BOARD CHARACTERISTICS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

CALEB MANYAGA BW'AUMA

DOCTOR OF PHILOSOPHY

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Board Characteristics and Financial Performance of Commercial Banks in Kenya

Caleb Manyaga Bw'auma

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

Signature ……..Date…….

Caleb Manyaga Bw'Auma

This thesis has been submitted for examination with our approval as the University supervisors.

Signature ……..Date…….

Prof. Willy Muturi, PhD

JKUAT, Kenya

Signature ……..Date…….

Dr. Oluoch Oluoch, PhD

JKUAT, Kenya

DEDICATION

A special dedication to my parents for facilitating my initial education that formed the basis of who I am today. To my dear wife, children and grandchildren who have been sources of inspiration in my studies. To all those who made this thesis a success in one way or the other. May God bless each one abundantly.

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LIST OF ACRONYMS

ANOVA	Analysis of Variance
BFM	Board Frequency of Meetings
BGD	Board Gender Diversity
BS	Board Size
BSO	Board Share Ownership
CBK	Central Bank of Kenya
CEO	Chief Executive Officer
CPD	Continuous Professional Development
DY	Dividend Yield
EPS	Earnings Per Share
FEM	Fixed Effect Model
FGLS	Feasible Generalized Least Squares
GDP	Gross Domestic Product
IND	Industry
LB	Large Banks
LIQ	Liquidity
LNBTA	Natural Logrithms Bank Total Assets
MB	Medium Banks
MENA	Middle East and North Africa Countries

NIM	Net Interest Margin
OLS	Ordinary Least Square
PER	Price earnings Ratio
PhD	Doctorate of Philosophy
REM	Random Effect Model
ROA	Return on Assets
ROAA	Return on Average Assets
ROE	Return on Equity
SACCOs	Savings and Credit Co-operative Societies
SB	Small Banks
SPSS	Statistical Package for Social Sciences
STATA	Data Analysis and statistical Software
TBQ	Tobin's Q ratio
USA	United States of America

DEFINITION OF TERMS

Bank size	:	Is a fundamental firm characteristic that shows its magnitude or how big the firm is, and one way to measure bank size is its total assets (Borlea, Achim & Mare, 2017)
Board characteristics	:	These are attributes of the directors and are used in the study as independent variables: board size, board frequency of meetings, board gender diversity and board ownership (Akpan & Amran, 2014).
Board frequency of meetings	:	Number of meetings held by the board in the year (Naseem *et al.,* 2017)
Board gender diversity		This is a distinction between male and female representation in the board of a firm (Terjesen *et al.*, 2015)
Board share ownership	:	This is the total shareholding by the directors in a firm either as individual or institutional representation (Akpan & Amran, 2014)
Board size	:	The number of directors sitting appointed to run a company (Adebayo *et al.,* 2013)
Return on assets	:	This is an indication of the firm's profitability in relation to its total assets (Pathan & Faff, 2013)

ABSTRACT

Weaker legal systems and regulatory framework in developing countries like Kenya calls for stronger board govervance. Boards are charged with duties such as recruitment, controlling, supervising, oversight and directing top management with a view of instilling discipline, deterring malpractices, collapsing of banks and enhance the wealth of shareholders. Thus, forestalling sanity, stability and restore confidence to investors in the Kenyan banking sector. This informed this study to evaluate the influence of board characteristics on financial performance on commercial banks in Kenya. This study carried a census survey of 43 commercial banks in Kenya that were in operation in order to achieve the general objective of the study. Specifically, the study focused on how board size, board frequency of meetings, board gender diversity and board share ownership influenced the return on equity (ROE) of commercial banks in Kenya. The study also sought to establish the moderating effect of bank size on the influence of board characteristics on ROE of commercial banks. The study was informed by agency theory, resource dependence theory, stakeholder theory, transaction cost theory and stewardship theory. Descriptive research design was used to test the relationship of the independent variables on the dependent variable. Using data collection sheet, secondary data was obtained from audited annual reports and statements of commercial banks and Central Bank of Kenya websites for ten years 2009 to 2018 resulting to 340 observations. Applying both descriptive and inferential statistics, the study examined the relationship between board characteristics and the financial performance of all banks, large banks, medium banks and small banks. For descriptive statistics; mean, standard deviation, maximum, minimum and jarcque bera were used to indicate the nature of both independent and dependent variables. For inferential statistics, FEM was used to establish the coefficients of board characteristics which was then tested for their statistical significance using p-value at 95% confidence level. Using STATA Version 13 to analyse data, testing the five hypotheses adopting panel data and found board size, board frequency of meetings, board gender diversity and board share ownership had a positive and significant influence on return on equity (ROE) across the industry; board size, board frequency of meetings and board share ownership had a positive and significant influence on ROE of large and medium banks. Board gender diversity had a negative but significant influence on ROE. Additionally, board size, board frequency of meetings and board share ownership had a negative but significant influence on ROE across small banks. Bank size had a moderating effect on the influence of board characteristics on ROE of commercial banks, large banks, mediums banks and small banks. From these findings, some policy implications were suggested: an optimal board size of between 6-10 directors; further study on other variables since R^2 was 63.45 percent explaining the variability of ROE of commercial banks in Kenya. The study concluded board characteristics plays a critical role in instituting stability and restores confidence in equity holders in commercial banks in Kenya that drives the economy.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Board characteristics have become a dominant subject matter of scholarly work both in the developing and the developed economies. It links the connectivity between the directors and equity holders. The growing significance of board characteristics that emanate from a wide-ranging body of theoretical and empirical study sways the resolutions made by equity holders in the manner the directors shape the institutions they have been bestowed to have an oversight on behalf of the shareholders (Al-Manaseer, Al-Hindawi, Al-Dahiyat & Sartawi, 2012).

The interrelationship between board characteristics and financial performance of banks has been the subject matter of discussion in the financial literature. Scholarly literature on the influence of board characteristics variables such as board share ownership, board frequency of meetings, board gender diversity and board size, and the financial performance has brought to the fore mixed results (Johl, Kaur & Cooper, 2015; Akpan & Amran, 2014; Bijalwan & Madan, 2013).

Strong board characteristics can control and direct top management to render efficient, effective and sound operations which improve the financial performance of commercial banks. It establishes responsibilities and levels of authority through which transactions and affairs of the banks are carried out by the board of directors and top management (Basel, 2015). Empirical evidence has confirmed that strong board characteristics are an essential and effective mechanism of corporate governance that fulfil two critical functions in the financial performance of commercial banks: overseeing top management in representing the shareholders and provision of business resources and evaluation. The board utilizes its resources and time to control and monitor top management with a view of enhancing the financial performance of a bank (Jensen & Meckling, 1976). Consequently, management actions and resolutions should focus on the maximization of the net worth of the owners of the firm.

Agency theory, which explains the fiduciary relationship existing between one person, the principal, and another the agent, allows the agent to execute some functions on his behalf. Due to asymmetry of information, detachment and self-interest, the agent takes self consideration without the interest of the owner. This behavior is observed as that which gives way to agency cost (Berle & Means, 1932). Fama and Jensen (1983), argued that agency challenges can be resolved through commensurate compensation to top managers and putting in place elaborate bank management processes. These management processes are the widest benchmark to diminish agency cost and enhance the financial performance of a bank (Johl, Kaur & Cooper, 2015).

The linkage between firm management processes such as board characteristics and financial performance of a firm has been a subject of thought in the academic field of the developing and developed economies (Abu, Akpeh & Okpe, 2016; Amran & Akpan 2014). This is particularly essential in the Kenyan banking sector as several banks collapsed through fictitious, suspicious transactions and frauds which eroded investor's confidence (Abu, Akpeh & Okpe, 2016). The linkage clarifies and brings out the relationship between shareholders and the board. The growing significance of the firm management process comes from a larger body of theoretical and empirical studies which impact the resolutions made by shareholders on how the boards run the bank and to ascertain whether the affairs and activities of the bank are managed in the interest of the shareholder.

Boards' characteristics have legal responsibilities which vary with the operations of the bank and the nature in which it operates (Al-Manaseer, Al-Hindawi, Al-Dahiyat & Sartawi, 2012). By implication, the size of the board, meetings held, gender diversity of the board and share ownership helps the board to play a significant role in the financial performance of a bank. The size of the board plays a pivotal role in effective board characteristics in governance mechanism through disciplining top management while board meetings and attendance of meetings by board members offer an opportunity to meet their fiduciary duties and responsibilities of the bank (Johl, Kaur & Cooper, 2015). Ntim (2015) argued that having more women on the board increases effectiveness in controls instituted by the board as women are stricter

and more trustworthy. Bashir, Fatima, Sohail, Rasul and Mehboob (2018) identified board share ownership as an effective mechanism that aids to align interests of the board to that of the equity holders. Fama and Jensen (1983), emphasized that proper selection of board characteristics is a critical tool for disciplining, advising managing, monitoring and controlling activities of the bank which enhances shareholder wealth.

1.1.1 Global Overview of Board Characteristics and Financial Performance

In the past two decades, the world had witnessed cases of failures of reputable firms such as Swissair (2001), Pacific Gas & Electric Ltd (2001), Enron (2001), WorldCom (2002), Conseco (2002), Parmalat (2003), Delta Air Lines (2005) and General Motors (2009); which were a representation of well-managed firms before their collapse (Akpan & Amran, 2014). Their winding up aroused the interest of researchers, analysts, industry practitioners and policymakers. The unwarranted experience motivated researchers to commence studies aimed at evaluating the causes of these failures. Yasser, Entebang and Mansor (2011), argued that a larger board size enables boards to bring onboard directors of diverse skills and expertise which facilitate closer and effective oversight coupled with monitoring of the top management by the board which improves financial performance. Mamatzakis and Bermpei (2015) argued that a smaller board size enables board members to exchange ideas and reach optimal decisions which impact positively financial performance of banks whereas Bashir, Fatima, Sohail, Rasul and Mehboob (2018) said the size of the board does not matter in financial performance. According to Bijalwan and Madan (2013), there is no one-board size fit all, thus the size of the board was to be determined by the industry and the country of operation.

Johl, Kaur and Cooper (2015) argued that it is through board meetings that directors are enabled to obtain information regarding bank operations which facilitates the directors to achieve objectives of the bank through monitoring, advising and overseeing top management thereby improving financial performance. Al-Daoud, Saidin and Abidin (2016), advocated that more meetings held makes directors arrive at better decisions and understand the operations of the bank. According to Naseem,

Riaz, Rehman, Ikram and Malik (2017), the frequency of meetings indicated the seriousness of the board and level of monitoring, oversight, advising and control which may mitigate agency costs and result in enhanced financial results of a bank. The nature of operations of banks necessitate a robust and effective monitoring mechanism that allows effective oversight and control on top management by the board through board meetings. From these studies, it is evident that through board meetings, directors were enabled to understand better the operations of the bank to make optimal decisions that enhance financial performance.

In the recent past, firms have shown willingness to broaden the presence of women on the board. Despite this, their presence has remained minimal and, in some cases, there was not found a woman director. For instance, firms headquartered in Germany, France, Singapore, Spain, Japan and the United Kingdom had witnessed 10 percent women on the board (Theune & Behr, 2016). In the European Union, Theune and Behr (2016) said there were minimal differences between firms dominated by males and those dominated by females. However, they saw firms led by females were generally smaller in size and had minimal risks as opposed to those firms led by male. Abdullah, Ismail and Nachum (2016) advocated for more females on the board as their presence caused firms to improve financial performance, whereas Johl, Kaur and Cooper (2015), said board gender diversity had negatively influenced the financial performance of Malaysian firms. However, in the Netherlands and Denmark, Marinova, Plantenga and Remery (2010), opined board gender diversity did not influence the financial performance of a firm. Mamatzakis and Bermpei (2015) advocated for board share ownership as it enhanced financial returns of US investment banks in the US, whereas Beltratti and Stulz (2012), discouraged board share ownership as it diminished the financial performance of firms. These studies draw different conclusions, hence, no unified finding as to how these variables relate to the financial performance of banks globally.

1.1.2 Regional Overview of Board Characteristics and Financial Performance

Regionally, Abdulazeez, Ndibe and Mercy (2016), favoured larger boards as they contribute to the financial performance of commercial banks than smaller boards. They went further to state that by virtue of their numbers, it becomes difficult for any board members to dominate the board, and decisions reached in the meeting were perceived to have been discussed exhaustively and constructively. Such decisions got support from top management and implementation became easier and improved financial performance. On the contrary, Adebayo, Olusola and Abiodum (2013), called for a smaller board size as it costed lesser amount than a larger board size. Sherif and Anwar (2015), were in support of less frequency of board meetings as the more meeting held eroded the financial performance of banks in MENA countries. However, Al-Daoud, Saidin and Abidin (2016), encouraged more meetings as they facilitated directors to better understand bank operations thus making optimal deciosns which impacted positively on financial performance of listed firms at Aman Stock Exchange. This meant that the more the meetings held by the board, the better the financial performance of listed firms.

Ntim (2015), supported more female directors in the board as their presence enhanced board independence, decision-making and monitoring of top management which curtailed malpractices resulting to improved financial performance of listed firms in the Johannesburg Stock Exchange. Ntim (2015) went further to state that females on the board facilitated better linkage of a firm to its stakeholders thereby minimizing the conflicts resulting in improved financial performance. Akpan and Amran (2014), encouraged a greater proportion of women in the board as the current scenario was only window dressing and therefore could not bear noticeable gain. This meant that the more females on the board, the better financial results reported. Mousa and Desoky (2012) postulated that board share ownership had no relationship with ROA in Egypt, whereas Gugong, Arugu and Dandago (2014) differed and said board share ownership would motivate top management which was to bring about good working relationship resulting in improved ROE and ROA of Nigerian Insurance firms. Munisi (2016) observed that in weaker institutions like Africa, banks benefit minimally from external governance framework. Thus, it is the board

governance framework particularly board characteristics, which become handy. From the foregoing, it is clear that strong board characteristics improve financial performance, hence the current study will contribute to the existing literature on the linkage between board characteristics and financial performance.

1.1.3 Kenyan Overview of Board Characteristics and Financial Performance

Like other Sub-Saharan countries, the Kenyan economy has a weaker legal system with challenges in enforcing their regulations and laws (Rossouw, 2005). This calls for stronger board governance to minimize top management from malpractices through monitoring and oversight on the decisions they made with a view of enhancing financial performance. In this regard, empirical literature exists covering diverse variables that relate to the financial performance of commercial banks in Kenya. Mohamed and Atheru (2017) argued that a smaller board size was beneficial to the financial performance of commercial banks in Kenya. This implied that any additional director would decrease the profitability of the bank. It also implied that a smaller board was favorable to larger board sizes. Mbalwa, Kombo, Chepkoech, Koech and Shavulimo (2014) advocated for larger board sizes, since they improved decision making, which impacted positively on the financial performance of the sugar-producing firms in Kenya. Aduda, Chogii and Magutu (2013) favoured board size as it was a good predictor of ROA and TBQ.

Mandala (2019) advocated for board meetings ranging from 11 to 15 sittings as the optimal number which was likely to enhance the financial performance of financial institutions in Kenya. This meant that more frequent board meetings were an expensive affair to the company thus eroding the financial performance of the bank. Adhiambo and Josephat (2016) discouraged more frequent board meetings by stating that when you increase board meetings, financial performance is impacted negatively. Ongore, K'Obonyo, Ogutu and Bosire (2015) were in support of an increased proportion of female directors in the board as they enhance originality, market presence and bring to the fore better problem-solving solutions and promote an effective network in business. Mohamed and Atheru (2017) said that board gender diversity had no impact on the performance of Kenyan firms. Letting, Wasike,

Kinuu, Murgur, Ongeti and Aosa (2012) advocated also for board gender diversity by saying that increasing female directors would impact firm profits. There appears to be minimal studies in Kenya on board share ownership, however, Mandala, Kaijage, Aduda and Iraya (2018) found moderate board share ownership had a positive impact on firms' performance in Kenya.

1.1.4 Bank Size

Bank size is regarded as the most important factor that had a significant influence on financial performance in banks. Empirical evidence attests that bank size was likely to influence financial performance levels (Yang & Chen, 2009). Studies had ascertained that bank size was a major determinant of the success or failure of institutions. Large banks can introduce new products as opposed to smaller banks due to the economies of scale they enjoy (Nodeh, Anuar, Ramakrishnan & Raftnia, 2016). This is because larger banks can render services at a lesser cost up to when diseconomies of scale kick in. Naceur and Omran (2011) argued that the relationship between financial performance and the size of the bank can be either negative or positive. The size of the bank dictates whether to leverage or not. Smaller banks have a tendency of using equity as opposed to larger banks that opt for leverage.

In this study, bank size is considered as a moderating variable between board characteristics and the financial performance of commercial banks in Kenya (Terraza, 2015). Several studies have been carried out to ascertain the effect of bank size on the influence of board characteristics on the financial performance of commercial banks in Kenya. Empirical works of literature have argued that bank size impacted the relationship between board characteristics and financial performance (Nodeh, Anuar, Ramakrishnan & Raftnia, 2016; Terraza, 2015; Saeed, Murtaza & Sohail, 2013 and Kılıç & Kuzey, 2016). However, Nouaili, Abaoub and Ochi (2015) argued that large banks did not profit from economies of scale. This implies that diseconomies came into play hence discouragement. From the foregoing, it is clear there is no concluding evidence on the effect of bank size on the influence of the board characteristics on the financial performance of commercial banks, triggering the need for this study.

1.1.5 Banks Financial Performance

Commercial banks' financial performance has generated great interest both in research and academia. This is due to its contribution to the economic growth of any economy in the world (Ongore & Kusa, 2013). Banks mobilize funds from depositors and savers and direct these funding into areas that drive economic growth and props enterprises (Basel, 2015). Their safety, soundness and stability facilitate good conduct of businesses and stabilizes the financial sector. Therefore, good board governance practices in the banking sector are critical in financial systems that can forestall problems across the industry and the economy at large. According to Basel (2015), the board is tasked to appoint, oversee and approve the performance of the CEO, other key members of the top management and departmental heads. The board is to hold top management accountable and align their actions to financial targets set by the bank. Commercial banks must smoothen commerce and trade functions, facilitate agricultural development and employment generation (CBK, 2013; Kalpana & Rao, 2017).

The Kenyan banks recorded an increase in total assets from 3,627 Billion in December 2017 to 3,940 Billion in December 2018 representing 50.9 percent of the GDP which showed that the sector is key in the economy. On financial performance, ROE declined from 24.6 percent to 20.80 percent respectively (CBK, 2018). This decline is worrying. The Kenyan banking sector is regulated by the CBK Act 488. According to CBK (2013), no shareholder with more than five percent shareholding shall occupy the office of the CEO or be part of the management team. According to CBK (2013), shareholders shall ensure credible directors who add value to the bank are appointed to the board. The directors then become accountable and responsible for the effectiveness and efficient monitoring of top management of the bank. In consideration of the operations of the bank, Prudential guidelines have set a minimum of five board members, more than the two set by the companies act CAP 486.

Among other requirements, the regulator has listed board diversity to include gender, age, academic qualification, relevant banking knowledge, experience and nationality. It is incumbent upon the shareholders to ensure that the board is composed of persons with a viewpoint of diversity and skills. CBK has also directed that directors attend at least seventy-five percent of board meetings to effectively advise, monitor and supervise top management for the bank to improve on its earnings. It is in the interest of the shareholders to ensure board members attend board meetings while discharging their fiduciary duties (CBK, 2013). Directors get updated on the financial results of the bank and its general operations during these meetings (CBK, 2013).

1.1.6 Commercial Banks in Kenya

Commercial banks are essential financial intermediaries to mobilize funds in the banking sector (Li, Madura & Richie, 2013). Commercial banks in Kenya operate under the supervision of the Central Bank of Kenya, Banking Act, Company's Act, and Capital Markets Authority regulations. These bodies issue guidelines from time to time for banks to adhere. Failure to comply, stringent measures would be applied such as suspension from operations, statutory management and/or liquidation. CBK issued the first guidelines in 2000, and then superseded by that of 2006, and later by 2013 guidelines as they incorporate more stringent measures to minimize malpractices, forestall stability and confidence in the industry. The Banking Act CAP 488, Section 33(4) empowers CBK to issue and enforce guidelines meant to instill stability and confidence to investors in the banking industry. CBK (2013) defines corporate governance as the way the affairs and businesses of a commercial bank governed by the board of directors.

The Prudential Guidelines (CBK, 2013) specifies the code of conduct, duties and responsibilities for the shareholders, board members, CEOs, managers and the employees of the firm. New directors are specifically required not to take up board positions until CBK clears them. They should possess personal integrity, professionalism, experience, competence and expertise. CBK expects all directors to undergo Continuous Professional Development (CPD) and induction training

sessions that facilitate the smooth running of the bank. The guidelines further stipulate that banks appoint directors from at least five diverse areas of specialization to enable smooth running, overseeing, advising and supervision of the top management. In a case where a new member is appointed by a controlling shareholder, the board shall exercise caution in discharging its responsibilities. Members should attend seventy-five percent of board meetings. CBK requires that board members disclose useful and relevant information to the shareholders to facilitate the owners to make informed decisions.

The regulator aims at enhancing the stability and resilience of individual institutions. It also aims at promoting an efficient, sound and inclusive banking sector, with a view of establishing a premier financial service in the region (CBK, 2016) and hence, making Kenya a globalized economy (Narwal and Jindal, 2015). Regardless of the measures taken by the CBK, three banks collapsed in the years 2015 and 2016, with a consolidated resource valuation of Kshs 187.9 Billion (Gathaiya, 2017), causing uproar and prompting the Central Bank of Kenya to issue further guidelines meant to institute sanity within the banking sector. Non-adherence to good board governance practices by the board caused the collapse of these banks (Gathaiya, 2017).

Studies on bank management process have shown the importance of services provided by the banking sector in the development of the economy. It is because of this that the government takes center stage to control the sector as it is more susceptible to corporate mismanagement than other sectors in the economy. This is due to the unique business environment in which banks operate, complications of the field in which they operate, diversity of vulnerability and technological advancements (Abu, Akpeh & Okpe, 2016). Similarly, the enormity of danger, own advantages and outright exploitation of positions become more noticeable in the financial sector than any other sector in the economy. The nexus of ailing banks has become a matter of great interest for the Kenyan economy as this routine threatens the entire region. It is for this reason, the study sought to understand how board characteristics (board size, board frequency of meetings, board gender diversity and board share ownership) influence the financial performance of commercial banks in Kenya. These are the basic tools employed by the board to institute controls,

discipline, monitor and advise top management of the bank in managing its operations in order to maximize shareholders' wealth (Fama & Jensen, 1983). A successful board governance mechanism is a basic requirement in attaining and sustaining public confidence in the banking sector. Kenya had 43 commercial banks as of 31st December 2018 as listed in Appendix III.

