	0.5	0.4	0.5	0.5	0.5	0.4	0.3	0.3
4	DTBK	0.4	0.5	0.4	0.5	0.5	0.7	0.6	0.4	0.4	0.4	0.3	0.3	0.3	0.3
5	Equity	0.8	1	0.6	0.8	0.8	3	2.2	1.7	2.1	1.9	2.7	2.2	2.4	2.2
6	HF	0.6	0.9	0.7	0.8	0.8	0.8	0.8	0.5	0.4	0.2	0.3	0.2	0.2	0.2
7	I & M	0	0	0	0	0.7	0.8	1.8	1.6	1.9	1.2	1.6	1	1	0.5
8	KCB	0.3	0.4	0.4	0.5	0.6	0.7	0.5	1.3	1.8	1.5	2	2.1	2	1.6
9	NCBA	0.4	0.4	0.2	0.4	0.5	0.6	0.5	0.5	0.8	0.7	0.9	0.7	0.7	0.4
10	SCBK	0.5	0.6	0.3	0.5	0.6	0.6	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.3

Based on table 2 above, the value of Tobin's Q ratio of all sampled banks is less than one, which implies that the banking industry's stocks are undervalued between FY 2008 to FY 2011. However, CfC Stanbic's stock is overvalued in FY 2009 and FY's 2012-2021. For an investor, with Tobin's Q ratio less than one, the implication is that the company's stated book value is higher than its market value. Thus, the market is selling the assets of the company below the stated book value; hence, the market value is lower than the cost of assets (Ali *et al.*, 2016).

Equity bank's Tobin's Q ratio is also greater than one for FY 2013 through to FY 2021 which means the stock is overvalued. I & M's stock is overvalued for FY 2014 through to FY 2018, while KCB bank's stock is overvalued for FY 2015 through to FY 2021. I & M's stock is then undervalued from FY 2019-FY 2021. For an investor the implication is that the stated book value of the company is lower than its market value, thus the stock is expensive relative to its cost of assets (Ali *et al.*, 2016). However, it is important to note that the stocks of these banks are undervalued in the preceding years, since their Tobin's Q ratio is less than one.

4.3.2 Board Gender and Firm Value

From the descriptive statistics, on average, Kenyan banks listed at the NSE have two female directors sitting on their governing boards. Results from Table 8 exhibit a positive though statistically insignificant relationship with firm value as proxied by Tobin's Q, with a p-value of 0.209. This implies that, board gender diversity is not a significant determinant of firm value of listed banks at the Nairobi Securities Exchange.

This study's finding is in agreement with studies that find that, the increase in firm value is greater when governing boards have three or more female directors (Gyapong, Monem & Hu, 2016). In their study, Gyapon *et al.* (2016), established a positive relationship between both board gender and ethnic diversity and firm value. The study also established that, with two female directors serving on a governing board, firm value increases, though marginally lower than the increase associated with a single female director. They posit that, boards having two female directors are associated with a 0.221% increase in Tobin's Q. Liu, Wei and Xie (2013), study also established that governing boards having three or more women directors have a stronger effect on firm performance compared to boards with two or fewer women directors.

The first argument is premised on the view that females with requisite skills, qualifications and experience deserve an opportunity to serve on governing boards; while the second argument holds that positive board gender diversity results in better governance and enhances firm performance. This second argument implies that female representation on governing boards should serve purely to improve firm performance, otherwise organizations engage in the act of "tokenism," which they define as the practice of representing a minority group on a governing board so as to give an appearance of a sexual or racial equality within a workforce. According to Zimmer (1988), as cited in Agyemang-Mintah and Schadewitz (2017), firms engaged in tokenism are making a perfunctory gesture of inclusiveness towards groups deemed as minority.

The finding is also consistent with Syamsudin *et al.* (2017), study which established that board gender diversity in both the board of directors and board of commissioners has a positive effect on firm value. However, the findings of this study are in contrast with Freitas (2018), study that established that, the percentage of female directors serving on a governing board has a negative relationship with firm value.

4.3.3 Board Size and Firm Value

From the descriptive statistics, on average, Kenyan banks listed at the NSE have 9.95 directors sitting on their governing boards. Results from Table 8 exhibit a positive and statistically significant relationship with firm value as proxied by Tobin's Q, with a p-value of 0.016. This implies that, board size is a significant determinant of firm value of listed banks at the Nairobi Securities Exchange.

This study's finding is in agreement with Rashid and Islam (2011), study that established a positive relationship between board size and firm value. Furthermore, Nguyen *et al.* (2015), study also established that smaller boards are associated with higher firm valuations. In sum, the study findings are in tandem with those studies that premised their argument on the agency and resource dependence theories that support boards with a large number of members, since a greater number of directors improves firm value (Kalsie & Shrivastav, 2016). When taken together, both the agency and resource dependency theory signify that, there exists a positive relationship between the size of the board and firm value.

4.3.4 Board Meetings and Firm Value

From the descriptive statistics, on average, Kenyan banks listed at the NSE conduct 6.235 board meetings in a financial year. Results from Table 8 exhibit a negative and statistically insignificant relationship with firm value as proxied by Tobin's Q, with a p-value of 0.301. This implies that, board meetings are not a significant determinant of firm value of listed banks at the Nairobi Securities Exchange. The study's finding is in tandem with Rodriguez-Fernandez *et al.* (2014), study that established a negative but statistically insignificant relationship between the number of board meetings and firm performance as proxied by Tobin's Q. They posit that, their finding is not in congruence with agency theory which emphasizes board meetings do help coordinate the efforts of the board in monitoring different managerial actions. Bhat *et al.* (2018), study also established that board meetings have an insignificant relationship with firm performance as measured by Tobin's Q, proffering a possible reason that frequent board meetings may ratchet up firm costs, but are not productive enough to increase firm value due to the limited time spent in meetings by board members.

According to Bhat *et al.* (2018), the justification for such an insignificant result is that board meetings are expensive and take a short time which may not affect firm value. Additionally, Al-Musali and Ismail (2015), who also established a negative relationship between board meetings and intellectual capital, posit that, board meetings non-contribution to intellectual capital is due to the inability of board members to access requisite information that relates to the strategic agenda of meetings which in turn impedes their ability to actively participate in the decision-making process. Lipton and Lorsch as cited in Al-Musali and Ismail (2015), argue that, meetings require several regulatory and preparatory procedures to be effective in supporting directors perform their monitoring role. Most importantly, they further argue that, holding board meetings may be performed solely to comply with regulatory requirements.

The study's findings are in contrast with Ntim and Osei (2011), study which established a positive and significant relationship between frequency of board meetings and firm performance; buttressing the empirical support of agency theory, which holds that, governing boards that hold frequent meetings increase their capacity at advising, monitoring and disciplining management, thus increasing financial performance of the firm.

In sum, the finding of this study is consistent with existing literature that evidences that, theoretically consensus exists on the important role that board meetings play in the governance, conformance and performance of firms; while empirical literature on its impact on firm performance is nuanced (Ntim & Osei, 2011). According to Conger *et al.* (1998), as cited in Ntim and Osei (2011), frequency of board meetings is aimed at improving board effectiveness, which translate to board knowledge, ties and expertise that improve organizational outcomes. However, Carcello

et al. (2002), as cited in Ntim and Osei (2011), argue that, the only measure that is publicly available for researchers is the number of board meetings.

4.4 Diagnostic Tests

Table 3: The Breusch and Pagan LM Test

Tobinsq [bid, t] = xb + u [bid,t]		
Estimated Results:		
	Var	sd = sqrt (Var)
tobinsq	.4485771	.669759
e	.2030085	.4505646
u	.3829762	.6188507
Test: Var(u) = 0		
	chibar2(01)	= 255.60
	Prob > chibar2	= 0.0000

The aim of the Breusch and Pagan LM test is to help the researcher choose the appropriate model between the ordinary least squares (OLS) model and the random effects model. In this study the most appropriate model to adopt is the Random Effects since the p-value is 0.0000 which is less than 0.05, we fail to reject the null hypothesis and conclude that the random effects model is the most suitable and consistent for panel regression analysis.

Table 4: The Hausman Test

	Coef.
Chi-square test value	.098
P-value	.992

The Hausman Test is aimed at assisting the researcher choose the appropriate model in panel data regression analysis between the random effects model and the fixed effects model. In this study, the most appropriate model to fit is the random effects model since the p-value is 0.992 which is greater than 0.05. Since the p-value is greater than 0.05, we fail to reject the null hypothesis and conclude that the random effects model is the most suitable and consistent for panel regression analysis.

Table 5: Test of Normality

Variable	Obs	W	V	Z	Prob>z
residuals	140	0.943	6.269	4.146	0.000

Testing for normality in a model helps determine if the residuals behave normally (Meme, 2013). To detect all departures from normality of data, the study employed the Shapiro–Wilk test for normality. The Shapiro-Wilk test is a non-graphical test, that is used to test if the distribution of

residuals is normal (Meme, 2013). Table 5 above shows the output of the W statistic at 0.94245. Based on the Shapiro–Wilk, W, statistic, the closer W is to one, the more normal the sample is deemed to be, and hence we can conclude that overall residuals were found to be normally distributed.

Table 6: Test of Multicollinearity

Variables	(1)	(2)	(3)	(4)
(1) tobinsq	1.000			
(2) boardgender	0.142	1.000		
(3) boardsize	0.196	0.548	1.000	
(4) boardmeetings	0.004	0.312	0.321	1.000

When analyzing for multicollinearity, the assumption is that the independent variables are not correlated with each other (Musyoka, 2017). This study utilized the correlation analysis to test the strength of the relationship between the variables under study. The best and quickest method of identifying highly correlated variables is the use of a correlation matrix. The correlation matrix shows the correlation between every single pair of numeric features from the dataset. The study concludes that multicollinearity was not detected since the reported values are within the acceptable range.