1.2 Statement of the Problem

Kenya is one of the developing economies with weak legal systems and regulatory framework which requires a strong board characteristic to instill stability and restore confidence of investors in the Kenyan banking sector. Strong board characteristics deters malpractices, detects areas that need further serveilance to improve financial performance of commercial banks. Central Bank of Kenya supervision reports have highlighted a progressive deterioration in the performance of the banking sector as depicted by average ROE which was 26.5 percent in 2009, declining to 20.8 in 2018 (CBK, 2018). The financial results of the banking sector are the barometers of any economy's performance (Katrodia, 2012). Failure by the directors to institute effective and efficient oversight, control and monitoring mechanisms that could have deterred top management from malpractices resulted in banks underperforming and others collapsing exposing weak board governance in the banking system (Mwega, 2009; CBK, 2016; Gathaiya, 2017).

Scholars are yet to establish an acceptable measurement of board characteristics that determine the financial performance of banks (Calabrese, Costa, Menichini, Rosati, & Sanfelice, 2013). However, Romano, Ferretti and Rigolini (2012) suggested that any variable of board attribute could be used to evaluate its influence on the financial performance of a bank. To institute stability and confidence to investors in the banking sector, board size is one of the attributes of the board that would establish efficiency and effectiveness in controlling and monitoring the top management thus aligning their interests to that of the shareholder. By doing so, the financial performance of commercial banks would improve (Abu, Okpeh, & Okpe, 2016). Board frequency of meetings enables directors to get operational information, monitor performance, advise top management and make optimal decisions that

makes them fulfil effectively their monitoring role and thereby improve financial performance of a bank. The presence of female directors would improve effectiveness of the board's control, ability and quality of decisions which would enhance the financial performance of banks (Zhang, Zhu & Ding, 2013). Allowing directors and top management to own shares in the bank would motivate them to make decisions that impact positively on the financial performance of commercial banks (Nyarko, Yusheng & Zhu 2017).

Different studies have applied various theoretical frameworks to establish how board characteristics influence financial results of commercial banks: Wepukhulu (2016) used stewardship, agency, resource dependence and transaction cost economic theories: Talavera, Yin and Zhang (2018) adopted human capital, agency and resource dependence theories while Mohamed and Atheru (2017) adopted resource dependence, stakeholder, stewardship and agency theories. The current study adopted agency, resource dependence, stakeholder, stewardship and transaction cost theories.

Empirical literature review revealed several studies have been done in developed and developing economies adopting different variables. Bashir, Fatima, Sohail, Rasul and Mehboob (2018) found board share ownership had a negative but significant influence on ROE of Pakistan firms whereas Mandala, Kaijage, Aduda and Iraya (2018) found where all board members owned shares of the firm, revenue improved in Kenyan banks. Mbalwa, Kombo, Chepkoech, Koech and Shavulimo (2014) found board size had positively influenced the financial performance of a firm whereas Bebeji, Mohammed and Tanko (2015) found board size had negatively influenced both ROE and ROA of Nigerian banks. Ntim (2015) in South Africa, Akpan and Amran (2014) covered Nigeria and Mbalwa, Kombo, Chepkoech, Koech and Shavulimo (2014) covered Kenya. Ntim (2015) found board diversity had a positive influence on market valuation in South Africa. However, Abu, Okpeh and Okpe (2016) concluded that board gender diversity did not influence Nigerian commercial banks. In Malaysia Johl, Kaur and Cooper (2015) found board frequency of meetings had negatively influenced firm performance, whereas Sherif and Anwar (2015) in the

MENA region found board frequency of meetings influenced positively bank performance.

From the foregoing, it is evident that the findings were not conclusive and calls for the current study as supported by Desoky and Mousa (2012), Gômez, Cortês and Betancourt (2017), and El-Habashy (2019) who called for further studies on board frequency of meetings, board share ownership, board gender diversity and board size. The same was corroborated by Mwega (2009) and Gathaiya (2017) both concluded that weak board governance resulted in failure to institute oversight, advice and monitoring which rendered weak control mechanisms that couldn't deter top management from malpractices. To fill the gap, this study focused on board size, board frequency of meetings, board gender diversity and board share ownership as independent variables and return on equity as the dependent variable. It also integrated bank size as a moderating variable, which had previously not been exhausted and brought into context to add value to the body of knowledge. The study applied a more superior methodological approach by analyzing how independent variables influence financial performance across the banking sector, large banks, medium banks and small banks in Kenya.

1.3 Objectives of the Study

The general and specific objectives of the study were as follows:

1.3.1 General Objectives

The general objective of this study was to establish the influence of board characteristics on the financial performance of commercial banks in Kenya.

1.3.2 Specific Objectives

This study sought to pursue the below listed specific objectives:

i. To determine the influence of board size on the financial performance of commercial banks in Kenya

ii. To assess the influence of board frequency of meetings on the financial performance of commercial banks in Kenya

iii. To ascertain the influence of board gender diversity on the financial performance of commercial banks in Kenya

iv. To examine the influence of board share ownership on the financial performance of commercial banks in Kenya

v. To establish the moderating effect of bank size on the influence of board characteristics on the financial performance of commercial banks in Kenya

1.4 Research Hypotheses

This study addressed the following research hypotheses:

H_{o1}: Board size has no significant influence on the financial performance of commercial banks in Kenya.

H_{o2}: Board frequency of meetings has no significant influence on the financial performance of commercial banks in Kenya.

H_{o3}: Gender diversity in board membership has no significant influence on the financial performance of commercial banks in Kenya.

H_{o4}: Board share ownership does not significantly influence the financial performance of commercial banks in Kenya.

H_{o5}: The bank size has no significant moderating effect on the influence of board characteristics on the financial performance of commercial banks in Kenya.

1.5 Significance of the Current Study

The current study is likely to contribute to the literature and fill the gap by revealing how board characteristics influence the financial performance of commercial banks. The study also would reveal the effect of the moderating variable (bank size) on the influence of board characteristics on the ROE of commercial banks in Kenya. The study will further throw more light as to how board characteristics impact on large banks, medium banks and small banks besides the banking sector. This gives credence to the study as the findings show how the variables relate to each other. Therefore, the findings of the current study could be of particular importance to various interest groups among them; investors, researchers and upcoming scholars, banking sector managers, regulators of financial institutions, bank customers, policymakers and the treasury.

1.5.1 Researchers and Upcoming Scholars

The current study is likely to benefit researchers and scholars with interests in the financial sector from its findings, conclusions and recommendations. The current study at its conclusion is likely to provide opportunities to researchers interested in the furtherance of the subject study area. Empirically, researchers are likely to be able to understand how board characteristics influence bank financial performance, the effect of the moderating variable (bank size) on the independent variables, and their influence on the financial performance of commercial banks. The current study revealed how board characteristics were linked to the banking industry for the years 2009 to 2018. This study will facilitate an understanding as to which of the four board characteristics aptly applied will improve the financial results of the banking sector.

Theoretically, the study adopted theories namely; stewardship, agency, resource dependence, transaction cost and stakeholder, that explain how board characteristics influenced bank performance. Conceptually, the study focused on four explanatory variables namely; board size, board frequency of meetings, board gender diversity and board share ownership, and one moderating variable, bank size, to indicate how they influence financial performance. This will provide new empirical evidence to

bridge existing methodological, conceptual and empirical gaps. Lastly, Kenya being different from other countries both politically, economically and in regulatory mechanism, the current study will provide a further area for researchers to explore in different contexts.

1.5.2 Investors in Commercial banks

Investors in the banking sector are likely to benefit from the findings of this study. Investors will identify banks with desirable board attributes that are suitable to drive the business to enhance their wealth. This study will widen the knowledge of investors as to which board characteristics are likely to increase their wealth through financial performance. When the board discharges its fiduciary duties well, they directly influence shareholders value thereby increase satisfaction to investors and build trust in the banking industry.

1.5.3 Regulators of Financial Institutions

Regulators of the industry are likely to identify areas of interest during board appointments with a view of building a stable and well-performing financial hub in the region. It is likely to equip financial sector regulators (Central Bank of Kenya and Capital Markets Authority) to enhance prudential guidelines with a view of incorporating desirable board characteristics.

1.5.4 Bank Customers

Bank customers will be able to understand the correct attributes that can be put to proper utilization to enhance service delivery. Usually, clients become sensitive to services provided by banks, therefore, with improved customer service, more clients will be attracted to banks that offer better and affordable services. With increased bank clients, there will be more profits resulting in improved financial performance and enlarge financial inclusion. CBK mandates directors to make decisions on behalf of the principal, which is likely to enlarge the customer base and improve profitability. Customers enjoy better services as banks improve services and avail a variety of products to their satisfaction. With improved and satisfying customer

service, more customers will be attracted into banking system thus enlarging customer base leading to improved profits.

1.6 Scope of the Study

The current study covered 43 commercial banks that were in operation in Kenya as of 31st December 2018. The study obtained secondary data covering ten years from 2009 to 2018. The selection of the ten years was to examine the changes implemented by the commercial banks during the period under study and at the same time considered the most recent panel data. A cross-sectional and time-series analysis was adopted to avoid endogeneity problems. The current study analyzed the performance of banks operating under the same legal framework, corporate administration conditions, macro and developmental economic stages, and bookkeeping norms. Banks in a similar nation face the equivalent lawful assurance and institutional limitations consequently maintaining a strategic distance from the endogeneity issues between possession structure and institutional situations. Specifically, numerous studies have demonstrated that distinctions in lawful foundations clarify a significant part of the cross-country ownership differences (Shleifer & Vishny, 1997).

This study directed its attention to board attributes, which have previously been studied individually consistent with applicable theories and identifiable through analysis of the annual statements. The current study focused on board size, board frequency of meetings, board gender diversity and board share ownership. Theoretically, the study used five theories: agency theory, stakeholder theory, resource dependence theory, transaction cost theory and stewardship theory.

The study adopted a census study that considered all commercial banks that were in operation in Kenya as of 31st December 2018. The study omitted banks, which were licensed in 2018, subsidiary, under receivership or on management. This was because subsidiaries were under the management of group directors from a foreign country whose political or business dynamics were not as those in Kenya while those in receivership could not provide complete data as the study was a balanced panel data.

1.7 Limitations of the Study

Limitations of the study are aspects that may affect the results of the study negatively (Mugenda & Mugenda, 2013). The study was restricted to the ten-year period from 2009-2018, which provides extensive understanding of the influence of board characteristics on financial performance of commercial banks in Kenya, as it relates to the most current and available panel data reflecting various developments in the industry. However, this limitation of scope did not affect the robustness of the results.

Further, the study came across banks, which were either branch, under receivership, statutory management, subsidiary, or just started their operations. In this regard, the study dropped nine banks leaving a balance of 34 banks for the study. The number of banks studied was considered adequate to be replicated across the entire banking industry in Kenya as it formed seventy-nine percent surpassing the recommended seventy percent.

With the challenges of data accessibility and availability, the study adopted variables considered to be measurable, accessible, reliable and accurate that can minimize measurement and interpretation errors in the final report. Based on this, the study sourced and perused annual reports and statements from the bank supervision department at CBK or individual banks' websites. The study collated data from individual banks, sourced from the supervision department at CBK. To overcome these limitations, the study recommended further research.

Since the study only covered the effect of board characteristics on the financial performance of commercial banks, it failed to incorporate other financial system players such as microfinance banks, insurance firms, pension firms, investment banks and Savings and Credit Cooperatives. The findings may not be generalized to other financial system players in Kenya. However, this limitation informs areas for further study recommendation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter of the study reviewed theoretical and empirical literature involved in similar studies to support the inter-relationship between board characteristics and financial performance of commercial banks in Kenya. The areas which were covered include theoretical review, a conceptual framework that illustrated the linkage between independent variables: board size, board frequency of meetings, board gender diversity and board share ownership, with bank size as a moderating variable to the dependent variable, financial performance of commercial banks, empirical review, critique of the existing literature and the research gaps.

2.2 Theoretical Framework

This section reviews theories, which relate to board characteristics and financial performance of banking institutions in Kenya. A theory is defined as a framework with related ideas, definitions and suggestions that are progressed to clarify or foresee marvels (Cooper & Schindler, 2011). Theories and models that give relationship records of the world permitting one to cause prescient cases under specific conditions, to carry applied intelligence to an area of science and rearrange our comprehension of the world viewed as acceptable (Wepukhulu, 2016). Scholars have developed several theories in support of board characteristics: agency theory, transaction cost theory, stewardship theory, social contract theory, legitimacy theory, resource dependence theory, transaction cost theory, stakeholder theory and political theory (Yusoff & Alhaji, 2012; Abid, Khan, Rafiq & Ahmed, 2015; Peters & Bagshaw, 2014; Nyarko, Yusheng & Zhu, 2017). The theoretical framework upon which this study was anchored was agency theory complemented with stakeholder, resource dependence, transaction cost and stewardship theories (Peters & Bagshaw 2014; Nyarko, Yusheng & Zhu 2017) which provide a variety of information asymmetry that the agent (management) and board members are prone to exercise interests likely to hurt the shareholder (principal) and other interested parties (Fama

& Jensen, 1983). These theories are the basis upon which board members make effective decisions and exercise their mandate to supervise, direct, control, advise, monitor and manage top management with a view of enhancing shareholder wealth.

2.2.1 Agency Theory

The proponents of agency theory were Jensen and Meckling (1976), who discussed how to cure the challenges faced by the owners (principal) and management (agent) as agency costs. Therefore, agency theory was based on the principal and agent relationship. Agency costs are the monitoring, supervision and directing expenses incurred by the owners of the business to align the manager's interests to that of the business on their behalf. The business owner appoints directors to oversee the operations of the business. The board in turn recruits, appoints, directs, supervises and monitors the activities of top management on behalf of the owners. There are three basic groups with varied concerns, the first being the owners of the firm who are concerned with the growth of their wealth and increase streams of income flow. Therefore, their concern will be on the dividend received and the future stability of the firm. The second group consists of the managers who are recruited, appointed and remunerated to run the firm on behalf of the board. This group has no direct interests as compared to those of the owners of the firm. Their concern will be what position to hold in the firm and the remuneration package. The third group comprises debt providers, whose interest will be how best financially the management runs the firm.

Agency theory mitigates the conflict that exists between the agent and the principal (Fama & Jensen, 1983). This theory focuses on how to align the interests of the management (agent) to that of the owners (principal) of the firm. Further, there exists information asymmetry, where the owners lack competencies in managing the business (Stiglitz, 1985). As businesses expanded in the 1990s, the largest corporations were in the hands of the public (Shleifer & Vishny, 1997). Resulting in the world's largest scandals, Enron, Eurotunnel and WorldCom raised concerns on venture capitalism and business strategies jeopardizing the financing and saving

systems through which the success of businesses was dependent (Akpan & Amran, 2014).

Eisenhardt (1989) argued that there arise situations where the principal and agent are in conflict. Agency theory becomes handy in revealing how interests of the principal and that of the agent are divergent and the means through which they can be converged by placing mechanisms in place that bring them together to serve the firm's interests through adequate compensation of the management (Beltratti & Stulz, 2012). Jensen and Meckling (1976) argues that agency theory was in support of delegating and aggregating the task of controlling, supervising, directing, monitoring and application of compensating mechanism to the board and top management with a view of aligning their interests that spurs growth in the financial performance of the firm.

Filatotchev and Wright (2011), posited that agency theory was the mechanism that bridges the gap that exists between the agent and the principal. This arose as investors sought the services of the skilled and technical personnel to manage businesses on their behalf (Yuvaraj, 2011). Consequently, investors had to appoint suitable board members to oversee operations of the businesses on behalf of the principal (Malaysian Corporate Governance Blueprint, 2011). As a result, the board had to execute their fiduciary duties and at the same time represent the interest of the investor (Abu, Okpeh & Okpe, 2016). As the ultimate decision-making organ, directors have a professional duty to institute mechanisms and appropriate monitoring systems that minimize agency problems (Ongore *et al.*, 2015).

With the expansion of businesses, it became impossible for the directors to manage the businesses (Ongore *et al.,* 2015). In the process of managing the business, the agents pursue sub-optimal decisions characterized as insider dealings, adverse choices and moral hazards (Wepukhulu, 2016). Further Abu, Okpeh and Okpe (2016) intimated that agency theory assists the board in monitoring, supervising and controlling top management on behalf of the owners of the firm. Carrying out these activities is dependant on factors such as board gender diversity, size of the board,

board meetings and board share ownership. These attributes of the board will therefore result in superior financial performance of commercial banks.

Despite the popularity enjoyed by the agency theory, some scholars have brought to fore some limitations (Shleifer & Vishny, 1997). First, agency theory assumes that the presence of the contract is a panacea to the principal-agency problems. The second limitation is that the principal is concerned with wealth maximization while their role is constrained within the firm. Third, contractual agreements are usually based on a limited period or its future is unlimited. Fourth, the responsibilities of a director are limited to recruitment, monitoring and directing, whereas their future is unclear also. Top management of the firm who are much sought for have a conflict of interest with the shareholders in making operational decisions (Wepukhulu, 2016).

Shareholders delegate to the directors the responsibilities of overseeing the top management of the firm. The board subsequently hires suitable top management and establishes the mode of compensation with a view of aligning the interests of top management to that of the firm which maximizes the wealth of the shareholder. Figure 2.1 depicts the role played by the principal and the agent.

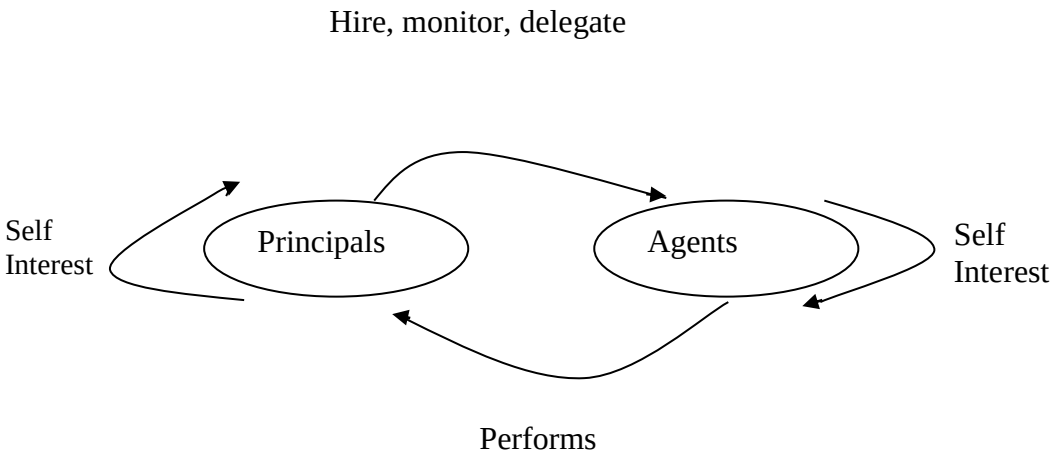

Figure 2.1: The Agency Model (Abdullah & Valentine, 2009)

CBK Prudential Guidelines requires the board to craft company charter that itemizes its mandate, sets out clear roles, powers, responsibilities, policies, functions and issues which are a preserve of the board. A director shall put clear any matter bordering on conflict of interest to the board. The regulator further demands that commercial banks appoint at least five directors who understand the complexity, operations, scope and size of the bank (CBK 2013). That means that there should be a clear delineation of roles between the board and the management. Owners of the banks are responsible for appointing the board. Therefore, some relationship between board characteristics and the financial performance of a firm will be expected.

2.2.2 Resource Dependence Theory

Pfeffer and Salancik (1978) developed resource dependence theory arguing that directors should facilitate connections to the company in obtaining resources required by the firm. Through interdependence, directors link management of the firm to sources or avail essential materials to the external environment (Hillman, Canella & Paetzold, 2000). Resources such as guidance on accounting services may require the firm to appoint a director who is conversant with accounting matters which could otherwise be expensive (Johnson, Daily & Ellstrand, 1996). Through board meetings, directors can identify sources, direct and monitor utilization of these resources of the firm optimally. The board ensures the survival of the firm (Singh, House & Tucker, 1986). Directors of a firm are grouped into four categories: business experts, support specialists, insiders and community influential. First, community influentials are directors who are influential within the community such as clergy, university lecturers and leaders of the community in which the firm operates to provide linkages. Second, insiders are previous or existing employees of the firm who provide specialised services such as legal, accountancy, general strategy and directions to the firm. The third group are the support specialists who provide specialized services such as legal, accountancy, banking and business acumen. The fourth group comprises of business experts who are either current or previous top management and directors of other corporations to provide specialized skills to the firm.

When a firm owns its resources, it raises reliability to supply to the customers of the company (Pfeffer, 1972). Owning the source of supply of materials lowers reliance on outside suppliers (Pfeffer & Salancik, 1978) and eventually reduces expenses incurred by the firm in obtaining resources externally (Williamson, 1984). This ultimately aids in the survival of the firm (Singh, House & Tucker, 1986). Nicholson and Kiel (2007) proposed facilitation of acquisition of resources to the firm contributes positively to the firm's financial performance. Therefore, resource dependence theory is concerned with how board characteristics facilitate management to access valuable resources of the firm. It shows how they form the linkages to obtain critical resources to sustain the firm's financial performance (Ntim, 2015). Hillman, Shropshire and Cannella (2007) opined that firms that have specific environmental dependencies have a high likelihood to appoint female directors.

Resource dependence theory has some limitations. Due to the expansion of institutions, directors have limitations to undertake day to day running of the firm. Hence, the board recruits, trains, develops staff, provides advice and delegates the running of businesses to suitable top management of the firm. This is faced with challenges of agency conflict, where the manager develops their interest that overrides increasing the wealth of the shareholder. Resource dependence theory portends that directors have the know-how and experience that can be tapped to facilitate monitoring activities of top management through board frequency of meetings with a view of enhancing shareholder's wealth. Therefore, a positive relationship between board frequency of meetings and the financial performance of a firm is expected.

Through resource dependence theory, directors make it possible for the management to communicate to external companies by providing linkages to personalities of the community who would facilitate the smooth running of the firm. Through professional and social networks directors enable management to interact with personalities with whom they know in their profession (Johannisson & Huse, 2000). The appointing authority of a director needs to consider the ability to facilitate

accessing suppliers and customers to match competitors, thus assuring a reliable supply of resources (Carter, Simkins & Simpson, 2003).

CBK Prudential Guidelines require commercial banks to appoint directors who attend board meetings and participate in board deliberations to achieve desired results. The regulator requires directors to attend at least 75 percent of board meetings in any financial year. Directors can either attend meetings through video calls or physical attendance (CBK 2013). This is to enable board members to effectively participate, contribute and discharge their fiduciary responsibilities to the bank's desired goals. Naseem et al, (2017) opined the more meetings held by the board indicates seriousness and level of control, eventually enhancing shareholder value.

2.2.3 Stakeholder Theory

Out of the seminal paper, Freeman (1984) ascertained various aspects of the stakeholder theory. Basing on the argument of normative groundings, the proponents of stakeholder theory came up with various groups who have direct or indirect interests in the firm. Stakeholder theory was important in ascertaining the framework of evaluating the impact of stakeholders on attaining financial results of the firm. The board and management need to align the interest of major stakeholders to that of the firm thus making them feel as though they own part of the firm. That is when they will support the firm in pursuit of its goals and objectives. If the interests of the stakeholders were not properly identified and managed amicably, conflicts will arise and impact negatively on its financial performance.

Jensen (2001) developed further stakeholder theory by arguing that top management of the firm should incorporate the interests of other stakeholders for its economic survival. Stakeholder theory encourages stakeholders to participate in various levels of decision-making. Their participation makes them feel integrated into the firm's financial success. Stakeholders are groups or individuals capable of substantially affecting the welfare of the firm. They are those with monetary cases and otherwise, for example, government authorities, workers, clients and networks. The motivation behind stakeholder theory was to bring into center groups whose activities influence

the firm. Jensen (2001) further expressed that the achievement of the firm ought not to exclusively be founded on the growth of investors wealth, but how they integrate stakeholders in their decisions. The idea of stakeholder theory is to concentrate on all the intrigued bunches with regard to the business rather than concentrating on the investor (Mallin, 2007). Stakeholder theorists suggest that board characteristics should use its networks to ensure business decisions were beneficial to all interested parties (Abdullah & Valentine, 2009). Accordingly, directors were to act in the best interest of the stakeholders who would in turn provide support to management (Mallin, 2007). Through monitoring top management, directors ensure firms were profitable and protected assets in the best interest of the stakeholders (Abdullah & Valentine, 2009). Stakeholder theory considers the ability of a company to maintain the influence of the interested parties of the firm (Wheeler & Davies, 2004).

Harrison, Bosse and Phillips (2010) posited that when management of a firm provide more resources in fulfilling the demands and needs of stakeholders, the stakeholder would simply retain their willful participation to the benefit of the firm. As indicated by Zhang, Zhu and Ding (2013), a greater existence of females in directorship may make the board meet the desires of interested parties of the firm resulting in improved financial performance. Smith and Verner (2006) as cited in Ongore et al., (2015) alluded female directors were considered to understand markets, business environment and bring onboard better images thereby fulfilling the interests of the stakeholders which diffuses the would-be conflict.

Stakeholder theory has some challenges since personal interests override stakeholder interests. Therefore, with the existence of personal interests, stakeholder theory cannot explain whether there exists a conflict of interest or not. It is therefore worth noting that maximization of the shareholders' returns isn't the sole reason, rather the board ought to take into account the interests of other parties in their decision-making process. This calls for a positive connection between board gender diversity and the financial performance of a firm.

Donaldson and Preston (1995) opined that stakeholder theory is concerned with the top management decision and how they consider the interests of each group. Figure 2.2 itemizes the stakeholder in perspective.

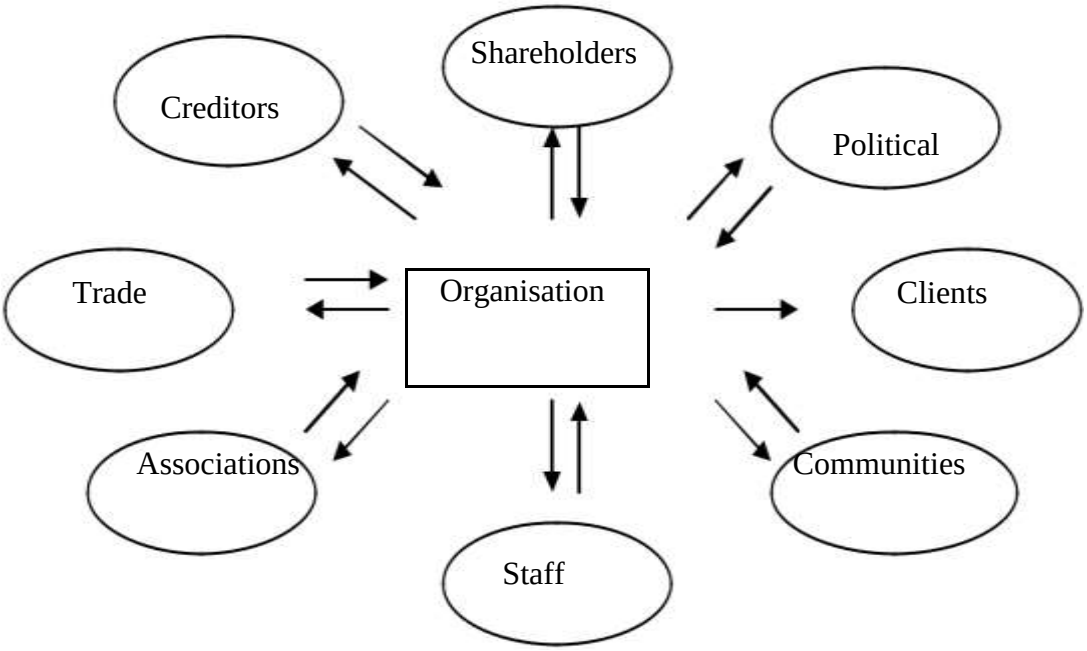

Figure 2.2: The Stakeholder Model (Donaldson & Preston, 1995)

In as much as stakeholder theory has benefits, it also has a bad side. It has exerted pressure on the management by bringing on board stakeholders who lack proper guidelines in solving conflicting matters that affect the firm. This has resulted in divergent measurements of the performance of the management. Stakeholder theory has benefits that satisfy employees resulting in enhanced production; employees would acquire talent from the positive image the firm will be enjoying. Financiers will also enhance their investments once impressed by the firm and more customers referred to patronize the firm and consume much of their produce.

Through the appointment of qualified female directors, they would facilitate linking commercial banks with the stakeholders such as communities and customers, who

can promote the firm's reputation resulting in increased customer patronage (Mahadeo, Soobaroyen & Oogarah-Hanuman, 2012; Wellalage & Locke, 2013). Stakeholder theory reveals that board gender diversity can result in improved financial performance of commercial banks through linking an organization to its external environment and secure critical resources, including skills, business networks, glory and authenticity (Arnegger, Hofmann, Pull & Vetter, 2014). Lückerath-Rovers (2013) contends that female chiefs were probably going to settle on better choices which result in improved financial performance of a bank. Therefore, boards with more female directors were likely to be better informed due to increased channels of communication than non-diversified boards.

CBK Prudential Guidelines require commercial banks to diversify their board membership. Diversification of the board entails appointing to the board in consideration of gender, technical expertise, experience, academic qualifications, relevant banking knowledge, nationality and age (CBK, 2013). The current study focused on board gender diversity as an attribute, which would embrace stakeholder's interests.

2.2.4 Stewardship Theory

Donaldson and Davis (1993) developed stewardship theory. Stewardship theory argues that when top management wee given the freedom to manage the firm with minimum interference from outside, they would transact on behalf of the company as responsible stewards whose interest was to enhance the wealth of the shareholder. They will align their interest to that of the firm while pursuing the objectives of the bank. Their actions will eventually be beneficial to the shareholders. In this regard, the board and the management pursue the interests of the firm with minimum if not nil conflict. The agents get motivated and aim at self-actualization as they set the interests of the firm ahead of their own. Davis, Schoorman and Donaldson (1997) advocated for delegation, autonomous and empowerment of senior and top management in decision making that minimize costs which results in improved profitability as owning a share in the company motivates management.

Stewardship theory becomes helpful where trust fails to exist as an option to agency theory, where fondness to ethical behavior and authority is geared towards the financial performance of a firm (Clarke, 2004). Board members motivate management with a view of discharging their tasks within their job description through the execution of challenging assignments and the urge to exercise authority and responsibilities that make management work towards attaining firm objectives (Donaldson & Davis, 1991). In addition, stewardship theorists argue that there existed the need for the board to put in place structures that were harmonious with the objective which bolstered the wealth of the shareholder. Therefore, in discussing the enhancement of owners' wealth, stewardship theory becomes handy (Clarke, 2004).

Stewardship theory clearly spells out that the board bears the responsibility of care and that they allow management to own shares of the firm with the sole aim of motivating management to effectively and efficiently execute their responsibility to enhance the wealth of the shareholders. Jensen and Meckling (1976) found that when more shares are held by the management their decisions will be aligned to that of the firm and will eventually influence positively the financial results of the firm. Therefore, board share ownership will serve as a mitigating factor in reducing agency costs. Chen, Cheung, Stouraitis and Wong (2005) found board share ownership had a positive impact on the financial results of a firm.

Nyarko, Yusheng and Zhu (2017) posited that the involvement of directors in owning shares enhanced decision-making process which guarantees the sustainability of the bank. They further argued that contrary to the agency theory, with the support from the board, the CEO will execute faster and without fear thus enhancing the wealth of the firm. Stewardship theory has some limitations. Management are human beings who develop conflicting interests which override the interests of the firm. Stewardship theory operates under the premise that board members have the expertise, access to current information and were favored with a depth of knowledge facilitating them to make decisions resulting in improved financial performance of a firm (Kiel & Nicholson, 2003). Banks were required to notify and seek approval from CBK for any share transfer in excess of 5 percent. The regulator states that each

year an evaluation report be filed with the CBK on the suitability of each director to serve on the board. Evaluation can be outsourced or reviewed by other peers. Each director is expected to carry out a periodic review to determine that the board discharges its mandate and responsibilities appropriately, taking into consideration the existence of controlling shareholder. A director whose shareholding is in excess of 5 percent is constrained to be a part of the management or CEO of the bank.

From empirical evidence, two issues arise out of the agency problem: first being the owners of the firm and the top management appointed to manage the firm on behalf of the owners. The other challenge is when top management have divergent interests from that of the owner, controllers and the external shareholder. Agency problems were partly mitigated when management was allowed to own shares of the firm. When top management owns shares, they make decisions which impact businesses positively, thus improving the financial results of the firm thereby reducing agency costs. Management knows that any adverse decision made will adversely affect their wealth and therefore will align their interests to that of the firm. In doing so, the interests of the owners and management converge. Therefore, a positive relationship will be expected between board share ownership and the financial performance of a firm. Stewardship theory had some challenges such as an unrealistic needs model; simplification and unrealistic role of the management and usually, the CEO is not the chairman. Stewardship theory distinguishes the roles of the principal and agent; facilitates strong command and unity of direction; employees were motivated, harmonized, and clarifies the structure of the CEO.

2.2.5 Transaction Cost Theory

Williamson (1986) developed transaction cost theory. The theory argues that firms should carry out activities efficiently which minimizes wastage. Activities of the firm should ensure that the interests of the beneficiaries were catered for promptly, with minimum expenses and without waste. The theory is cognisant of risks involved in these transactions more so in the delegated authority by the shareholders to the board who in turn delegate to top management whom they have recruited competitively.

These transactions, once committed, become costly to reverse as they involve some economic loss (Williamson, 1975).

Firms incur transaction costs when dealing with either internal or external groups in the company. This cost may take the form of procurement of supplies or in the search to ascertain the most competitive supplier of material. The management must get markets to sell their produce profitably. For the firm to obtain its input materials, convert and sell its products competitively entirely depends on its execution processes. Most firms revert to internalize these transactions to minimize uncertainties and business risks. In doing this, businesses make decisions whether to produce internally or outsource (Allen, 1999).

Three variables; frequency, asset specificity and certainty influence the decision to incur costs. These three ingredients dictate top management and the board as to whether to produce or outsource materials and services consumed by the firm. This is achieved through the direction of the board in controlling, monitoring, compensating and advising top management. Therefore, when the board and top management were properly motivated, their interests became subsidiary to that of the firm, and decisions made resulted in reduced transaction costs thereby improved financial results (Tricker, 2012).

This research was anchored on agency theory as it aided the study in as far as principal-agent relationship was concerned, resource dependence theory where commercial banks applied connections, expertise and experience of directors to avail resources used by the bank. Further, stakeholder theory which considered all stakeholders of the banking sector such as investors, suppliers, employees and creditors, and finally stewardship theory which considered whether to allow or not top management to own shares of the bank as a motivator were used. The best financial results were likely to be associated with trusted and empowered management. Transaction cost theory examined the growth of commercial banks in terms of assets and the introduction of cost-effective products which enhanced profitability. Thus, these five theories become beneficial in as far as effectiveness and efficiency of controlling, supervising, advising and monitoring functions of the

board. However, most of these theories were expected to complement one another and not to substitute agency theory (Peters & Bagshaw, 2014).

2.3 Conceptual Framework

A conceptual framework is a diagram or a construct that explains the underpinnings of the theory base (Wepukhulu, 2016). Therefore, conceptual framework or conceptual model provides a visual presentation of the link between the research variables. Conceptual frameworks assist to explain the connections between the variables and helps to review, scrutinize and test the results of the research (Durham & Stokes, 2015). It helps in integrating and clarifying philosophical, pragmatic and methodological aspects of the doctoral thesis to be viewed as a research-based discipline (Sykes & Piper, 2015). The current study had board size, board frequency of meetings, board gender diversity and board share ownership as independent variables; bank size as moderating variable and ROE as dependent variable (Naseem *et al*., 2017; Terjesen, Couto & Francisco, 2015; Letting, Aosa & Machuki, 2012).

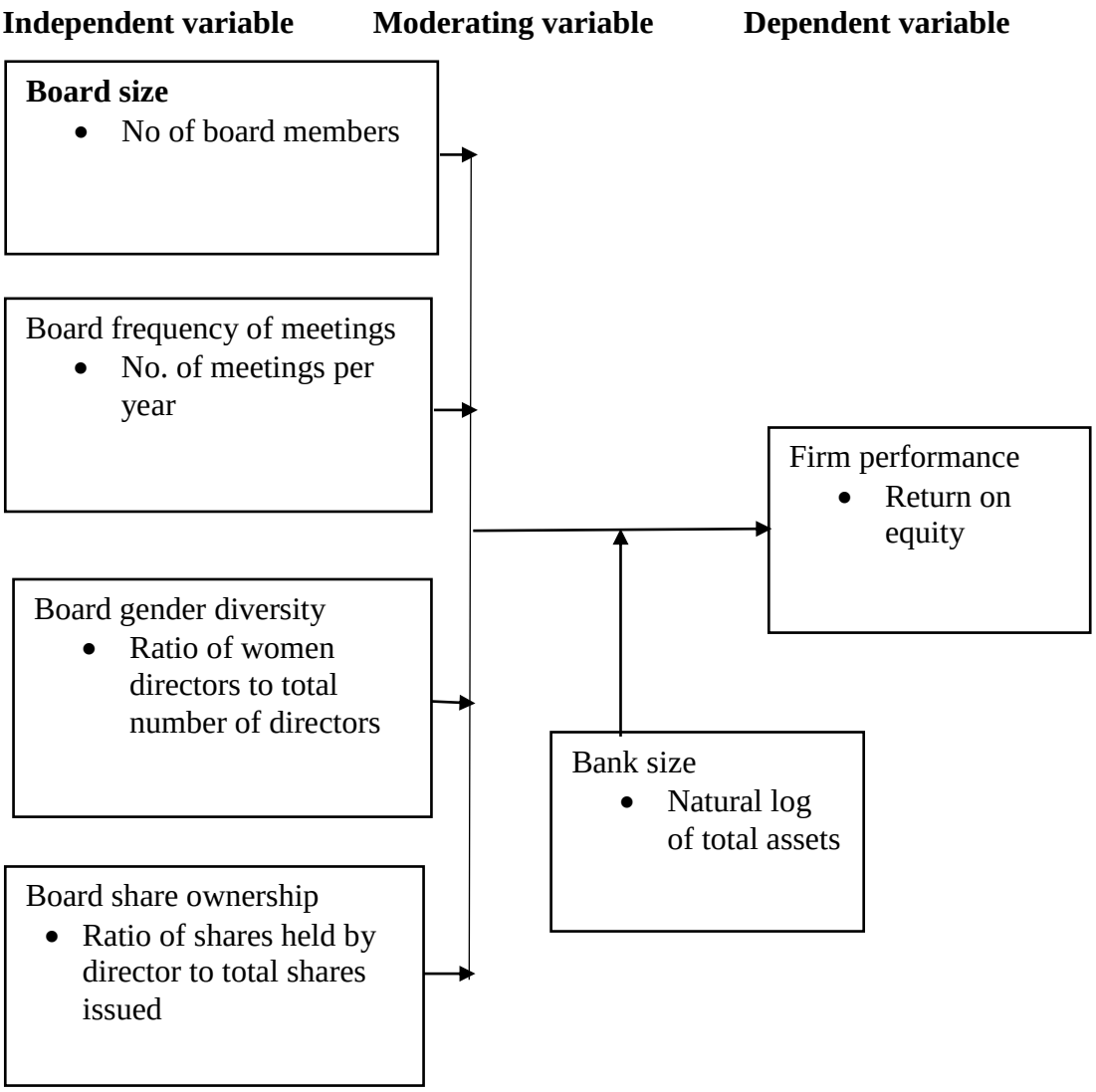

Figure 2.3: Conceptual Framework

Independent variables were those connected to the agency theory and board characteristics as depicted in the conceptual framework (figure 2.3) whose measurement was as follows: board size was measured by the number of directors appointed and sitting on the board in a year (Adebayo *et al.,* 2013), board frequency of meetings was measured as the number of sittings of the board in a year (Naseem *et al.,* 2017), board gender diversity was measured as a ratio of female directors in the board to all the directors who sit in the board (Ongore *et al.,* 2015), board share

ownership was measured as a proportion of the number of shares held by board members to total shares issued by the bank (Akpan & Amran, 2014).

The moderating variable, bank size, was proxied as total assets of the bank revealed in the annual reports and statements of the bank measured natural log of bank's total assets scaled to Shs 1 Billion (Borlea, Achim & Mare, 2017). The dependent variable proxied as return on equity was measured as net income which is profit after tax divide by shareholder's equity (Pathan & Faff, 2013). Several board characteristics have been suggested by various researchers to address the principal-agent challenges that exist between the shareholders and the management of the bank while focusing on how to improve financial performance and enhance the wealth of equity holders. Applying these board characteristics would line up the interests of top management to that of the bank, thereby mitigate agency costs. The following section discussed in detail these board characteristics enumerated in the conceptual framework figure 2.3.

2.4 Empirical Literature Review

Directors of the board play a critical role in selection, appointment, controlling and monitoring top management and can be seen as a bridge connecting top management and the shareholders (Dalton, Daily, Ellstrand and Johnson, 1998). They are the top organ in making decisions of the firm as they intend to protect and enhance shareholders' wealth, evaluate the efficiency of management, and look after the financial performance of the bank. Fama and Jensen (1983), identified critical functions of the board: selection, appointment, advising, monitoring, ratifying, implementing and initiating which were undertaken while making decisions. Therefore, the board is tasked to monitor and ratify resolutions, supervise activities of top management. This section presents a review of the empirical literature on how board characteristics influence the financial performance of commercial banks.

2.4.1 Board Size and Financial Performance

Yasser, Entebang and Mansor (2011) studied how board characteristics influence financial performance of a firm. They studied thirty listed firms at Karachi Stock Exchange (KSE- Pakistani) covering two years, 2008 and 2009. From different

industry sectors (oil and gas, banking, chemical, automobile, telecommunication, textile and insurance), secondary data on index and turnover was obtained from selected listed firms. The study used profit margin and ROE as dependent variables and applied agency and stewardship theories. The study developed an economic model to regress board size, audit committee, CEO/Chairman duality and board composition as explanatory variables. The study found that board size, audit committee and board composition had a positive and significant influence on the profit margin and ROE; CEO/Chairman duality had no influence on ROE and profit margin. The findings were consistent with previous studies. This study had some limitations. This study was carried out in Pakistan and therefore a different economic environment from the Kenyan perspective. The other limitation is that the study consists of firms from all industries of the economy as opposed to the current study, which focused on the commercial banks.

Adebayo, Olusola and Abiodun (2013), examined how corporate governance influenced organizational performance in Nigeria. The study sampled thirty institutions listed at the Nigerian Stock Exchange, made up of fifteen financial and service corporates and fifteen manufacturing institutions. The study obtained secondary data from annual reports of the institutions for the six years between 2005 and 2010. Panel data comprising cross sectional and time series was applied. This study was anchored on agency theory. CEO-Duality, board independence and board size were explanatory variables whereas ROE and EPS were dependent variables. Applying multiple regression, the study concluded that board independence had a positive and significant relationship with both ROE and EPS whereas board size and CEO-duality had negative but significant influence on both ROE and EPS of a firm. This means that the larger the board the lower ROE will be reported. This is because the larger the board size, the more and increased cost of coordination and therefore creates communication gaps. In consideration of the CEO-duality, it was found to negatively impact efficiency of board members due to the fact that the CEO and the chairman of board of directors was the same resulting into compromising the monitoring and supervision function of the board resulting to sub-optimal decsions made. Board independence had a positive and significant influence on ROE. This implied that the more independent directors were in the board the greater financial

performance made by the firm and more effective monitoring, supervising and directing management taking into account interest of the shareholder. The study suggested separation of office of the CEO and that of the chairperson in order to institute checks and balances in the operations of the company. The study focused on a mixture of thirty firms whereas this study focused on all commercial banks. The study was carried out in Nigeria whose business environment is different from that of Kenya.

Bebeji, Mohammed and Tanko (2015) surveyed five listed Nigerian commercial banks from Nigerian Stock Exchange covering nine years 31st March 2007- 31st March 2015. They examined how board size and board composition influenced financial performance proxied by ROA and ROE of Nigeria banks. They obtained secondary data from annual reports of the banks. Both cross-sectional and time series data was collected and analysed using multivariate regression model and non-probability methods. The study obtained secondary data on board composition and board size as independent variable and ROE and return on asset as dependent variables. ROA was a ratio of profit after tax to total assets and ROE as a ratio of profit after tax to total equity. Board composition was a mix of inside and outside directors. The study used stakeholder theory, stewardship theory and agency theory to conclude that board size had negatively but significantly influenced both ROE and ROA of commercial banks. That meant that increase in board size resulted to reduction of ROA and ROE. Whereas, board composition had a positive and significant influence on ROA and ROE of Nigerian listed commercial banks. Overally board characteristics had a significant influence on bank performance. This study was carried out in Nigeria, which had a different economic environment and covered listed commercial banks.