4.5 Model Fitting

To test the overall validity of the regression model, analysis of variance (ANOVA) was employed. The results are presented in table 7 below.

Table 7: Board Characteristics and Firm Value Model Fit

Tobinsq	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Boardgender	.062	.049	1.26	.209	-.035	.159	**
Boardsize	.066	.027	2.42	.016	.013	.12	
boardmeetings	-.023	.023	-1.03	.301	-.068	.021	
Constant	.168	.317	0.53	.596	-.454	.79	
Mean dependent var	0.826		SD dependent var	0.670			
Overall r-squared	0.045		Number of obs	140			
Chi-square	12.115		Prob > chi2	0.007			
R-squared within	0.085		R-squared between	0.021			

*** $p < .01$, ** $p < .05$, * $p < .1$

Since the Hausman test showed that the most appropriate model for the study is the random effects model and not the fixed effects model, a random effects model was fitted to examine the effect of board characteristics on firm value of listed banks at the NSE. A rho of 0.653 was obtained which indicates that 65.3% of the variance is due to differences across panels. From Table 8 above, we also see the Chi-Squared value generated by the Wald test, as well as the p-value associated with a chi-square of 12.12 with three degrees of freedom.

Based on the p-value of 0.0070, we reject the null hypothesis, and indicate that the coefficients for board gender, board size and board meetings are not simultaneously equal to zero, meaning that the inclusion of these three variables creates a statistically significant improvement in the fit of the model. The resultant regression model becomes $\hat{y} = 0.168 + 0.062X_1 + 0.066X_2 - 0.023X_3$

Where:

Y= Firm Value (as proxied by Tobin's Q)

X1 = Board Gender

X2 = Board Size

X3 = Board Meetings

5. Conclusions

This study's objective was to investigate the effect of board characteristics on firm value of listed banks in Kenya. The study's specific objectives were to determine the effect of board gender diversity on the value of listed banks in Kenya; to establish the effect of board size on the value of listed banks in Kenya and to assess the effect of board meetings on the value of listed banks in Kenya.

Data was collected from ten banks listed at the NSE. It was analyzed and presented in chapter four with specific objectives being utilized as parameters in analysis. To gain an understanding of the research results from previous studies, empirical and theoretical literature played a crucial role in comparison of results from previous studies.

On board meetings, this study concludes that frequent board meetings contribute negatively but insignificantly to firm value. Regarding the role of board meetings in affecting firm value, from the reviewed literature, there is need for the provision of requisite and sufficient information to board members particularly as relates to strategic matters that are useful in enhancing the corporate market value of firms. This helps board members better prepare and get more involved in the meetings.

On board gender diversity, this study concludes that female directors contribute positively but insignificantly to firm value. There are theoretical arguments that suggest the existence of a nexus between board gender diversity and improved corporate performance. From the agency theory perspective, the inclusion of women on governing boards, strengthens corporate governance mechanisms through efficient monitoring and control which may help restrain top management from enhancing their positions thus mitigating costs of agency. While the proposition of resource dependency theory is that, women directors bring diverse viewpoints and professional backgrounds to boardrooms which differ from those of what can be termed as the "Old Boys Club."

On board size, this study concludes that the size of the board contributes positively and significantly to firm value. Importantly, there are arguments that support the agency theory's view that large boards comprised of more directors' work in the interests of shareholders through monitoring and controlling which enhances firm performance. Additionally, the resource dependency theory perspective is also supported by the argument that, large boards avail scarce resources to

the firm due to connections with people from the same or different industries. Thus, members gain access to different resources and when the number of directors increases, resource availability also increases, which in turn increases firm value.

The study recommends that, for corporate governance to be more effective, policy makers should not focus primarily on designing regulatory frameworks that emphasize “apply-or-explain” rules for listed companies, but rather focus on the equally important but often not stressed issue of how board characteristics can be utilized to add a strategic value to a company. This is because, well-balanced boards play crucial roles and can be sources of competitive advantage for companies in terms of value creation and innovation.

Since the relationship between board size in affecting firm value is positive, regulators should refrain from prescribing what can be described as an “optimum” number of directors to serve on a governing board. The study recommends that policy makers should refrain from prescribing the number of directors to serve on a governing board since the finding reinforces the fact that Kenyan banks require large boards that enhance their ability to comprehend and respond to diverse stakeholder interests. It can be argued that, by both inside and outside directors collaborating, outside directors can obtain firm specific information from inside directors which aids them make robust financial decisions and reduce information asymmetries from the market, hence creating value for shareholders.

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