Uwuigbe and Fakile (2012) evaluated how board characteristics influenced financial performance of the Nigerian commercial banks. This study sourced secondary data from annual accounts and reports of listed firms at Nigeria Stock Exchange Fact Book for the years 2000 to 2008 on board size, board composition, level of disclosure and board equity to measure corporate governance as independent variable and ROE proxied for the financial performance. Collected data was both cross-

sectional and time series while anchoring the study on agency theory, stewardship and stakeholder theory. Descriptive statistics reveal an average of 5 percent of ROE and standard deviation of 4.7 percent. The result showed a maximum and minimum values of ROE as 22 percent and 1 percent respectively. The average board size was thirteen board members, considered moderate with a maximum of 19 members and a standard deviation of 2.48. This implied that Nigerian banking sector had more or less the same board size. The study adopted regression model to analyse the variables and found board size and board composition had a negative but significant influence on ROE. However, board equity and level of disclosure had a positive and significant influence on ROE of Nigerian banks. This means that smaller boards were more effective than larger ones. The bigger the board size the more difficult it becomes to make decisions. The timely scope of the study from 2000 to 2008 does not reflect the current economic conditions hence the need for this study to fill the gap.

Mohamed and Atheru (2017) studied the effect of board characteristics on financial performance of mobile service provider in Kenya. The study collected primary data using questionnaires from 96 middle and top-level management of Airtel Kenya on board gender diversity, board education, board experience, board ethnicity and board size as independent variables and ROA as dependent variable. The study adopted multiple regression models and used SPSS as statistical software to analyze cross-sectional data. Applying stakeholder theory, stewardship theory, agency theory and resource dependence theory the study concluded board size had negatively but significantly influenced financial performance: board gender diversity had no influence on financial performance of the firm; board education, board ethnicity diversity and board experience had influenced positively and significantly financial performance of a firm. This finding showed that an increase in board size reduced profits; an increase or decrease of board gender diversity had no impact on the profit while the educated board members was likely to improve profits. The study also concluded that financial leverage affected both corporate governance and firm performance. This study focused on mobile service provider.

Mbalwa, Kombo, Chepkoech, Koech and Shavulimo (2014) examined how board characteristics influenced performance of sugar manufacturing firms in Kenya. The

study covered nine sugar firms for which they adopted convenience sampling. They carried out a cross sectional sample survey. They used correlational survey design and applied agency theory and organisational theory. Primary data was collected on board size, top management characteristics, stakeholder communications, shareholders' communications, board characteristics and continuous disclosures as independent variables and market share, profit, output in units and sales growth as dependent variables while, legal aspects and economic conditions were adopted as moderating variables. Data was analysed using multiple regression models and SPSS, a statistical software and found board size, board characteristics, top management, continuous disclosures and shareholders' communication policy had positively influenced financial performance of the sugar industry. The study recommended further studies on other variables.

Aduda, Chogii and Magutu (2013) assessed the significance of board characteristics on financial performance of listed firms at Nairobi Securities Exchange for the years 2004 to 2007. Secondary data was collected to ascertain how board size, outside directors, CEO duality, inside directors and board composition (as independent variables) influenced financial results of listed firms at Nairobi Securities Exchange. The study used TBQ and ROA to measure financial performance as dependent variable. TBQ is a summation of market value and book market value of debt divided by book value of total assets. ROA was quantified using profit after tax divided by book value of total assets. The study used level of leverage, firm size and asset structure as control variables. Asset structure was represented as a proportion of fixed assets to total assets; firm size was measured as book value of total assets while firm leverage was measured as a proportion of total debt (both long term and short term) to book value of company total assets. The study adopted econometric model and descriptive statistics to analyse panel data using SPSS statistical software. The study was anchored on agency theory and stewardship theory. They applied regression model analysis which revealed that CEO/chairman duality and inside directors had a negative but significant influence on ROA whereas board size had a positive and significant influence on ROA. Outside directors had no influence on ROA. For the part of TBQ, board size, CEO duality and inside director had no influence. Due to various competing theories, the ratio of outside directors became

negative but significant when measured with TBQ whereas the size of the board become positively and significantly influenced ROA. This study focused on the listed firm at Nairobi Securities Exchange.

2.4.2 Board Frequency of Meetings and Financial Performance.

Gambo, Bello and Rimamshung (2018), examined how board characteristics influenced financial performance of the Nigerian Stock Exchange. They sampled 10 listed firms in consumer goods sector for a period of ten years (2006-2015). The study obtained secondary data from annual reports and statements sourced from the Nigerian Stock Exchange fact book. Panel data on board frequency of meetings, board size and board composition were used as independent variables whereas ROA was a dependent variable. The study adoped descriptive statistics and multiple regressions to analyse data using STATA (Version 11). Gambo, Bello and Rimamshung (2018) used three theories in the study, stakeholder, agency theory and stewardship theory and found board frequency of meetings having no influence on ROA, board size had negatively but significantly influenced ROA and board composition was a positive and significant influence on ROA. This means the more the meetings inhibited independence of directors in conducting effective oversight over top management, smaller board sizes were more effective than larger boards while board composition was identified with improved ROA.

Johl, Kaur and Cooper (2015) examined how board characteristics influenced firm performance in Malaysia. Sampling 700 Malaysian public listed corporations in the Bursa Malaysian Stock Exchange. Cross-sectional secondary data was obtained from OSIRIS database for the year ending 31 December 2009. The study applied ordinary least squares (OLS) regression model to analyse how board frequency of meetings, board accounting expertise, board size and board independence influenced ROA of a firm. ROA was adopted because Malaysian economy is not developed like that of USA. From descriptive summary, generally independent variables had a positive correlation with ROA. The study revealed that F-statistic was statistically significant at 1 percent level and R^2 was around 50 percent. Board independence had no influence on ROA. This meant that independent director's involvement in board had

no influence on ROA. Frequency of board meetings had a negative influence on ROA whereas board size and board finance expertise had a positive and significant influence on financial performance. This implies that more meetings held may lead to decisions on resources utilization being sub-optimal thus impacted negatively on ROA of Malaysian listed firms. The results further meant large boards facilitated creating value to the business through efficient monitoring on top management. The same was witnessed when board members had relevant accounting knowledge as they serve the interest of the shareholder and facilitated better board oversight. The study observed that the Malaysian government had taken necessary measures to strengthen boards through composition and improved on board structures to facilitate productive board meetings. Through these measures, better financial performance which created value to the shareholders who had appointed and entrusted the director to guide management was achieved.

Arora and Sharma (2015) studied the impact of board characteristics on financial performance of manufacturing firms in India covering 1,922 listed firms in the Bombay Stock Exchange. Secondary Panel data was obtained on board meetings, board independence and board size as independent variables and sales, leverage, institutional ownership and firm age as control variables and TBQ, stock returns, ROE, ROA and net profit margin as dependent variables covering ten years from 2001 to 2010. Applying Poisson and pooled regression method to analyze collected secondary panel data. The study was based on agency theory and stewardship theory. Their analysis revealed that in the year 2001, on average board size was between four and five while most firms were not having independent directors in their boards. The firms had four to five board meetings in a year. Year 2005 revealed that a notable increase on independent directors to fifty percent of the board members while some companies exhibited up to eighty percent. The size of the board also increased to eight. The number of independent directors increased to fifty percent in year 2010. However, the number of meetings remained five. The result further indicated that more board meetings, larger board size and independent board members resulted to extra cost to the firm. This study reaveled that board characteristics influenced firm performance on the Indian firms. The study recommended for further studies in the area of board characteristics especially in developing nations like Kenya.

Sherif and Anwar (2015) examined how board characteristics influence performance of banks in emerging economies MENA Region over the period 2000 to 2013. The study obtained secondary panel data for 153 listed banks from seventeen MENA Countries. The study was anchored on agency theory and organizational theory. Using ordinary least squares, which does not consider the unobservable endogeneity and heterogeneity of considered variables applying panel data technique (Cooper & Schindler, 2011) which considers individual firm or time-specific effects. Econometric regression model was used to analyse board size, non-executive directors, board gender diversity, independent directors and board frequency of meetings as independent variables and NIM, TBQ and ROA as dependent variables. The study found independent directors, board size and gender diversity negatively influenced bank performance. However, board frequency of meetings and non-executive directors positively influenced financial results of a firm while board characteristics were important determinant on financial performance of banks in MENA Countries. That meant that with improved board characteritics there would be a positive improvement on financial results of commercial banks in MENA Region countries. This study was carried in MENA countries.

Gômez, Cortês and Betancourt (2017) evaluated the influence of board characteristics on financial results of Columbian companies. The study analyzed panel data covering Columbian companies during the years of 2008-2014. The study used board independence, board frequency of meetings and board size as explanatory variables: size of the firm as control variable and ROE and ROA were the dependent variables. The study considered ninety firms, forty-two were family owned and forty-eight were not family operated. Of these, thirty-one were in the financial sector, ten in the utility sector and forty-nine in real estate. The study used agency theory and stewardship theory. Adopting a linear regression model, the study found board membership of between 6 and 10 as an optimal board size for ROE and ROA. Thus, when more directors were appointed to the board, this result improved financial performance, governance, supervision and counselling until a limit is reached where decision, control and coordination problems emerge and surpasses the benefits. Board independence had insignificant influence financial performance of the firms. This was due to non-existence of independent board membership. Board frequency

of meetings had no linear relationship with financial performance. Consequently, an increase in board meetings indicated commitment to the search of improved financial performance. The study recommended further studies to cover other economies and expand the variables.

Al-Daoud, Saidin and Abidin (2016) evaluated the influence of board meetings on listed firms in Aman Stock Exchange. The study covered service and industry sectors covering years 2009-2013. The study obtained secondary panel data from accounts and annual reports of these firms. The study had 118 firms which generated 579 observations. The study adopted dynamic panel of the General Method of Moments (GMM) as the period was small with cross section firms being numerous. GMM helps to solve endogeneity related issues. Using board meeting as an independent variable, leverage, total assets, audit firm, industry type and board size as control variables and ROA and TBQ as the dependent variables. The result favours ROA in short-term whereas TBQ for long-term perspective. The study was anchored on agency theory. The study found board meetings had positive and significant influence on firm performance. This study supports the agency problems where the more the meetings the greater monitoring was facilitated to the board. As directors had more interactions with management and valuable discussions, this led to enhanced firm performance. From the results, it was evident that some firms had four meetings in a year that was way below the set limits by the Jordanian Stock Exchange in 2009 which recommended a minimum of six meetings for every year.

Nyarige (2012) evaluated how board characteristics influenced financial results of nine listed banks in Nairobi Securities Exchange. The study considered six years 2005 to 2010 and obtained secondary data on executive compensation, board frequency of meetings, board independence and board size as independent variables while TBQ was a dependent variable. The study developed a regression model to analyse the cross-sectional data to ascertain variances between listed commercial banks, which had stable value, appreciatable value and declined value during the period under consideration. Panel data was obtained from annual reports and statements filed with Nairobi Securities Exchange. Each of the bank was assigned a market value =Listed prices from the stock market+listed preference shares price+

Booked value of debt. All assets were assigned a replacement value= plant and equipment were assigned a replacement value + inventory was assigned a replacement cost. Nyarige (2012) concluded board independence had a positive influence on TBQ whereas board frequency of meetings and board size had negatively influenced TBQ. The result revealed that the more independent directors the better TBQ whereas the more meetings and and largers board eroded TBQ. The study was anchored on agency and stakeholder theories. This study considered only listed commercial banks only.

Muchiri (2016) studied the influence of board characteristics on financial performance of 42 listed firms in Nairobi Securities Exchange. Secondary panel data was obtained from annual reports and statements on board frequency of meetings, board composition, board size and directors with accounting knowledge as independent variable whereas ROA was dependent variable for five years 2010 to 2014. The study revealed a maximum of 11 meetings, a minimum of 4 meetings and a mean of 7 while standard deviation was 1.2 meaning there was some variability. Board size had a minimum of 6 members; maximum of 11 while the mean was 10 members with a standard deviation of 0.036. Adopting SPSS statistical software to analyze the panel data, the study found R^2=55.1 percent which explained 55.10 percent variability of ROA. Analysis of variance (ANOVA) results revealed P-Value = 0.000 which was less than 5 percent significance level. Financially, analysis revealed some firms made losses up to 54.29 percent while other made profits to the tune of 8.79 percent of ROA. The study found firm size, board meetings and accounting knowledge had positively and significantly influenced ROA. However, board composition had no influence on ROA. This finding indicated that larger board size, more meetings and the bigger proportion of board members with accounting knowledge resulted to improved ROA. The study considered stewardship and agency theories. This study covered listed companies at Nairobi Securities Exchange.

2.4.3 Board Gender Diversity and Financial Performance.

Some researchers have concluded that women are specialized in executing specialized tasks due to their natural setup. This has occasioned arguments in support

and negating that women exhibit special characteristics for good governance. Azmi and Barrett (2013) concluded women were risk-averse, meticulous, exhibited skills in accounting and finance. This has enticed researchers to refocus on the influence of board gender diversity on financial performance. Carter, Simkins and Simpson, (2003) concluded that membership diversity facilitates boards with new perspectives and understanding.

Akpan and Amran (2014), examined how board characteristics influenced financial performance of 90 listed firms at Nigerian Stock Exchange. The variables in consideration were board women, board ownership, board independence, director's education, board age and board size being independent variables while turnover was the dependent variable. Panel secondary data from annual reports and statements was obtained for the years 2010 to 2012, using multiple regression models to analyze the data. The study revealed a woman on the board had a negative but significant relationship with the revenues of a firm. The study noted that appointment of women directorship was only public relations as their proportion was negligible to create a meaningful impact on the performance of a firm. Hence recommendation of enhancing women proportion in the board to between 30-35 percent. They further concluded that board education and board size revealed a positive and significant influence on turnover of Nigerian listed firms whereas board age, board ownership and board independence had no influence on financial results of Nigerian listed firms. The study considered agency theory.

Ntim (2015) examined the influence of board characteristics on firm valuation of 169 listed firms in Johasnesburg Stock Exchange. Secondary panel data was obtained from annual reports and statements filed at *Perfect Information Database* for five years 2002 to 2007. Both time-series and cross-sectional data panel observations was adopted. Appling fixed-effect regression (FEM) and multivariate regression model the study analyzed board ethnicity, board gender diversity, board gender non-white (black women) and board diversity both in gender and ethnicity as independent variables and ROA, total share return (TSR) and TBQ as dependent variables. The study revealed board characteristics was significant in providing access to firm resources such as financial and contracting, compensating management, advising,

discipline, monitoring and motivating. Descriptive statistics revealed distribution of board diversity on ethnicity from zero percent to one hundred percent averaging at thirty percent. This meant that despite the reform efforts listed firms still employed seventy percent male white. This study revealed increased gender diversity from 26% to 35% between the years 2002 and 2006. The same was seen in gender ethnicity explaining the efforts made to comply with the regulations enacted. The study found board diversity had a positive and significant influence on firm valuation; more emphasize was on ethnicity than gender diversity as a significant non-linear influence was exhibited between board diversity and market valuation. Resource dependence theory revealed a positive influence of board diversity in market valuation in the Johannesburg Securities Exchange. The firms which employed both male and female experienced minimum challenges in renewing mining license as they complied affirmative action policies. They considered agency theory, diversity theory, resource dependence theory and organizational theory.

Abu, Okpeh and Okpe (2016) evaluated the influence of board characteristics on financial performance of Nigerian listed banks. The study adopted multiple regression technique, collected secondary panel data from annual reports and statements of 15 deposit money banks for the period 2005 to 2014. The study used CEO, women directors, independent directors, grey director and foreign director as independent variables and ROA and ROE as dependent variables and found board gender diversity; CEO and independent non-executive board members had no influence on Nigerian banks. They further ascertained that foreign directors had a positive and significant influence on financial performance of commercial banks whereas grey board members had a negative significant impact on financial performance of commercial banks. They suggested appointment of more foreigners to board as they possess the requisite professional competence, creativity and innovativeness, reputation, integrity, skills, expertise and knowledge to monitor activities of top management that was consequential to improved financial performance of Nigerian banks. This study concentrated on listed banks of Nigeria. They adopted resource dependence theory and agency theory.

Temile, Jatmiko and Hidayat (2018) examined the impact of board characteristics on financial performance of Nigerian listed firms. Secondary data was obtained from the annual accounts and statements for 50 listed companies in the Nigerian Stock Exchange for the years of 2010 to 2014. Data on female CEO, board gender diversity, female chief finance officer and female audit committee as independent variables, their control variables were leverage and firm size while ROA was a dependent variable. The study adopted descriptive research design. They used ordinary least square (OLS) regression model to estimate the study model. They found female CEO had no influence on financial results of the Nigerian firms. However, female chief financial officer had a positive and significant relationship with financial performance of quoted firms in Nigeria. However, women in audit committee had no impact on the financial results. Overally, the study concluded the higher the proportion of women in the board the better the financial performance of the listed firms in the Nigerian Stock Exchange. This meant that it did not matter whether a CEO was a female, but it mattered when a female was a chief financial officer. The study adopted agency theory, resource dependence theory and information perspective theory.

Wachudi and Mboya (2012), assessed the impact of board attributes on financial results of commercial banks in Kenya. Their investigation focused on every one of the forty-two banks in Kenya for the period 1998 to 2009. They had board diversity as independent variable and ROA as dependent variable, used stepwise regression analysis and found boards of commercial banks were male dominated in Kenya. On average, of the 8-typical membership, there was one female director. The study revealed gender diversity had no influence on the performance of commercial banks. This study was consistent with Campbell and Minguez-Vera (2008), who argued that the market does not punish boards with female directors. In view of females being negligible in the board, there was likelihood of their contribution not being noticed. This could explain the tokenism as implored by Kanter (1977). Tokenism exists where representation falls under 15 percent, just to be seen to comply with the gender balance. The study adopted Tokenism theory and agency theory. This study considered all the listed firms and adopted ROA as a performance measurement tool.

Letting, Wasike, Kinuu, Murgur, Ongeti and Aosa (2012) evaluated the impact of board characteristics on financial results of forty listed firms at Nairobi Securities Exchange that were in operation in the year 2010. The study used structured questionnaire to solicite data on firm age, board education qualification, board specialization, board women and board study specialization as independent variables while ROA, ROE, dividend yield and price earnings were the dependent variables. The study adopted cross-sectional descriptive design and multivariate regression model. In profiling board of directors, descriptive statistics was used to ascertain how they influenced dependent variables. Analysis revealed that board member specialization, board women, firm age and board education specialization had a positive and significant relationship with ROA and dividend yield (DY); board education and board age had positive and significant influence on ROE whereas board specialization and board age, price earnings ratio (PER) and board specialization and board gender and board age. They further found board education and board women had a statistically significant and negative relationship on PER. Board specialization and board women had a significant influence on ROE and DY. This study considered dividend yield, price earning and ROA and of all listed firms in the Nairobi Securities Exchange. They used stewardship, stakeholder, agency and resource depence theories in their study.

2.4.4 Board Share Ownership and Financial Performance.

Mamatzakis and Bermpei (2015), studied how corporate governance influences the performance of investment banks in the US by employing dynamic panel threshold analysis. The study adopted board size, CEO-Duality, board independence, board ownership and CEO power as explanatory variables and profit efficiency, accounting-based ratios of pre-tax operating income, ROA and ROE as dependent variables for the years 2000 to 2012. Secondary panel data was sourced using DEF 14A reports, Bankscope, annual and financial reports from 10-K Bankers. They applied steward and agency theories in their study. The study established board share ownership threshold to be 8.54 percent. Banks whose board share ownership had lower than threshold revealed that any increase in ownership had a negative influence on performance at a one percent level of significance. The opposite of this,

banks with board share ownership above the threshold exhibited a positive influence on performance at five percent level of significance level. This revealed that management's interests were aligned to those of the firm. A confirmation of the agency theory (Jensen & Meckling, 1976). Board size had a negative influence on performance when the size exceeded 10 members. However, CEO-power had a positive influence on performance of the investment banks which was consistent with stewardship hypothesis.

Bashir, Fatima, Sohail, Rasul and Mehboob (2018) investigated how board characteristics influenced financial performance of commercial banks in Pakistan. They sampled 30 listed banks (specialized, private and public banks) from 2008 to 2014. The study considered board ownership, board size, institutional ownership, independence of directors, annual general meetings, leverage and bank size as independent variables while ROA, earnings per share (EPS) and ROE were dependent variables. The study obtained secondary panel data from annual reports of the banks listed at Pakistan Stock Exchange. The study applied multiple regression analysis and established that institutional share ownership and board size had no influence on EPS, ROA and ROE, board share ownership non-executive director had no influence on ROA and had negatively influenced EPS and ROE whereas AGM had no impact on EPS and ROA and negative influence on ROE. They further found bank size and leverage had significant impact on financial performance. The study observed that despite Pakistan having elaborate corporate governance framework in place, its implementation was a challenge as the result revealed mixed findings. The study employed agency theory.

Gugong, Arugu and Dandago (2014) examined how ownership structure influenced performance of a Nigerian Insurance firms. Secondary panel data was obtained from 17 insurance companies for the years 2001 to 2010. Data on board share ownership and institutional share ownership were independent variables whereas ROE and ROA were dependent variables obtained from audited annual reports. The study employed regression models to analyse the data and concluded board share ownership and institutional share ownership had significantly influenced ROE and ROA of Nigerian Insurance firms. The study recommended sustainability of share

ownership of listed firms to ensure their perpetuity. They applied agency theory in their study.

Vafaei, Ahmed and Mather (2014) examined the influence of board characteristics on financial performance of 500 companies in Australia. They obtained secondary panel data for the period 2005 to 2011 on board share ownership, board size, and block ownership as independent variables whereas ROE, ROA and TBQ were dependent variables. They carried out panel OLS regression analysis. The study found board share ownership had a positive and significant influence on TBQ while it had no influence on ROE and ROA. Block ownership depicted a positive and significant influence on ROE and ROA while it had a negative but significant influence with TBQ. The results further revealed that board size had a negative but significant influence on ROE and ROA while it had no influence on TBQ. They used resource dependence and agency theories in their study.

Mandala, Kaijage, Aduda and Iraya (2018) examined how board characteristics influence financial performance of financial institutions in Kenya. The study adopted descriptive research design, secondary panel data was obtained for ten-year (2006-2015) on board type, board activity, board composition, board duality and board size as explanatory variables while revenue growth rate and ROA were dependent variables. The study considered 3,989 financial firms covering five regulators in Kenya. Applying hierarchical stepwise and multivariate regression model found board share ownership had a significant influence on financial performance while board frequency of meetings had strongest influence on financial performance of financial institutions. On board meetings, the findings revealed board held meetings of between eleven and fifteen which was ideal to optimize performance of financial institutions. The study revealed that in cases where all board members participated in share ownership depicted highest impact on revenue growth rate whereas other variables: board independence, CEO-Duality, board size and gender diversity had no significant impact on financial performance of financial institutions in Kenya. The study adopted agency, stewardship, upper echelons and resource dependence theories.

2.4.5 Bank Size and Financial Performance

According to Mule, Mukras and Nzioka (2015), bank size refers to the variety and amount of production ability and capacity a bank has or the variety of services it avails to its customers at any given time. It is therefore how small or big a bank is capable to offer its services or products at any given moment in time to its customers.

Nodeh, Anuar, Ramakrishnan and Raftnia, (2016) evaluated how the structure of the board influenced the financial performance of banks in Malaysia. The study had board independence and board size as independent variables and ROE and ROA as dependent variables, whereas firm size was the moderating variable. The study obtained secondary data from 37 Malaysian banks' annual reports for 10 years 2005 to 2014. The study considered all the banks in the Malaysian banking sector which consisted of 16 Islamic and 21 conventional banks. They applied panel data techniques as their data had a combined time-series and cross-sectional data. Their study adopted OLS and fixed effect methods to analyze the data using STATA. The study concluded board size and board independence had positively and significantly influenced financial performance of banks and the moderating variable bank size had a positive effect on the influence of board size and board independence on the ROE and ROA of the Malaysian banks. This means that any additional board director would result to increased profit. It also meant that the bigger the bank the more profitable it became as management optimally applied available resouces to introduce new profitable products into the market thus increasing their financial performance. This study was based on agency theory.

Terraza (2015) evaluated the impact of bank capitalization and liquidity ratios on banks' financial performance. The study period was between 2005 and 2012. So as to put into perspective European banks into their respective sizes, secondary data in three panels were considered based on their total assets: large had total assets greater than 3 Million and below 2 Billion Euros, medium banks had total assets greater than 1 Million and below 3 Million Euros while small banks had total assets below 1 Million Euros. Secondary data for 1270 European banks was collected from Bankscope on ratio of equity to total assets, ratio of equity to total loans, the liquidity

risk defined as liquid assets to deposits of customers and funding on short term, total assets and the ratio all loans to all deposits from clients as independent variable while return on average assets was dependent variable. FEM and dynamic model also referred to as GMM were adopted. The results revealed homogeneity behaviour in the case of large banks. In the case of medium banks, the estimated results revealed there existed a positive and significant profitability variation whereas liquidity risk was pegged on the bank size. Bank size was found to be a significant variable in determination of bank profitability in European banks and thus a need to put into context that was country specific. This study was based on economic theory.

Saeed, Murtaza and Sohail (2013) evaluated the moderating effect of firm size on the influence of board characteristics on ROA of fourteen banks in Pakistan. The study covered fourteen banks for six years 2006 to 2011. Secondary data was collected on board size, CEO duality, the frequency of audit meetings, board share ownership and board independence as independent variables while ROA was a dependent variable. The study adopted descriptive statistics and performed economic regression analysis. Board size had a negative but significant influence on ROA whereas board independence and board share ownership had a positive and significant influence on ROA. CEO duality had a negative but significant influence on ROA. However, board meetings had insignificant influence on ROA. Bank size as the moderating variable had a significant effect on the influence of board characteristics on financial performance of Pakistan banks at a growing rate. This study was anchored on agency theory.

Kılıç and Kuzey (2016) evaluated the influence of board gender diversity on financial performance of Turkish firms. The study obtained secondary panel data of 149 listed firms in Turkish Stock Exchange for the period covering 2008 to 2012. The study adopted generalised method of moments, instrumental variable regression and two-stage least squares to analyse how board gender diversity as independent variable influenced return on sales (ROS), ROE and ROA as dependent variables whereas firm size was a moderating variable. The study revealed that board gender diversity had positively influenced on ROE, ROS and ROA of Turkish listed firms and firm size as a moderating variable had a significant effect on the influence of

board gender diversity on financial performance of Turkish listed firms in Borsa Instanbul. This study adopted agency and resource dependency theories.

Ashenafi, Kelifa and Yodit (2013) reviewed how board characteristics influenced financial performance of Ethiopian commercial banks covering years 2005 to 2011when Ethiopia had no stock exchange. Nine commercial banks were considered and secondary data from bank's annual reports and statements was obtained. The study used bank size, audit committee, board size and capital adequacy ratio as independent variables whereas ROA and ROE were dependent variables. They involved descriptive statistical and inferential statistical analysis and developed classical linear regression model developing two regression models for ROE and ROA to regress panel data. The model explained ROE with R^2 = 68 percent and adjusted R^2=63 percent and P=0.0000. They found board audit, capital adequacy and board size had a statistically negatively but significantly influenced ROE whereas bank size and capital adequacy squared had positively and significantly influenced ROE. The study further showed ROA had 45 percent. This revealed bank size and capital adequacy ratios were statistically significant at 1 percent; whereas board audit, board size and capital adequacy were statistically significant at 5 percent. However, ownership type, loan to deposit ratio and loan loss provision had no influence on ROA. To cushion depositors, the National Bank of Ethiopia requires the capital adequacy ratio to be 8 percent. From the findings, when the capital adequacy ratio exceeds 8 percent, ROE changes to positive meaning depositors will believe and have confidence in the bank's deliberate intention to implement corporate governance. They also found bank size and capital adequacy having statistically positively and significantly influenced financial performance; audit committee and board size had a negative but significant influence on firm performance implying that larger banks enjoyed better profits than smaller banks. Absence of corporate governance awareness, national standards of corporate governance, stock exchange, weak legal frameworks and high government intervention contributed negatively to the impact of board characteristics on the financial performance of banks in Ethiopia.

Nouaili, Abaoub and Ochi (2015) examined what drives bank financial performance in Tunisia. Using bank size, inflation, GDP, capital average ratio, risk, privatization,

efficiency, quoted and concentration as independent variables and ROE, liquidity (LIQ), NIM and liquidity ratio were the dependent variables. The study adopted panel data technique and regression analysis with the linear model of Bourke (1989) and found bank size, efficiency and concentration had a negative influence on financial performance while quotation, capitalization, and privatization had positively influenced ROE, NIM, ROA and LIQ. Business cycle when measured with GDP had positively influenced performance whereas inflation rate had adversely influenced financial performance. The implication of the result was that the policy makers had to refocus and take corrective measures aimed at promoting bank performance and the financial sector as a whole.

Wepukhulu (2016) assessed the influence of governance controls and financial performance of commercial banks in Kenya between the years 2001 and 2013. The study used primary and secondary information. Utilized structured questionnaire to obtain data from top management of commercial banks. Secondary information was acquired from yearly audited reports and statements from the banks' websites, Attorney General, Nairobi Securities Exchange and the Central Bank of Kenya. Information on bank proprietorship was gathered from Bankscope which has more than 29,000 banks around the world. Adopting a hierarchical multiple regression analysis under panel data framework, concluded bank size impacted positively and significantly on the relationship between the corporate governance and performance of commercial banks when applying return on equity, TBQ and return on assets performance measures. The study further found: board size had a negative but significant impact on ROE, insignificant influence on return on assets (ROA) and a positive and significant effect on TBQ ratio; independence of the board had no impact on corporate administration and execution of business banks when the three measures were applied (TBQ, ROE and ROA). Board size, block proprietorship and institutional share ownership were found to negatively and significantly impact ROE. Notwithstanding, while embracing TBQ as a measure, there was no influence.

2.5 Critique of Existing Literature

Quite several researches have been carried out to ascertain the influence of board characteristics on the financial performance of commercial banks in diverse economies. Nonetheless, they evident several deficiencies. These were deliberated as follows:

Mbalwa, Kombo, Chepkoech, Koech and Shavulimo (2014) examined how board size, board characteristics, top management, shareholder communication policy and continuous disclosures influence the financial performance of sugar firms in Kenya. Even though their study was done in Kenya, the study focused on the sugar industry. Mandala, Kaijage, Aduda and Iraya (2018) studied the entire financial sector comprising insurance firms, commercial banks, regulators, SACCOs, Micro-Finance institutions, mortgage firms, development banks and investment banks. The current study focused on the banking sector and introduced bank size as a moderator. Additionally, the study segregated the banking sector into three groupings (large banks, medium banks and small banks) based on their total assets as of 2018.

Similarly, Wepukhulu (2016) conducted a study on the impact of corporate governance on the financial performance of commercial banks in Kenya. The study focused on institutional share ownership, board independence, board size and block share ownership as independent variables and not board gender diversity, board share ownership and board frequency of meetings. Wachudi and Mboya (2012) evaluated the effect of board characteristics on the performance of commercial banks in Kenya and Nyarige (2012) evaluated how board characteristics influenced financial results of nine listed banks in the Kenyan banking sector. These three studies considered commercial banks in Kenya, however, they did not analyze their behavior in respect to the industry, large banks, medium banks and small banks in relation to ROE.

Bashir, Fatima, Sohail, Rasul and Mehboob (2018) examined how bank size as a moderating variable impacted the influence of board size, independent directors, annual general meetings and institutional ownership impact on earnings per share, ROE and ROA of banks in Pakistan. Nodeh, Anuar, Ramakrishnan and Raftnia, (2016) evaluated the effect of bank size as a moderating variable impacted on the

influence of board size and board independence on ROA and ROE of Malaysian banks. These studies considered a moderating variable but did not evaluate how banks behave in relation to large banks, medium banks and small banks, and ROE they were carried out in Pakistan and Malaysia.

Akpan and Amran (2014) assessed how board share ownership, independence of the board and board age related to the financial performance of listed firms at Nigerian Stock Exchange. The current study considered board size, board gender diversity, board frequency of meetings and board share ownership as independent and bank size as a moderating variable in Kenya. Terraza (2015) analyzed how bank capitalization and liquidity proportions impacted the financial results of European banks. Terraza (2015) investigated the behaviour of large banks, medium banks and small banks on their liquidity ratios and capitalization levels. The current study sought to establish how board size, board frequency of meetings, board gender diversity and board share ownership influenced return on equity in Kenyan commercial banks.

There was no clear empirical evidence as to how board characteristics influence the financial results of commercial banks. It was on this basis that the current study sought to establish how board size, board frequency of meetings, board gender diversity and board share ownership influenced return on equity in Kenyan commercial banks. Incorporating bank size as a moderating variable and analyzing their behaviour vis a vis the banking industry, large banks, medium banks and small banks in relation to return on equity.

The study, therefore, sought to fill the identified gaps in the literature by applying a comprehensive approach to investigate the effect of the moderating variable bank size on the influence of board characteristics on the return on equity of commercial banks in Kenya. The study further sought to evaluate the relationship of the board characteristics across the industry and the three tiers of the banking sector in Kenya. For the time being, this is an aspect least explored in Kenya.

2.6 Research Gaps

Based on relevant empirical literature reviewed, it was evident that there were research gaps such as contextual, conceptual and methodological gaps. Contextually, most of the studies which have been carried out on the influence of board characteristics on the financial performance of commercial banks were done in other economies. For example, Bebeji, Mohammed and Tanko (2015), evaluated the influence of board size and board composition on the financial results of Nigerian banks. Sherif and Anwar (2015) examined the relationship between board gender diversity, board structure and financial performance of commercial banks in the MENA Region. Mamatzakis and Bermpei (2015) assessed the influence of board characteristics on the financial results of investment banks in the US. Bashir, Fatima, Sohail, Rasul and Mehboob (2018) investigated the impact of board characteristics on financial results of commercial banks in Pakistan. Terraza (2015) investigated three panels' data of European Union banks.

Further, studies done in Kenya considered other sectors, which clearly brought out contextual gaps. For instance, Mandala, Kaijage, Aduda and Iraya (2018) examined the influence of board characteristics on financial results of all financial institutions in Kenya. Aduda, Chogii and Magutu (2013) evaluated the influence of corporate governance on the financial results of listed firms at Nairobi Securities Exchange. Mbalwa, Kombo, Chepkoech, Koech and Shavulimo (2014) examined the impact of board characteristics on financial results of sugar manufacturing firms in Kenya. Mohamed and Atheru (2017) addressed the influence of board size, board ethnicity, board experience and board education in the mobile service provider in Kenya. These studies brought out contextual gaps since they considered other sectors such as the sugar manufacturing sector, financial institutions and listed firms.

Additionally, several studies indicated conceptual gaps as they did not address the variables of the current study. Bebeji, Mohammed and Tanko (2015) concentrated on board size and board composition. Sherif and Anwar (2015) focused on board size, female directors, independent directors, non-executive directors and board frequency of meetings. Mamatzakis and Bermpei (2015) considered board size, independent

directors, CEO Duality, CEO ownership and board share ownership. Bashir, Fatima, Sohail, Rasul and Mehboob (2018) considered bank size, leverage, institutional ownership, annual general meeting, the ratio of non-executive directors, board size. Mandala, Kaijage, Aduda and Iraya (2018) focused on board type, board composition, board size, CEO Duality, board activity and board diversity. Aduda, Chogii and Magutu (2013) considered CEO Duality, inside directors, outside directors and board size. To address this gap, this study sought to establish the influence of these four variables board size, board frequency of meetings, board gender diversity and board share ownership on return on equity of commercial banks in Kenya together.

Finally, the literature review revealed methodological gaps in several studies. Wepukhulu (2016) examined the banking industry whereas the current study analyzed the behavior of board characteristics vis a vis the industry and the three-panel data in the industry i. e. large banks, medium banks and small banks. Nyarige (2012) considered nine listed commercial banks in Kenya whereas, the current study carried out a census study of all the banks in Kenya. Mandala, Kaijage, Aduda and Iraya (2018) applied hierarchical regression and Generalized Estimating Equation (GEE) models, the current study adopted Fixed Effect Regression Model. The current study adopted panel data survey and descriptive research design.

The current study adds value to the body of knowledge on the linkage between board characteristic and financial performance of commercial banks, applying return on equity as a measure of performance and board size, board frequency of meetings, board gender diversity and board share ownership as a controlling, disciplining, advising and a monitoring mechanism on top management. The study introduced bank size as a moderating variable. The study also researched how banks respond at industry and in respective tiers to the study variables. The study sought to bridge the gap in literature as far as the banking sector on the influence of board characteristics and financial performance of commercial banks in Kenya.

2.7 Summary of Literature Review

The current study reviewed various theories including agency theory, resource dependencey theory, stewardship theory, transaction cost theory and stakeholder theory. The study revealed that these theories provide a background on the variables, thus were in support of the financial performance of the commercial banks. The study reviewed past studies which covered global, regional and local and considered the title, scope, methodology, results and policy and administrative recommendations of the study culminating in a critique. The critique brought out study gaps. These gaps were methodological, contextual and conceptual. From this, the study developed a conceptual framework that clearly brought out the variables under study.

The study variables were independent (board size, board frequency of meetings, board gender diversity and board share ownership), bank size as a moderating variable and financial performance proxied by return on equity as a dependent variable. This was summarized in Table 2.1.

Table 2.1: Summary of Literature Review

Author/Year	Focus of Study	Methodology	Knowledge Gaps	Focus of current study
Adebayo et al., (2013)	Relationship between corporate governance and organizational performance: Nigerian listed organization experience	The study adopted panel data multiple regression method.	This study presented a contextual gap as it was done in Nigeria. As generalization of the findings may not be a true reflection of the Kenyan case due to the economic and political differences. The study also presented a scope gap as it covered six years between 2005 and 2010.	The current study was done in Kenya and focused on all commercial banks for the period of ten year between 2009 and 2018 which is most current.
Abu, Okpeh, & Okpe, (2016).	Board characteristics and financial performance of deposit money banks in Nigeria	The study adopted multiple regression technique	This study presented both scope and contextual gaps as it covered listed banks in the Nigerian Stock Exchange	The current study was a census study on commercial banks and carried out in Kenya
Aduda, Chogii & Magutu (2013)	The significance of board characteristics on financial performance of listed firms at Nairobi Securities Exchange	The study adopted both parametric and non-parametric analysis.	The study presented a scope gap as it covered four years between 2004 and 2007.	The current study covered ten years between 2009 and 2018 mosst current.
Akpan and Amran (2014)	Board characteristics and company performance: Evidence from Nigeria	This study adopted multiple regression technique	This study presented a contextual gap as it covered three years between 2010 and 2012 and was done in Nigeria. The study focused on listed firms on the Nigerian Stock Exchange	The current study covered ten years between 2099 and 2018 and focused on all commercial banks in Kenya.
Arora & Sharma, (2015)	Impact of firm performance on board characteristics: Empirical evidence from	This study adopted poisson regression model	This study presented a contextual gap as it was done in India. Focusing on manufacturing firms listed at Bombay Stock Exchange	The current study focused on all commercial banks in Kenya.

	India			
Bashir, Fatima, Sohail, Rasul & Mehboob (2018)	Internal corporate governance and financial performance nexus; a case study of banks of Pakistan.	The study adopted multiple regression.	The study presented a scope and contextual gap as it covered seven years between 2008 and 2014 and was carried out in Pakistan	Current study covered ten years between 2009 and 2018 and was done in Kenya.
Bebeji, Mohammed and Tanko (2015)	The effect of board size and composition on the financial performance of banks in Nigeria	This study adopted multiple regression model	This study presented a contextual gap as it adopted judgemental sampling method, had two independent variables board size and board composition and considered listed banks at the Nigerian Stock Exchange	This study focused on all commercial banks in Kenya and considered board size, board frequency of meetings, board gender diversity and board share ownership as independent variable, bank size as a moderating variable and return on equity as a dependent variable.
Johl, Kaur, & Cooper, (2015).	Board characteristics and firm performance: Evidence from Malaysian public listed firms.	This study dopted simple multiple regression technique	This study presented a methodological and contextual gap as it was cross-sectional and focused on Malaysian listed on the Bursa Stock Exchange	This study focused on all commercial banks and introduced a moderating variable and examined the behavior of board characteristics vis a vis industry, large, medium and small banks.
Letting et al., (2012),	Board diversity and performance of companies listed in Nairobi Stock Exchange	This study adopted OLS regression model	This study presented a contextual gap as it focused on listed firm on the Nairobi Securities Exchange	The current study was panel data and focused on all commercial banks in Kenya.
Mamatzakis & Bermpei (2015)	The effect of corporate governance on the performance of US investment banks	This study adopted dynamic panel threshold model	This study presented a contextual gap as it was done in US focusing on investment banks	The current study focused on all commercial banks in Kenya.
Mandala, Kaijage, Aduda & Iraya (2018)	An empirical investigation of the relationship between structure and	The study adopted both correlation descriptive research design and cross-	This study presented scope and methodological gaps as it covered regulators, commercial banks, investment banks, development and	The current study focused on all commercial banks in Kenya and panel data. It also introduced moderating variables and three

	performance of financial institutions in Kenya.	sectional survey design	mortgage finance companies, insurance companies and SACCOs in Kenya. The study adopted cross-sectional survey design.	panel's data.
Mbalwa, Kombo, Chepkoech, Koech & Shavulimo (2014)	Effect of corpoarate governance on performance of sugar manufacturing firms in Kenya.	The study adopted correlation survey design	This study presented a contextual gap as it covered sugar-manufacturing firms in Kenya particularly in Western Kenya. The study also presented a methodological gap since it applied a correlation survey design. Adoption of different analytical method may give a different result.	The current study focused on commercial banks in Kenya
Mohamed & Atheru (2017)	Corporate governance and financial performance of mobile service providers in kenya: A case of Airtel Kenya Ltd.	The study adopted descriptive research design and adopted primary data.	This study presented a contextual gap as it covered a mobile service provider in Kenya	The current study focused on commercial banks in Kenya
Ntim (2015)	Board diversity and organizational valuation: Unravelling the effect of ethinicity and gender	The study adopted multivariate regession model	This study presented a contextual gap as it covered listed firms on the Johannesburg Stock Exchange	The current study focused on commercial banks in Kenya
Nyarige (2012)	The effect of corporate governance structures on financial performance of commercial banks in Kenya	The study adopted cross-sectional survey covering board frequency of meetings, institutional ownership, executive compensation and ratio of outside directors.	This study presented a scope gap as it covered listed banks on the Nairobi Securities Exchange and adopted agency and stakeholder theories	The current study focused on commercial banks in Kenya considered board size, board frequency of meetings, board gender diversity and board share ownership. Used agency, stakeholder, transaction cost, stewardship and resource dependency theories.
Sherif &	Board structure, gender	The study adopted	This study presented a contextual gap	The current study focused on the

Anwar (2015	diversity and bank performance in emerging markets: evidence from the MENA Region	dynamic panel data model	as it covered banks in MENA region. The study also presented a methodological gap since it applied dynamic panel data model. Adoption of different analytical method may give a different result.	banking industry and the three panel's data of commercial banks in Kenya. The study also introduced bank size as a moderating variable.
Terraza (2015)	Assessed the impact of bank capitalization and liquidity ratios on banks' financial performance	The study examined three panel's data and used General Methods of Moments	The study presented a conceptual gap since it did not introduce a moderating variable and the banking industry.	The current study introduced bank size as a moderating variable and considered the banking industry in Kenya.
Yasser, Entebang, & Mansor, (2011).	Corporate governance and firm performance in Pakistan: The case of Karachi Stock Exchange (KSE)-30	The study adopted economic model	This study presented a contextual gap as it covered listed firms in Karachi Stock Exchange	The current study focused on commercial banks in Kenya
Wachudi & Mboya (2012)	Effect of board gender diversity on the performance of commercial banks in Kenya	The study adopted step-wise regression model	The study presented a methodological gap since it applied step-wise regression model. Adoption of different analytical method may give a different result.	The current study focused on commercial banks in Kenya with enhanced variables board size, board frequency of meetings, board gender diversity and board share ownership as independent variables and bank size as a moderating variable.
Wepukhulu (2016)	Relationship between corporate governance and performance of commercial banks in Kenya	The study adopted both primary and secondary data and applied descriptive research design	Though the study covered commercial banks in Kenya, it presented a methodological gap as it considered the industry. The study also presented a contextual gap as it covered block ownership, institutional ownership, board independence and board size.	The current study segregated commercial banks into three tiers. It also covered board size, board frequency of meetings, board gender diversity and board share ownership as independent variables and bank size as a moderating variable.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter encapsulates the research methods suggested for the current study. The chapter highlighted the research philosophy, research design, target population, data collection instruments, data collection, data processing, analysis, diagnostic tests and tests of hypotheses.

3.2 Research Philosophy

The enlargement of knowledge applied in the study is the research philosophy (Saunders, Lewis & Thornhill, 2009). Research philosophy consists of three perspectives: interpretivism, realism and positivism. In the current study, the objective was to establish the influence of board characteristics on the financial results of commercial banks in Kenya. Therefore, the study adopted positivism as the research was involved in obtaining substantial data from the commercial banks facilitating law-like generalizations. Positivism was built on some theories applied to generate hypothesis which was verified to provide statistical justification of conclusions from a hypothesis which was empirically tested (McMillan & Schumacher, 2010). Sporta (2018) applied positivism in evaluating the effect of financial distress factors on the financial results of the banking sector in Kenya. The study involved collection of data in their current form, analysis and interpretation of the results. The current study sought to evaluate the influence of board characteristics on the financial performance of commercial banks in Kenya. The study was quantitative and eliminated subjectivity.

3.3 Research Design

This current study used a descriptive research design. The descriptive research design was used due to the involvement of evaluation of board characteristics and financial performance of commercial banks in Kenya. Descriptive research was used to source four panel data on the existing phenomenon to give a detailed account relating to variables in a set of circumstances in which banks exist (Kothari & Garg, 2014). The

research design explains the behavior of a given population in an accurately and ststematically manner (Sekaran & Bougie, 2010).

Descriptive research design was suitable because the study involves obtaining data and analyzing the study units at a specific time to evaluate the impact within the variables (Saunders, Lewis & Thornhill, 2009). Wepukhulu (2016) applied descriptive design in a study on the relationship between corporate governance and performance of commercial banks in Kenya. Mandala, Kaijage, Aduda and Iraya (2018) also applied descriptive research design to study how board structure influence financial performance of banking institutions in Kenya.

3.4 Population of the Study

According to Kothari and Garg (2014), the population of a study was generally composed of a collection of objects or individuals that were mainly focused on the study bearing similar traits or characteristics for whose benefit research was done. For this study, the target population was all the 43 commercial banks that were in operation as of 31st December 2018 (CBK, 2019). The target population is that population which the study intends to research and draw conclusions from (Dawson, 2009). The selection of the banking sector was guided by the pivotal role played by the banking sector in facilitating the growth and stability of the economy. Banking sector is also the fastest growing sector in any economy than GDP (Tomsik, 2014). Therefore, directors should set the agenda that enables top management to get guidance, be monitored and supervised, culminating in improved financial results which facilitates a stable and growing economy.

The current study adopted census method which involved exhaustive enumeration of the targeted population (Kothari & Garg, 2014). Since the population was 43 commercial banks in Kenya, a study of all commercial banks was considered. When the population is small and manageable, census is preferred. This was intending to enhance the validity of collected data and eliminate sampling errors (Saunders, Lewis & Thornhill, 2009).

3.5 Data and Data Collection Procedures

According to Maina (2012), data collection instruments were tools used for measuring a given phenomenon. They were designed to collect data on a topic of interest for the research subject. The study used a data collection sheet to obtain information on the study variables from annual reports filed at the CBK and also from banks' websites. Secondary data relating to board share ownership, board frequency of meetings, board size and board gender diversity were independent variables and bank size being a moderating variable while ROE was a dependent variable (Abu, Okpeh, & Okpe, 2016). According to Kothari and Garg (2014), secondary data is data readily available, analyzed and used for other purposes by someone else. Data collected for more than five years for both independent and dependent variables was considered adequate to compute various ratios and analysis for a study (Kosikoh, 2014).

Data collection involved visiting websites of individual banks and the Central Bank of Kenya. Using a data collection sheet, data was obtained for a period of ten years (2009-2018) per variable as follows; Board size sourced from the annual reports and statements that were normally distributed to firm owners at the Annual General Meetings and submitted to the CBK. The study collected board frequency of meetings from records submitted to CBK, Banking Supervision Department annually. Using published annual financial reports, the study collected from individual banks board gender diversity. All annual reports have a profile of each board member. From the annual reports submitted to the CBK, Banking Supervision Department, the study sourced through analyzing board share ownership. Data on return on equity and total assets was sourced through an annual banking survey as published by CBK on their website.

3.6 Data Processing and Analysis

Data analysis is the science of obtaining trends, patterns and information gathered from a set of data. Data analysis facilitates a better understanding of the plan and objective of the study (Dansereau & Hall, 2006). It is a process that connects actions deliberately made and ascertain meaningful result from the analysis made.

3.6.1 Data Processing

Time series data and cross-sectional data was sourced to make four panel data for each variable. Data was edited, classified, coded and tabulated to ensure completeness and appropriateness (Blumberg, Cooper & Schindler, 2014). Data on each piece of information was keyed into an excel sheet. Where discrepancies were noted, verification and authenticity were carried out to ensure appropriate data was captured. In such cases, published information carried the day. After uploading panel data into the excel program, ratios and natural logarithms were calculated before carrying out an analysis of the data. The study analyzed data using both descriptive and inferential statistics. Descriptive statistics the study used were mean, standard deviation, minimum and maximum, while inferential statistics the study estimated the model by applying pooled OLS, Random effect model and Fixed effect model.

3.6.2 Data Analysis

Collected data was analyzed by applying both inferential and descriptive statistics. Inferential statistics used pooled OLS or random effect and fixed effects models to establish the best fit model to be applied in the study. Descriptive statistics is a method applied in research to present and organize the obtained data which include central measures tendencies and dispersions. Central measure tendencies were such as mean, median, maximum and minimum, while dispersions included standard deviation, kurtosis, skewness and Jacque Bera (Wepukhulu, 2016). These methods enable the conversion of raw data into a form that was easily interpreted, understood and usually the first form of analysis. According to Kamau (2011), descriptive statistics allowed the most basic form of information provided in the manner of frequency or the number of times one variable was considered at a time. Skewness, kurtosis, Jarque-Bera probability, box plot and whiskers were used to ascertain normality. Correlation analysis was done to obtain correlation coefficients among board characteristics and firm financial results. The correlation coefficients were interrelated with the strengths of the relationships among each board's characteristics and financial results. At this point, correlation coefficients were interpreted.

According to Bell and Kelvyn (2015) Breusch-Pagan Lagrange multiplier (LM) test should be used to ascertain whether to use REM regression or Pooled OLS model regression when using panel data. The H_o: that there is no significant difference across units (no panel effect). If the p-value <.05 then we fail to accept the H_o and accept the H_1 that there was a significant difference across units. If significant then adopt RAM, then perform Hausman test to ascertain whether to use RAM or FEM in the panel data (Cooper & Schindler, 2011). Hausman test basically established whether the unique errors were correlated with the regressors, the H_o was they were not (Baltagi, 2005).

3.6.3 Tests of Hypotheses

Hypotheses testing were conducted on the research hypotheses highlighted on 1.4 in this study. Each hypothesis was conducted independently to evaluate whether to reject or to fail to reject the H_o. Data collected was analyzed applied both descriptive and inferential statistics. For descriptive statistics, mean, maximum, minimum, median and standard deviation were adopted to indicate the nature of both independent and dependent variables. For inferential statistics; REM regression or Pooled OLS model and FEM multiple linear regression models were used to establish the best fit model to be adopted in the study.

The study carried out regression model analysis for individual independent variables against the dependent variables to establish the direction and significance of their relationships. The study further introduced a moderating variable bank size to establish the significant effect of the moderating variable on the influence of board characteristics on return on equity of commercial banks in Kenya (Kimani, 2015). The study further carried out multivariate regression analysis to ascertain the relationship of board characteristics and the financial results of the commercial banks in Kenya. The study also evaluated how board characteristics influenced return on equity across the banking industry, large banks, medium banks and small banks in Kenya based on assets held by each bank as of 31st December 2018. Where large banks were those with total assets exceeding 5 percent, medium banks had total assets greater than 1 and less than 5 percent while small banks were those whose total assets were below one percent of the all banks' total assets.

3.7 Operationalization of Variables

Literature review recognized numerous board characteristics which influence the financial performance of a firm that need to be operationalized. These were: board size (Iraya, Mwangi & Muchoki, 2015), board frequency of meetings (Arora & Sharma, 2015), board gender diversity (Wagana & Nzulwa, 2016) and board share ownership (Akpan & Amran, 2014). The study sought to examine their influence on the dependent variable (ROE). The moderating variable (bank size) scaled down to Shs. 1 Billion (Akpan & Amran 2014) was also included. According to Wepukhulu (2016), ROE was found to be the best measure of the financial performance of commercial banks in Kenya. Table 3.1 operationalization of research variables.

Table 3.1: Operationalization of Research Variables

Variable	Indicators	Measurement
BS (X_1)	No. of directors sitting in the board in a year	Number
BFM (X_2)	No. of meetings in a year	Frequency of board meetings
BGD (X_3)	No. of women directors in the board as a ratio	Ratio of women to board membership
BSO (X_4)	No. of shares held by board members as a ratio	Ratio shares held by director to total issued shares
BTA (X_5)	Bank total assets	LN BTA in 1BN
Financial Performance (Y)	ROE	$\frac{\text{Net income (profit after tax)}}{\text{Shareholder's equity}}$

3.8 Model Specification

This study adopted the following statistical regression model to ascertain the relationship of the independent variable on the dependent variable. The bivariate variable regression model was in the form:

$Y_{itIND}=\beta_{0+}\beta_1X_1+\varepsilon_{it}$……………………………………………………………………………………..…….1

$Y_{itLB}=\beta_{0+}\beta_1X_1+\varepsilon_{it}$……………………………………………………………………………………..…….2

$Y_{itMB}=\beta_{0+}\beta_1X_1+\varepsilon_{it}$……………………………………………………………………………………..…….3

$Y_{itSB}=\beta_{0+}\beta_1X_1+\varepsilon_{it}$……………………………………………………………………………………..…….4

Where:

Y_{itIND} = ROE of all banks

Y_{itLB} = ROE of large banks

Y_{itMB} = ROE of medium banks

Y_{itSM} = ROE of small banks

$\beta_{0=}$ Intercept, β_1= coefficient, X_1 = predictor variable and ε_{it} = error term.

The study incorporated a moderating variable of bank size in the independent variables. Sub-models were fitted by the study for each hypothesis to compare the goodness of fit to determine whether the moderating variable had any moderating effect on the influence of the independent variable on ROE.

The analytical moderated model for moderating effect was as follows:

$Y_{itIND}=\beta_{0+}\beta_1X_{it}+ \beta_2Z_{2\ it}+Z(\beta_3X_3) +\varepsilon_{it}$……………………………………………………………………….5

$Y_{itLB}=\beta_{0+}\beta_1X_{it}+ \beta_2Z_{\ it}+Z(\beta_3X_3) +\varepsilon_{it}$……………………………………………………………………….6

$Y_{itMB}=\beta_{0+}\beta_1X_{it}+ \beta_2Z_{\ it}+Z(\beta_3X_3) +\varepsilon_{it}$……………………………………………………………………….7

$Y_{itSB}=\beta_{0+}\beta_1 X_{it}+ \beta_2 Z_{it}+Z(\beta_3 X_3) +\varepsilon_{it}$……8

Z= Moderating variable bank size (BTA) to be measured by ln of total assets scaled to Shs. 1 Billion.

ε_{it} = Error term assumed to be a constant

The joint regression model took the form:

$Y_{itIND}= \beta_0 + \beta_1 X_{1,it+} \beta_2 X_{2,it}+ \beta_3 X_{3,it}+ \beta_4 X_{4,it}+\varepsilon_{it}$ ……..…….....9

$Y_{itLB}= \beta_0 + \beta_1 X_{1,it+} \beta_2 X_{2,it}+ \beta_3 X_{3,it}+ \beta_4 X_{4,it}+\varepsilon_{it}$ ……..…….....10

$Y_{itMB}= \beta_0 + \beta_1 X_{1,it+} \beta_2 X_{2,it}+ \beta_3 X_{3,it}+ \beta_4 X_{4,it}+\varepsilon_{it}$ ……..…….....11

$Y_{itSB}= \beta_0 + \beta_1 X_{1,it+} \beta_2 X_{2,it}+ \beta_3 X_{3,it}+ \beta_4 X_{4,it}+\varepsilon_{it}$ ……..…….....12

Where Y= is the dependent variable, ROE financial performance.

Subscript i and t represent firm and time period respectively.

β_1, β_2, β_3, and β_4 are regression coefficients.

X_1 = Represents the number of board members (BS) siting on the board within the year

X_2= Represents the number of meetings held by the board (BFM) in the year

X_3= Represents the ratio of women on the board (BGD) measured as a ratio of female directors over total board membership

X_4= Proportion of number of share ownership held by the directors (BSO) which was measured as a ratio of the total number of shares held by all directors divided by the entire issued shares by the bank.

$\varepsilon_{it=}$error term.

The equation facilitated evaluation of the direction and magnitude of their relationships.

Any moderating variable may affect the influence of the independent variable over the dependent variable. Moderating effect takes place when the coefficients of the moderated variable were found to be significant statistically and the R^2 of the moderated regression model becomes greater than the R^2 of the unmoderated regression model (Fairchild & MacKinnon, 2009). The study incorporated a moderating variable of bank size. Board characteristics include board share ownership, board frequency of meetings, board gender diversity and board size. Sub-models were fitted by the study for each category to compare the goodness of fit to facilitate the determination of whether the moderating variable had any moderating effect.

The analytical moderated model for moderating effect is as follows:

$$Y_{itIND}= \beta_0 + \beta_1 X_{1,it+} \beta_2 X_{2,it}+ \beta_3 X_{3,it}+ \beta_4 X_{4,it}+ \beta_5 Z_{it}+Z(\beta_6 X_{6,it+} \beta_7 X_{7,it}+ \beta_8 X_{8,it}+ \beta_9 X_{9,it})+\varepsilon_{it} \quad \text{.....13}$$

$$Y_{itLB}= \beta_0 + \beta_1 X_{1,it+} \beta_2 X_{2,it}+ \beta_3 X_{3,it}+ \beta_4 X_{4,it}+ \beta_5 Z_{it}+Z(\beta_6 X_{6,it+} \beta_7 X_{7,it}+ \beta_8 X_{8,it}+ \beta_9 X_{9,it})+\varepsilon_{it} \quad \text{.....14}$$

$$Y_{itMB}= \beta_0 + \beta_1 X_{1,it+} \beta_2 X_{2,it}+ \beta_3 X_{3,it}+ \beta_4 X_{4,it}+ \beta_5 Z_{it}+Z(\beta_6 X_{6,it+} \beta_7 X_{7,it}+ \beta_8 X_{8,it}+ \beta_9 X_{9,it})+\varepsilon_{it} \quad \text{.....15}$$

$$Y_{itSM}= \beta_0 + \beta_1 X_{1,it+} \beta_2 X_{2,it}+ \beta_3 X_{3,it}+ \beta_4 X_{4,it}+ \beta_5 Z_{it}+Z(\beta_6 X_{6,it+} \beta_7 X_{7,it}+ \beta_8 X_{8,it}+ \beta_9 X_{9,it})+\varepsilon_{it} \quad \text{.....16}$$

Z= Moderating variable bank size (BTA) to be measured by ln of total assets scaled to Shs. 1 Billion.

e_{it}= Error term assumed to be a constant

X_1 = Represents the number of board members (BS) sitting on the board within the year

X_2= Represents the number of meetings held by the board (BFM) in the year

X_3= Represents the ratio of women on the board (BGD) measured as a ratio of female directors over total board membership

X_4= Proportion of the number of shares held by the directors (BSO) which was measured as a ratio of the total number of shares held by all directors divided by the entire issued shares by the bank

X_5= Bank size the moderator (BTA).

X_6= Moderated board size

X_7= Moderated board frequency of meetings

X_8= Moderated board gender diversity

X_9= Moderated board share ownership

3.9 Diagnostic Tests

Before carrying out any regression analysis it is necessary to establish the nature of the dataset. As summary, statistics is handy for non-parametric and parametric analysis. It informs whether the data was normally or non-normally distributed. It informed that it consisted of measures of central tendency such as mean, median, minimum and maximum. Another piece of information to be displayed was the measure of dispersion. Other diagnostic tests to be carried out were collinearity/multicollinearity, heteroscedasticity, panel unit root, stationarity, Hausman, autocorrelation, granger-causality and model specification.

3.9.1 Normality Test

A normality test was carried out to ascertain whether the panel data was normally distributed. It was carried out in two levels, at variable level and regression level. Normality at the variable level the study sought to determine whether data was normally distributed. In each variable, skewness and kurtosis values would be used to infer the variable's distribution. For normally distributed data, the value of skewness

would be zero meaning data was distributed around the mean and displays a perfectly symmetrical shape. When data displays skewness of >-0.5 and <0.5 is referred to approximately symmetrical, whereas skewness of >-1 and <1 is referred to moderately symmetrical and skewness of <-1 and >1 is referred to highly skewed. When skewness is negative, it showed that the sample had more values below the sample mean and had long-left tail whereas a positive skewness showed that the dataset had a long tail to the right meaning there were higher values than the sample mean.

Kurtosis explained how sharp the central peak was and its height to the distribution curve. Kurtosis with a value of 3.0 depicts normally distributed data known as mesokurtic (Muigai & Muriithi, 2017). Kurtosis with large values greater than 3 shows fat-tailed or leptokurtic displaying large outliers, those with larger values below the mean display a kurtosis value below 3 this category displays a thinner and shorter tail and were called platykurtic (Muigai, 2016). Jarque-Bera test is applied to ascertain the goodness-of-fit of the data and whether the panel data is normally distributed (Shungu, Ngirande & Ndlovu, 2014). In this study, the normality of the individual variables, kurtosis and skewness values for the respective variables were used for inferring normality of the variables (Muigai, 2016).

The second normality dimension is the normality of the fitted regression model. In this part, the study focused on the errors of the fitted model. It was always assumed in inferential statistical procedures the simple regression analysis that the sample is derived from a population that is normally distributed. The procedure assumes that the statistic of interest, calculated from the sample would exhibit a bell curve of several random samples and the distribution of the calculated values plotted. Whereas true normality was considered a myth, it was critical to ascertain whether the data displayed a significant deviation from normality (Ghasemi & Zahediasl, 2012). To establish the normality, the p-value of the statistics was used to test for the hypothesis. In this case, if the p-value was below the level of significance (say 5 percent) then the H_o of normality was rejected. However, a p-value above the level of significance would imply acceptance of H_o (Muigai, 2016).

3.9.2 Collinearity/ Multicollinearity Test

The study used Variance Inflation Factor (VIF) and Detection Tolerance tests to test for multicollinearity among the variables (Kodongo, Natto & Biekpe, 2015). When tolerance value is lower than 2 and VIF gets above 10, then there is a multicollinearity problem (O'Brien, 2007). When more than two predictor variables in a multiple regression have a high relationship then that phenomenon is called multicollinearity (Cooper & Schindler, 2011). This usually occurs when two or more explanatory variables in a single equation model have a linear relationship. According to Kothari and Garg (2014), the projected regression becomes less reliable and coefficients fluctuate widely as the degree of correlation rises between the variables. Standard error of β coefficients increases caused by multicollinearity, meaning the variability of βs across the sample complicated the assessment of each predictor. According to Cooper and Schindler (2011) there would be no relationship among the affected dependent variables and independent variables when the results of the tested sample coefficients and t-statistics become small.

The Pearson-pairwise correlation coefficient was applied in the current study to test for the level of correlation among the model variables for the continuous variables. The Pearson-pairwise correlation coefficient measures the range of the linear relationship between two variables in correlation varying between +1 and -1. A correlation of +1 implies that there is a perfect positive linear relationship between variables hence a problem of multicollinearity exists. This would therefore warrant the elimination of one variable from the empirical model. In addition to computing the correlation coefficients, the probability values of the respective coefficients were estimated. The probability values were applied to test the level of significance of the respective correlation coefficients (Muigai, 2016).

Multicollinearity is a regression problem that arises from interrelation between the independent variables in a model. The current study adopted Variance Inflation Factors (VIF) to test for multicollinearity (Kodongo, Natto & Biekpe, 2015). The statistical program computed the VIF for each independent variable. This was to assess how much the variance of an estimated regression coefficient increases if the predictors were correlated. If VIF= 1.0 then it meant that the factors were not correlated, Meaning there was no multicollinearity. If the VIF was greater than 1.0,

the predictors were moderately correlated but still below the multicollinearity threshold (Cooper & Schindler, 2011). (Cooper & Schindler, 2011) posit that as a rule of thumb, VIF above 5.0 would suggest a multicollinearity problem. A VIF of more than 10 would invalidate the regression model. To address multicollinearity, variables that depict multicollinearity were eliminated based on post estimation VIF values such that they were not entered simultaneously (Kodongo, Natto & Biekpe, 2015).

3.9.3 Heteroscedasticity Test

Heteroscedasticity is one of the classical linear regression assumptions that has to be checked for and if found to exist in the gathered data, to be properly accounted for. The study adopted Breusch-Pagan/Cook-Weisberg test to test for panel level heteroscedasticity. The test was to ascertain whether the constant error term variance existed. Heteroscedasticity exists when 'prop>chi2' is less than 5 percent significance level else stationary. This implied that heteroscedasticity existed and hence the null hypothesis (H_o) was rejected. That meant that the violations of the fundamental regression assumptions had to be corrected by applying robust standard errors instead of the least ordinary square method or Feasible Generalised Least Squares (FGLS) estimation method (Muigai, 2016).

3.9.4 Panel Unit Root Test

Unit root test was held to decide the request for integration of the factors before the experimental model estimation. This is on the grounds that estimation of the observational model without earlier information on the request for a combination of the factors would prompt false regression results. In conducting unit root test, Levin-Lin-Chu Test, Im-Pesaran-Shin Unit-Root Test and Harris-Tzavalis Unit-Root Test were carried out to ensure the robustness of the results. According to the test, when the p-value was less than 5% ($p<.05$), the H_o was rejected. On the other hand, if the P-value was greater than 5% ($p >.05$) then the H_o was accepted. If the result showed that one of the study variables had a unit root, the study differenciated it to run an equation by using variables that were differenced (Irungu, 2019).

3.9.5 Goodness of Fit

The study used R^2 to measure the goodness of fit of the regression model for variables. R^2 is the general variation of the dependent variable of the study which was explained by the variation of independent variables in the regression model. The study model R^2 within was the goodness of fit measure for the individual variables disregarding all the available information between groups. The closer to 1 R^2 was, helped to explain the proportion of the dependent that was captured by the independent variables. The smaller the R^2, the lower the proportion that independent variables explained the dependent variable. Therefore, R^2 ranged between 0 and 100 percent. The analysis statistics measured the significance of the regression model. The critical p-value level of significance was less than 5 percent (Sporta, 2018).

3.9.6 Panel Hausman Test

Two econometric models are core when dealing with panel data. The two models are the REM and FEM. In panel data analysis, it is necessary that the two models must be estimated. However, the question always arises as to which of the two models was more appropriate in fitting the data at hand. The Hausman test becomes handy to choose the best model between REM and FEM (Cooper & Schindler, 2011).

Normally, REM is better than FEM under the H_o due to higher efficiency, while under the alternative hypothesis (H_1). FEM is at least consistent and thus preferred (Cooper & Schindler, 2011). In this same case, FEM appears more prudent to the study. However, the study was cautious that the use of the REM assumes exogeneity of all regressors with the individual REM. Contrary to this, the FEM allows for the endogeneity of all the regressors with the case of individual effects (Baltagi, 2005).

The study ran an Hausman test to establish the appropriate model between FEM or REM with the H_o being that the difference in coefficients was not systematic, whereas in H_1 was the difference in coefficients was systematic. When $p > 0.05$ REM is adopted; when $p < 0.05$ FEM was adopted.

3.9.7 Autocorrelation Test

The study adopted the Wooldridge test to ascertain the presence of autocorrelation in the residuals from the regression model (Muigai, 2016). The autocorrelation problem arises from the serial correlation of the error terms among the variables. Autocorrelation exaggerates the impact of the predictor when in fact they were not. This is a post-estimation diagnostic test. The test adopted null hypothesis of absence of serial correlation. Non acceptance of the null hypothesis meant existence of a given order of serial correlation and henceforth, failure of rejection of the null hypothesis indicated non existence of serial order correlation. However, to mitigate the presence of autocorrelation, the study adopted feasible generalized least squares estimation or robust standard error approach (Muigai, 2016).

3.9.8 Granger causality Test

The Granger and Newbold (1974).) causality test is a statistical hypothesis test usually used in determining whether a certain time series is useful in forecasting another. In this case, the test was conducted to ascertain the direction of causality between board characteristics and financial performance of commercial banks in Kenya and existing long-run relationships. If a linear combination of 1(l) variable is a stationary process of 1(0), then the variables were co-integrated. The concept of co-integration links relationships between integrated processes and the concept of equilibrium. Time series data were mostly in equilibrium relationships over time also referred to as co-integration. Granger and Newbold 1974), showed that if two variables were co-integrated, then they had an error correction representation: Two-time series were said to be co-integrated if, they were integrated in the same order, I(d) and there exists a linear combination of the two variables that was stationary I (0). In the study, Johansen co-integration test was used to test for co-integration among the variables of the model. The presence of co-integration implied that variables move in the same direction in the long run. The relationship can be unidirectional, bidirectional or, no causal relationship. Unidirectional is a one-way relationship, whereas, bidirectional relationship is when the relationshiop occurs in both directions (Shungu, Ngirande & Ndlovu, 2014).

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents empirical findings and a discussion of results on the influence of board characteristics on the financial performance of commercial banks in Kenya, using variables and techniques mentioned in chapter three. The study undertook a descriptive analysis of the study variables to ascertain the general overview of the panel data. The study further carried out suitable regression diagnostic tests on the panel data to establish its appropriateness for extensive statistical analysis. The study used inferential statistics to estimate panel regression models as enumerated in section 3.8 to interpret the results of the study using coefficient values and p-values. In conclusion, a discussion of the findings in line with the theoretical and empirical literature is elaborated in this section.

4.2 Descriptive Statistics Results

This section of the study introduced descriptive statistical results built on the findings of the whole sample based on the industry and further segregated into three tiers: large banks, medium banks and small banks in the sector based on individual bank asset holding as at the end of the year 2018. Banks that had total assets above 5 percent of industry assets were clustered as large, medium banks were those above 1 percent and below 5 percent and small banks were those with total assets below 1 percent. The current study applied descriptive statistics results to give a detailed account of the basic features of data by displaying summaries about the sample and the measures used. The descriptive statistical methods employed were mean, minimum, maximum, standard deviation, skewness, kurtosis and Jarque-Bera of the data sourced on the board characteristics and financial results of commercial banks in Kenya.

4.2.1 Descriptive Statistics for Commercial Banks

Table 4.1 displayed the descriptive analysis of the central tendency, dispersion and normality measures across the banking industry in Kenya. The analysis involved 34 banks that were in operation in the years 2009-2018 in Kenya (CBK, 2019). This

amounted to 340 data points for panel data. The results revealed that the average return on equity of commercial banks in Kenya displayed a maximum of 50.62 percent and a minimum loss of 132.66 percent. This implied that some banks made losses to the tune of 132.66 percent and a maximum profit of 50.62 percent while the average was 12.98 percent of ROE. The mean ROE of 12.98 percent was higher than Wepukhulu (2016), who investigated the impact of corporate governance on the Kenyan banks and found a ROE of 12.38 percent with a loss of 67.00 percent and the highest profit of 125.00 percent. ROE varied with a standard deviation of 21.88 percent on both sides of the mean. The average board size was 8 directors with a minimum of 4 directors and a maximum of 13 directors. This finding was in support of Wepukhulu (2016) who also found a mean of 8 directors of the Kenyan banks. Board size varied with a standard deviation of 2 on both sides from the mean.

Board frequency of meetings had an average of 6 sessions with a maximum of 33 sessions and a minimum of 4 sessions. The average meetings were higher than what Johl, Kaur and Cooper (2015) found of the Malaysian listed firms which ranged between 0 and 24 meetings with an average of 7. This indicates that on average, banks had a session every two months while some banks had three meetings monthly and others a meeting every three months. Sessions varied by 4 on both sides of the mean. CBK as the regulator has allowed the board to set the number of sessions which would facilitate their effective and efficient monitoring of top management.

Board gender diversity indicated a ratio of women to board members of 0.1507. This insinuated that there was 15.07 percent on average female directors in the Kenyan banking sector. This means that there was a woman director in every seven directors across banks. This was at variance with Akpan and Amran (2014) who found board gender diversity of 10.74 percent in Nigerian firms. The maximum ratio of women to board members was 36.36 percent and some banks had no woman director. The study revealed that board gender diversity varied with 11.05 percent from either side of the mean. Board share ownership had an average of 4.73 percent with a minimum of 0.00 percent and a maximum of 29.13 percent. This finding was lower than Akpan and Amran (2014), who found Nigerian firms had on average 15.79 percent board share ownership. This means that some banks did not encourage directors to own shares while others encouraged ownership in Kenya. Board share ownership revealed that it

varied by 6.11 percent from either side of the mean. Bank size had an average of ln 3.3435 with a minimum of negative ln 0.7113 and a maximum of ln 6.3201. The results revealed that bank size varied by ln 1.4285 from either side of the mean.

The skewness test showed whether data was symmetrical or not. Symmetrical is when skewness is zero. When the value of skewness <0, it shows that data was skewed to the left and when >0, it means data was skewed to the right. The study revealed that skewness ranged from negative 2.1602 to the highest positive 3.8973. This meant that some board characteristics were skewed to the left, that is, they had a longer tail to the left and most had more values below the mean and some had a longer tail to the right an indication that they more values than the mean. None of the variables had a skewness of zero displaying that they were not normal. Kurtosis is an expression of the spread of thickness of the dataset. When data is normally distributed panel data display a kurtosis value of 3 which means data is mesokurtic (Muigai, 2016). Data with kurtosis values > 3 means that the data is leptokurtic, whereas when the kurtosis value is <3 means that data is platykurtic. The result revealed that board size, board gender diversity and bank size were platykurtic meaning more values were below the mean of the sample, whereas the return on equity, board frequency of meetings and board share ownership were leptokurtic meaning more values were greater than the mean sample (Muigai, 2016). Some variables had a kurtosis ranging from 1.8494 to the highest value of 24.3432. This indicated that all variables were non-normally distributed as none of the variables had a kurtosis value of 3.

Jarque-Bera test measures the difference between skewness and the kurtosis of each of the variables with those from the normally distributed dataset. The study revealed that all variables had Jarque-Bera test values, which is a product of the relationship between skewness and kurtosis of the dataset from the normal distribution (Shungu, Ngirande & Ndlovu, 2014). The Jarque-Bera values ranged from 9.1126 to 7,314.0560. Below the Jarque-Bera test results, were the respective probability values. The H_o of Jarque-Bera is that the distribution is normal. From the results, the probability is <.05 in all cases we reject the H_o of normal distribution. This finding negated Shungu, Ngirande and Ndlovu (2014), who found that return on equity, the board size, board diversity, board committees, board composition and capital adequacy displayed normal distribution of the panel data. Though normality is an

important assumption of CLRM, Greene (2003), stated that normality is not conformity to statistical analysis for financial data. Table 4.1 displays summary descriptive statistics for all banks in Kenya.

Table 4.1: Descriptive Statistics for all Banks

	ROE	BS	BFM	BGD	BSO	LNBTA
Mean	0.1298	8.3853	5.9029	0.1507	0.0473	3.3435
Median	0.1708	9.0000	4.0000	0.1667	0.0306	3.1014
Maximum	0.5062	13.0000	33.0000	0.3636	0.2913	6.3201
Minimum	-1.3266	4.0000	4.0000	0.0000	0.0000	-0.7113
Std. Dev.	0.2188	2.1179	3.5771	0.1105	0.0611	1.4285
Skewness	-2.1602	-0.0417	3.8973	-0.0280	1.6581	0.0401
Kurtosis	11.2013	2.0517	24.3432	1.8494	5.0621	2.2020
Jarque-Bera	1217.3090	12.8377	7314.0560	18.7983	216.0299	9.1126
Probability	0.0000	0.0016	0.0000	0.0001	0.0000	0.0105
Sum	44.1166	2851.0000	2007.0000	51.2451	16.0717	1136.7850
Sum Sq. Dev.	16.2318	1520.5260	4337.7970	4.1411	1.2668	691.7445
Observations	340	340	340	340	340	340

4.2.2 Descriptive Statistics for Large Banks

Table 4.2 showed the descriptive analysis of the central tendency, dispersion and normality measures for large banks in Kenya. The analysis involved 8 large banks whose total assets exceeded 5 percent of market value for the years 2009-2018 in Kenya (CBK, 2019). This amounted to 80 data points for the panel data. The results indicate that on average financial results of large banks in Kenya had a return on equity ranging from a minimum of 16.37 percent to a maximum of 50.62 percent with a mean of 30.32 percent. The mean of ROE of 30.32 percent was less than the ROAA of 53.00 observed by Terraza (2015), of large banks in the European Union. The ROE of large banks varied with a standard deviation of 7.01 percent from either side of the mean. This meant that all large banks made profits ranging from 16.37 percent to 50.62 percent of equity. Board size had a mean of 10 directors, a minimum of 7 directors and a maximum of 13 directors. This implied that the board size of large banks ranged between 7 directors and 13 directors. This finding was higher than Wepukhulu (2016), who found a mean of 8 directors of Kenya's banking industry. Board size had a standard deviation of 1 indicating that board size varied both sides from the mean by 1.

Large banks had a mean of board frequency of meetings of 6 sittings with a maximum of 20 sittings and a minimum of 4 sittings. This indicated that large banks had on average a session in every two months. The standard deviation was 3 indicating that board frequency of meetings varied both sides from the mean by 3. CBK as the regulator has allowed the board to set the number of meetings which facilitate their effective and efficient monitoring of top management. The finding was in support of Johl, Kaur and Cooper (2015) who observed a mean of 5 meetings in Malaysian listed firms and a range between 0 and 24 meetings.

Board gender diversity outcome revealed that large banks had a woman director in every 5 directors. The maximum number of female directors in large banks had 1 in every 3 directors and a minimum of 1 female in every 12 directors. This means that all large banks had a female director on their boards. The findings show a standard deviation of 0.0777 on either side of the mean. This finding was at variance with Akpan and Amran (2014) who found Nigerian listed firms had a one-woman director in every ten directors.

Board share ownership had an average of 6.66 percent with a minimum of 0.01 percent and a maximum of 29.13 percent. This implied that all large banks encouraged board members to own shares of the bank. This finding was lower than Akpan and Amran (2014) who found Nigerian firms had a mean of 15.79 percent board share ownership. The standard deviation was 0.0683 depicting a variation on either side of the mean. Bank size had an average of ln 5.1863 with a minimum of ln 4.0110 and a maximum of ln 6.3201. Bank size had a variation of 53.04 percent on either side of the mean.

Skewness ranged from negative 0.6014 to highest 2.1215. This meant that some board characteristics had a skewness to the left which means that they had a long-left tail whereas some were skewed to the right meaning they had a long tail to the right. This implied that the panel data was non-normally distributed as none had a zero skewness. However, all the variables had their skewness close to zero. Kurtosis is an expression of the spread of thickness of the dataset. When data is normally distributed panel data display a kurtosis value of 3 which means data is mesokurtic (Muigai, 2016). Data with kurtosis values > 3 means that the data is leptokurtic, whereas when the kurtosis value is <3 means that data is platykurtic. The result revealed that board size, board

gender diversity and bank size were platykurtic meaning more values were below the mean of the sample whereas return on equity, board frequency of meetings and board share ownership were leptokurtic meaning more values were greater than the mean sample (Muigai, 2016). Some variables had a kurtosis ranging from 1.9263 to highest value of 8.0493. This indicates that all variables were non-normally distributed as none of the variables had a kurtosis value of 3.

Jarque-Bera test measures the difference between skewness and the kurtosis of each of the variables with those from the normally distributed dataset. The study revealed that all variables had Jarque-Bera test value which is a product of the relationship between skewness and kurtosis of the dataset from the normal distribution (Shungu, Ngirande & Ndlovu, 2014). The Jarque-Bera values ranged from 1.5891 to 144.9948. Below the Jarque-Bera test results there is the respective probability values. The H_o of Jarque-Bera is that the distribution is normal. From the results, ROE, board size, board gender diversity and bank size had a probability >.05 meaning they were normal and therefore accept H_o that they were normal while board frequency of meetings and board share ownership had a probability value < .05 meaning that they were non-normal. In this case we reject the H_o that board frequency of meetings, and board share ownership were non-normaly distributed. This is a mixed result as opposed to Shungu, Ngirande and Ndlovu (2014) who found all variables displayed normal distribution. Though normality is an important assumption of CLRM, Greene (2003), stated that normality is not conformity to statistical analysis for financial data. Table 4.2 displays summary descriptive statistics for large banks in Kenya.

Table 4.2: Descriptive Statistics for Large Banks

	ROE	BS	BFM	BGD	BSO	LNBTA
Mean	0.3032	10.4750	6.3750	0.2036	0.0666	5.1863
Median	0.2955	10.0000	5.0000	0.2000	0.0429	5.2632
Maximum	0.5062	13.0000	20.0000	0.3636	0.2913	6.3201
Minimum	0.1637	7.0000	4.0000	0.0833	0.0001	4.0110
Std. Dev.	0.0701	1.3592	3.1638	0.0777	0.0683	0.5304
Skewness	0.5889	-0.6014	2.1215	-0.0870	1.3246	-0.2477
Kurtosis	3.3695	2.9579	8.0493	1.9263	3.7806	2.5189
Jarque-Bera	5.0787	4.8280	144.9948	3.9437	25.4245	1.5891
Probability	0.0789	0.0895	0.0000	0.1392	0.0000	0.4518
Sum	24.2557	838.0000	510.0000	16.2881	5.3296	414.9055
Sum Sq. Dev.	0.3882	145.95	790.7500	0.4777	0.3686	22.2215
Obs.	80	80	80	80	80	80

4.2.3 Descriptive Statistics for Medium Banks

Table 4.3 displayed the descriptive analysis of the dispersion, normality and central tendency measures across medium banks in Kenya. There were 9 medium banks during the period under review each having total assets between 1 and 5 percent as of December 2018 (CBK, 2019). This amounted to 90 data point observations for the panel data. The result showed that on average financial results of medium banks in Kenya as measured by ROE had a maximum of 41.62 percent and a minimum of a loss of 76.74 percent with a mean of 14.92 percent. ROE varied with a standard deviation of 20.01 percent on either side of the mean. The results showed the mean ROE was 14.92 percent which was lower than the ROAA of 36.00 found by Terraza (2015), who examined medium banks in the European Union. This meant that some medium banks made profits while others made losses. Board size had a mean of 9 board members, with the lowest membership of 6 and the highest with 12 directors. This implied that the board size of medium banks ranged from 6 to 12 directors, which is above the minimum number of directors set at 5 by the regulator (CBK, 2013). Board size varied with a standard deviation of 2 directors on both sides from the mean which is greater than large banks. This finding was higher than Wepukhulu (2016), who evaluated banks in Kenya and found a mean of 8 directors across the industry.

Board frequency of meetings indicated a mean of 7 sessions with the lowest being 4 meetings and highest 33 meetings. This indicates that some medium banks on average had a session in every three months on the lower side while on the highest some banks had about three meetings in every month. This signifies that there could have been some serious matters which occasioned the board to consider and resolve through holding more meetings culminating to 33 meetings in a year. The average meetings were higher than the six sessions found by Johl, Kaur and Cooper (2015) in Malaysian listed firms who observed an average of 5 meetings with a range between 0 and 24 meetings. The regulator allows the board to set the number of sessions that facilitate effective and efficient monitoring of activities of top management. Gender diversity of the board, measured as a ratio of female directors to total directors, indicated on average there was a woman director in every seven directors in medium banks in Kenya. The highest ratio of female directors in medium banks had a female director in every 4 directors. This implied that medium size banks had a lower ratio of board

gender diversity than that of large banks in Kenya. Some medium banks did not embrace board gender diversity. This was at variance with Akpan and Amran (2014) who evaluated Nigerian listed firms and found board gender diversity had on average one female in every ten directors in the board.

Board share ownership had an average of 4.82 percent with a minimum of 0.00 percent and a maximum of 22.50 percent. This implied that some medium banks encouraged directors to own shares while other banks discouraged ownership of shares by directors. This finding was lower than Vafaei, Ahmed and Mather (2015) who found Australian firms had 11.25 percent board share ownership across the industry. Bank size displayed a mean of ln 3.9261 with a minimum of ln 2.3427 and a maximum of ln 5.2617. Medium banks in Kenya showed a standard deviation of 67.54 percent on either side of the mean.

Skewness ranged from negative 2.0146 to highest 3.4159. This meant that some board characteristics had skewness to the left which means that they had a long-left tail whereas some were skewed to the right meaning they had a long tail to the right. This implied that the panel data was non-normally distributed as none had a zero skewness. However, all the variables had their skewness close to zero. Kurtosis is an expression of the spread of thickness of the dataset. When data is normally distributed panel data display a kurtosis value of 3 which means data is mesokurtic (Muigai, 2016). Data with kurtosis values > 3 means that the data is leptokurtic whereas when the kurtosis value is <3 means that data is platykurtic. The result revealed that board size, board gender diversity and bank size were platykurtic meaning more values were below the mean of the sample whereas return on equity, board frequency of meetings and board share ownership were leptokurtic meaning more values were greater than the mean sample (Muigai, 2016). Some variables had a kurtosis ranging from 2.2147 to highest value of 15.5509. This indicated that all variables were non-normally distributed as none of the variables had a kurtosis value of 3.

Jarque-Bera test measures the difference between skewness and the kurtosis of each of the variables with those from the normally distributed dataset. The study revealed that all variables had Jarque-Bera test value which is a product of the relationship between skewness and kurtosis of the dataset from the normal distribution (Shungu, Ngirande & Ndlovu, 2014). The Jarque-Bera values ranged from 1.4826 to 765.7541. Below the

Jarque-Bera test results there is the respective probability values. The H_o of Jarque-Bera is that the distribution is normal. From the results, board gender diversity and bank size had a probability >.05 meaning they were normally distributed and therefore accept H_o that they were normally distributed while ROE, board size, board frequency of meetings and board share ownership had a probability value < .05 meaning that they wee non-normally distributed. In this case we reject the H_o that ROE, board size, board frequency of meetings and board share ownership were non-normally distributed. This a mixed result as opposed to Shungu, Ngirande and Ndlovu (2014) who found all variables displayed normal distribution. Though normality is an important assumption of CLRM, Greene (2003), stated that normality is not conformity to statistical analysis for financial data. Table 4.3 displayed summary descriptive statistics for medium banks in Kenya.

Table 4.3: Descriptive Statistics for Medium Banks

	ROE	BS	BFM	BGD	BSO	LNBTA
Mean	0.1492	9.0222	6.5667	0.1414	0.0482	3.9261
Median	0.1959	10.0000	4.5000	0.1667	0.0243	3.9716
Maximum	0.4162	12.0000	33.0000	0.2727	0.2250	5.2617
Minimum	-0.7674	6.0000	4.0000	0.0000	0.0000	2.3427
Std. Dev.	0.2001	1.8358	5.3402	0.0804	0.0650	0.6754
Skewness	-2.0146	-0.6355	3.4159	-0.2136	1.6997	-0.2904
Kurtosis	8.2654	2.2147	15.5509	2.3728	4.7328	2.7589
Jarque-Bera	164.8486	8.3704	765.7541	2.1593	54.5940	1.4826
Probability	0.0000	0.0152	0.0000	0.3397	0.0000	0.4765
Sum	13.4259	812.0000	591.0000	12.7293	4.3348	353.3517
Sum Sq. Dev.	3.5642	299.9556	2538.1000	0.5751	0.3761	40.6027
Obs.	90	90	90	90	90	90

4.2.4 Descriptive Statistics for Small Banks

Table 4.4 exhibited summary descriptive statistics of the central tendency, dispersion and normality across small banks in Kenya. The study revealed that there were 17 small banks in Kenya during the years 2009-2018 with each having total assets below 1 percent of the total assets in the industry (CBK, 2013). There was a total of 170 data point observations for panel data. The study revealed that on average financial results of small banks in Kenya as measured by return on equity had a maximum profit of

41.40 percent and a loss of 132.66 percent with a mean of 3.79 percent. The mean of ROE of 3.79 percent was lower than the ROAA of 47.00 found by Terraza (2015) for small banks in the European Union. The study showed that return on equity varied by 22.30 percent on either side of the mean. This implied that some small banks made losses while others made profits. This finding was lower than that of the industry, large banks and medium banks. Board size displayed an average of 7 directors, with the lowest membership of 4 and highest of 10 directors. This implies that board size of small banks ranged from 4 directors to 10 directors. This means that some banks did not observe the minimum board size of 5 set by the regulator (CBK, 2013). Board size varied with a standard deviation of 2 on both sides from the mean which is the same as medium banks. This finding was lower than Aduda, Chogii and Magutu (2013) who observed a mean of 8 directors of the Kenyan commercial banks.

Board frequency of meetings had a mean of 5 sittings with the lowest session of 4 and highest 18 meetings. This implied that some small banks had on average a sitting in every three months as lowest and highest three meeting in every two months. The regulator allows the board to set the number of sessions that facilitate effective and efficient monitoring of activities of top management. Diversity of board as measured by gender shows on average there was a female director in every 8 directors of small banks. The result shows that small banks had a female director in every three directors as highest while some banks had no female director in their board. This shows that small banks had the lowest female director ratio in the industry. Board share ownership had an average of 3.77 percent with a minimum of 0.00 percent and a maximum of 20.30 percent. This meant that some small banks encouraged directors to own shares while other banks discouraged share ownership by directors. The small banks had a higher mean on board share ownership than the industry but lower than the large and medium. Bank size showed an average of ln 2.16780 with a negative ln 0.7113 and a highest of ln 3.4963. Small banks revealed a standard deviation of 73.67 percent both sides of the mean. The mean bank size for small banks was lower than all banks, large and medium banks.

Skewness ranged from negative 2.4769 to highest 2.1566. This means that some board characteristics had skewness to the left which meant that they had a longer tail to the left whereas some were skewed to the right meaning they had a long tail to the right.

This implied that the panel data was non-normally distributed as none had a zero skewness. However, all the variables had their skewness close to zero. Kurtosis is an expression of spread of thickness of the dataset. When data is normally distributed panel data displayed a kurtosis value of 3 which means data is mesokurtic (Muigai, 2016). Data with kurtosis values > 3 means that the data is leptokurtic whereas when kurtosis value is <3 means that data is platykurtic. The result revealed that board size and board gender diversity were platykurtic meaning more values were below the mean of the sample whereas return on equity, board frequency of meetings, board share ownership and bank size were leptokurtic meaning more values were greater than the mean sample (Muigai, 2016). Some variables had a kurtosis ranging from 1.5626 to highest value of 12.8019. This indicated that all variables were non-normally distributed as none of the variables had a kurtosis value of 3.

Jarque-Bera test measures the difference between skewness and the kurtosis of each of the variables with those from the normally distributed dataset. The study revealed that all variables had Jarque-Bera test value which is a product of the relationship between skewness and kurtosis of the dataset from the normal distribution (Shungu, Ngirande & Ndlovu, 2014). The Jarque-Bera values ranged from 1.5618 to 854.3743. Below the Jarque-Bera test results there is their respective probability values. The H_o of Jarque-Bera is that the distribution is normal. From the results, board size had a probability >.05 meaning it was normally distributed and therefore accept H_o that board size normally distributed while ROE, board frequency of meetings, board share ownership and bank size had a probability value < .05 meaning that they were non-normally distributed. In this case we reject the H_o that ROE, board size, board frequency of meetings, board share ownership and bank size were non-normally distributed. This a mixed result as opposed to Shungu, Ngirande and Ndlovu (2014) who found all variables displayed normal distribution. Though normality is an important assumption of CLRM, Greene (2003), stated that normality is not conformity to statistical analysis for financial data. Table 4.4 displayed summary descriptive statistics for small banks in Kenya.

Table 4.4: Descriptive Statistics for Small Banks

	ROE	BS	BFM	BGD	BSO	LNBTA
Mean	0.0379	7.0647	5.3294	0.1308	0.0377	2.1678
Median	0.0799	7.0000	4.0000	0.1429	0.0000	2.2701
Maximum	0.4140	10.0000	18.0000	0.3333	0.2030	3.4963
Minimum	-1.3266	4.0000	4.0000	0.0000	0.0000	-0.7113
Std. Dev.	0.2230	1.5236	2.3020	0.1285	0.0531	0.7367
Skewness	-2.4769	0.0618	2.1566	0.2719	1.7680	-0.9233
Kurtosis	12.8019	2.5470	8.3955	1.5626	5.9333	4.5773
Jarque-Bera	854.3743	1.5618	337.9888	16.7292	149.5090	41.7780
Probability	0.0000	0.4580	0.0000	0.0002	0.0000	0.0000
Sum	6.4350	1201.0000	906.0000	22.2278	6.4073	368.5279
Sum Sq. Dev.	8.4031	392.2882	895.5529	2.7890	0.4764	91.7092
Obs.	17	17	17	17	17	17

4.3 Box Plot

The study adopted a box plot to display the largest and least non-outlier observations for each variable. The line in the box represents the median observations, the observations near the whiskers were the near outliers, while those at the extreme were the far outliers (Muigai, 2016). Figures 4.1 to 4.6 were box plots of the variables under study. The vertical axis depicts the variable while the horizontal axis depicts the years 2009-2018. The box plots for board frequency, board share ownership and return on equity displayed outliers.

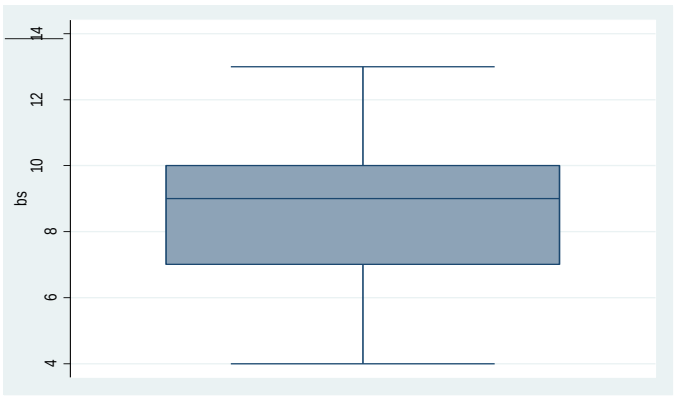

Figure 4.1: Box Plot Graph Board Size.

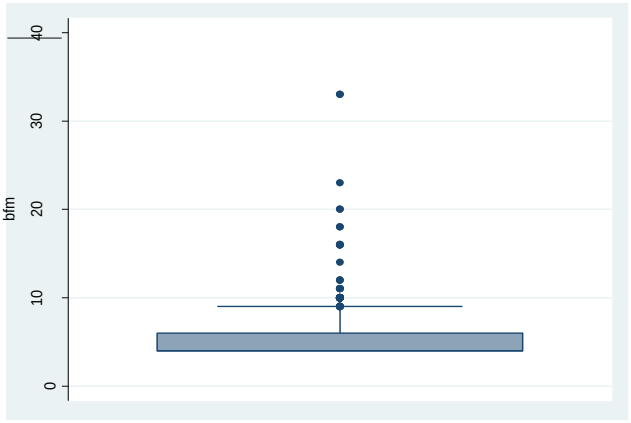

Figure 4.2: Box Plot Graph Board Frequency of Meetings.

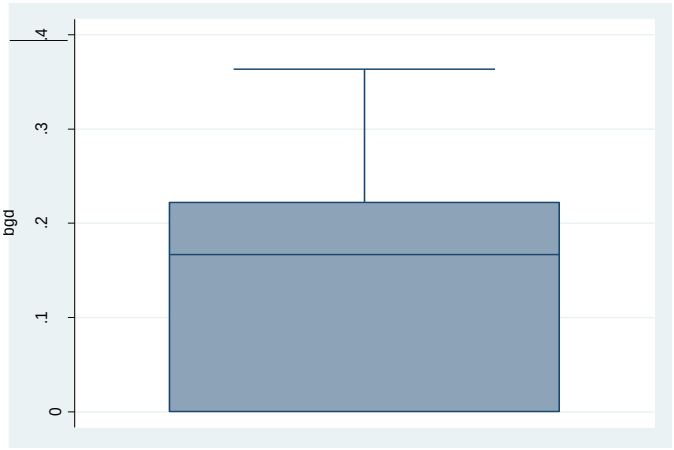

Figure 4.3: Box Plot Graph Board Gender Diversity.

Figure 4.4: Box Plot Graph Board Share Ownership

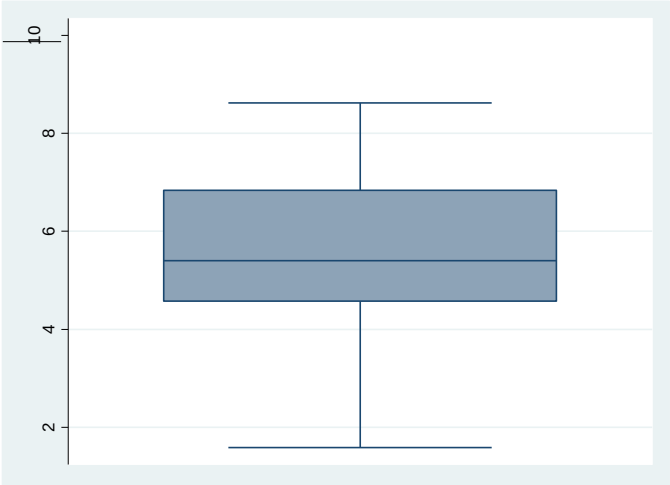

Figure 4.5: Box Plot Graph Bank size

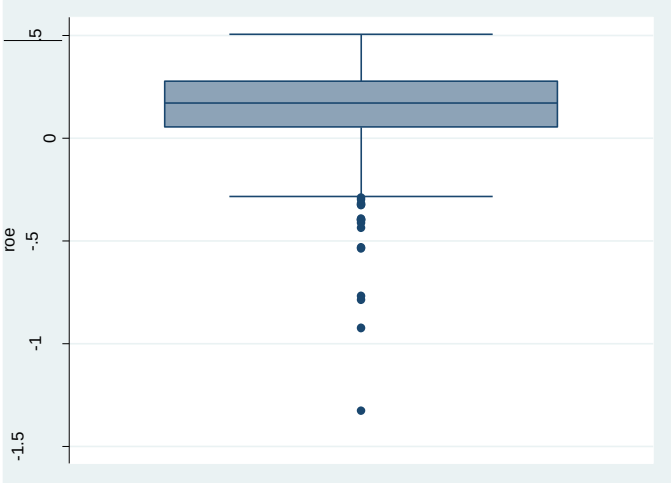

Figure 4.6: Box Plot Graph Return on Equity.

The study further employed whiskers to depict the highest and lowest non-outlier observations (Muigai, 2016). The farther the outliers were from the whisker shows the extremity of the outlier. To obtain normally distributed panel data, the study took care of all potential far outliers by replacing them with the mean Muigai (2016). To achieve this, observed data that was deemed to lie outside the range were replaced with the mean: board frequency of meetings >8, board share ownership > 0.12 and ROE <-0.20. This is in conformity with Muigai (2016) who evaluated the impact of

capital structure on the financial distress of listed firms at the Nairobi Securities Exchange. The study replaced outliers with the mean. After replacing far outliers with the mean, table 4.5 displayed the result which had brought skewness and kurtosis level close to zero and 3 respectively signifying close to normality (Muigai, 2016).

Table 4.5: Overall Descriptive Analysis without Outliers

	ROE	BS	BFM	BGD	BSO	LNBTA
Mean	0.1735	8.3853	4.9539	0.1507	0.0351	3.3435
Median	0.1708	9.0000	4.0000	0.1667	0.0306	3.1014
Maximum	0.5062	13.0000	8.0000	0.3636	0.1755	6.3201
Minimum	-0.1974	4.0000	4.0000	0.0000	0.0000	-0.7113
Std. Dev.	0.1295	2.1179	1.1641	0.1105	0.0394	1.4285
Skewness	-0.2613	-0.0417	0.9847	-0.0280	1.4703	0.0401
Kurtosis	2.8930	2.0517	3.0607	1.8494	5.4643	2.2020
Jarque-Bera	4.0327	12.8377	54.9969	18.7983	208.5351	9.1126
Probability	0.1331	0.0016	0.0000	0.0001	0.0000	0.0105
Sum	58.9825	2851.0000	1684.3390	51.2451	11.9453	1136.7850
Sum Sq. Dev.	5.6826	1520.5260	459.4096	4.1411	0.5262	691.7445
Observations	340	340	340	340	340	340

The following box plots figures 4.7 to 4.9 displayed the results after replacing outliers with respective mean in comparison with figures 4.2, 4.4 and 4.6 which had outliers respectively. Institutions that had board frequency of meetings in excess of 8 were replaced with 5.9029, where board share ownership in excess of 0.1200 were replaced with a mean of 0.0473, and institutions that made losses in excess of 0.2000 ROE were replaced with a mean of 0.1298. The result was as displayed in the following box plots without outliers.

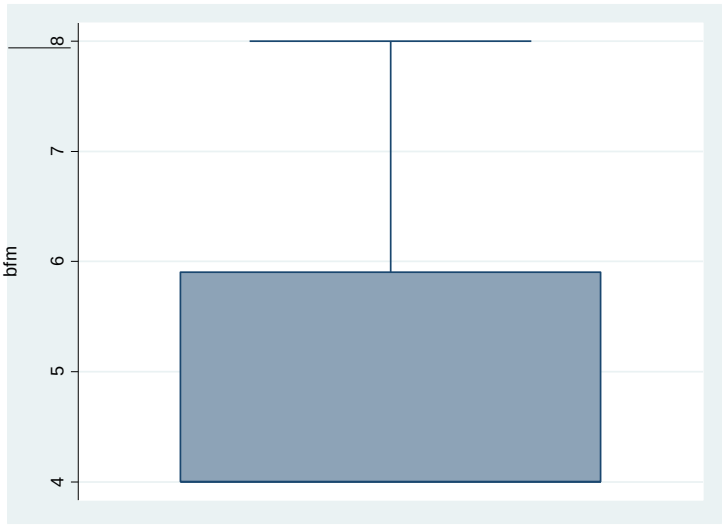

Figure 4.7: Box Plot Graph Board Frequency of Meetings.

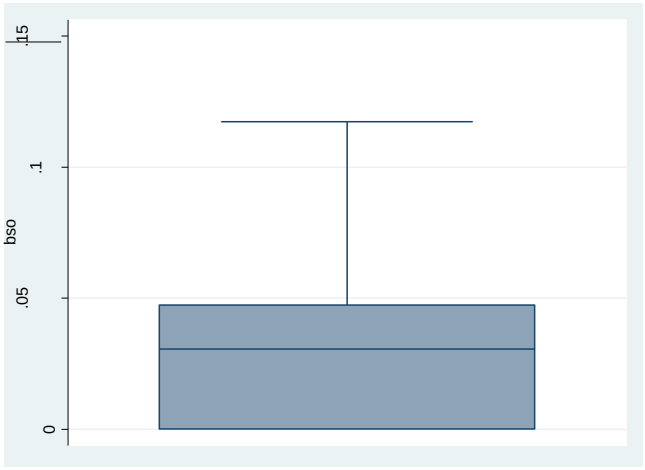

Figure 4.8: Box Plot Graph Board Share Ownership

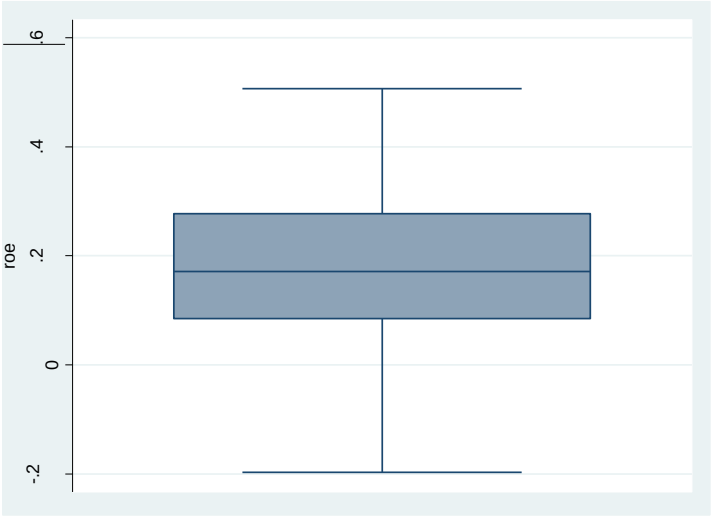

Figure 4.9: Box Plot Graph Return on Equity.

4.3.1 Multicollinearity Test for all Banks

Multicollinearity occurs when more than one independent variable considered in a regression analysis were highly correlated (Cooper & Schindler, 2011). As the degree of correlation between the variables grows, the fluctuation of the regression coefficients gets enhanced (Kothari, 2014). This study adopted Detection tolerance and Variance Inflation Factor (VIF) to ascertain whether multicollinearity existed (Kodongo, Natto & Biekpe, 2015). Incidences where tolerance value was lower than 2 and VIF gets above 10, would implied presence of a multicollinearity problem (O'Brien, 2007). From the results, the mean VIF equals 1.65 and tolerance value of 0.6284 for the study variables which was below 2 and 10 respectively (Kimani, 2015). Therefore, the study concluded that there was moderate multicollinearity among the variables since the mean VIF was below 2. The results also indicate a tolerance limit that was below 1, indicating the absence of multicollinearity. This is in conformity with Kimani (2015) who evaluated how regulations imposed by the government influenced the factors financing of small-scale water investments in Kenya and found tolerance of 0.773 and VIF of 1.315. This implied the study variables had no multicollinearity.

Table 4.6: Multicollinearity Test of all Banks

Variable	VIF	Tolerance
BS	1.94	0.5155
BFM	1.69	0.5924
BGD	1.11	0.9006
BSO	1.72	0.5826
LNBTA	1.82	0.5507
MEAN	1.65	0.6284

4.3.2 Multicollinearity Test for Large Banks

The results of the study variables for large banks indicated a VIF of 1.63 and tolerance value of 0.6268 exhibiting that the panel data had no multicollinearity since the values were below 2 and 10 respectively (Kimani, 2015). Consequently, the study concluded that there existed moderate multicollinearity among the variables of large banks in Kenya since the mean VIF was below 2 and tolerance was below ten. The results also indicate a tolerance limit was below 1 indicating the absence of multicollinearity. The results were in agreement with Kimani (2015) who studied the influence regulations imposed by the government on factors slowing financing of small-scale water investments in Kenya and found tolerance of 0.773 and VIF of 1.315. This indicated there is no multicollinearity in the study variables. Table 4.7 exhibited multicollinearity test of unmoderated large banks in Kenya.

Table 4.7: Multicollinearity Test of Large Banks

Variable	VIF	Tolerance
BS	1.53	0.6522
BFM	1.83	0.5472
BGD	1.41	0.7117
BSO	1.37	0.7284
LNBTA	2.02	0.4944
MEAN	1.63	0.6268

4.3.3 Multicollinearity Test for Medium Banks

The Kenyan medium banks showed a mean VIF of 1.78 and tolerance value of 0.6609 for study variables which were below 2 and 10 respectively (Kimani, 2015). As a result, the study concluded that there existed moderate multicollinearity among the variables of medium banks in Kenya since the mean VIF was below 2 and a tolerance limit was below 1. The results were in agreement with Kimani (2015) who studied the influence of regulations imposed by the government on factors slowing financing of small-scale water investments in Kenya and found tolerance of 0.773 and VIF of 1.315. This indicated there is no multicollinearity in the study variables. Table 4.8 showed multicollinearity test for unmoderated medium banks in Kenya.

Table 4.8: Multicollinearity Test of Medium Banks

Variable	VIF	Tolerance
BS	1.29	0.7760
BFM	2.56	0.3908
BGD	1.04	0.9646
BSO	2.79	0.3589
LNBTA	1.23	0.8142
MEAN	1.78	0.6609

4.3.4 Multicollinearity Test for Small Banks

Small banks in Kenya showed a mean VIF of 1.40 and tolerance value of 0.7458 for study variables for small banks in Kenya which was below 2 (Kimani, 2015). Therefore, the study concluded that there was moderate multicollinearity among the variables of small banks in Kenya since the mean VIF was below 2 and a tolerance limit was below 1 indicating the absence of multicollinearity. The results were in agreement with Kimani (2015) who studied the influence of regulations imposed by the government on factors slowing financing of small-scale water investments in Kenya and found tolerance of 0.773 and VIF of 1.315. This indicated there is no multicollinearity in the study variables. Table 4.9 highlighted the multicollinearity test for unmoderated small banks in Kenya.

Table 4.9: Multicollinearity Test of Small Banks

	VIF	Tolerance
BS	1.20	0.8308
BFM	1.72	0.5824
BGD	1.23	0.8147
BSO	1.75	0.5711
LNBTA	1.08	0.9298
MEAN	1.40	0.7458

4.4 Heteroscedasticity Test

The study used Breusch-Pagan / Cook-Weisberg test to test panel data for heteroscedasticity of the panel data for commercial banks in Kenya. The H_0 is that the error term does not have constant variance (Greece, 2003). The purpose of the test was to ascertain whether constant error term variance existed. The OLS assumed that the variance of error term does not have constant variance (Greece, 2003). First, the FEM was estimated, and the heteroscedasticity test was carried out. Heteroscedasticity exists when 'prop>chi2' was below 5 percent significance level otherwise the panel data was stationary.

4.4.1 Heteroscedasticity Test for Commercial Banks in Kenya

Table 4.10 showed the results of heteroscedasticity test for all banks in Kenya. The results for the unmoderated and moderated models exhibited a p-value of 0.0000. This implied that in both cases heteroscedasticity existed and therefore failed to accept the H_o that there existed a constant error variance but instead accept the H_1 that there was no constant error term. The violations of the fundamental regression assumptions had to be corrected by applying robust standard errors instead of the least ordinary square method or Feasible Generalized Least Squares (FGLS) estimation method (Muigai, 2016). The study adopted robust standard error to evaluate the influence of board characteristics on the financial performance of commercial banks in Kenya.

Table 4.10: Heteroscedasticity Test all Banks in Kenya

Breusch-Pagan / Cook-Weisberg test for Heteroscedasticity **Ho: Constant error variance**				
Model 1		**Model 2**		
chi2(1) =44.40	Prob > chi2 = 0.0000	chi2(1)	= 57.96	Prob > chi2 =0.0000

4.4.2 Heteroscedasticity Test for Large Banks in Kenya

Table 4.11 revealed the results of the heteroscedasticity test for large banks in Kenya. The results for the unmoderated and moderated models exhibited a p-value of 0.0214 and 0.0191 respectively. This implied that heteroscedasticity existed and therefore failed to accept the H_o that there is a constant error variance but instead accept the H_1 that there is no constant error term. The violations of the fundamental regression assumptions had to be corrected by applying robust standard errors instead of the least ordinary square method or FGLS estimation method (Muigai, 2016). In the current study model with robust standard error to scrutinize the effect of board characteristics on the financial performance of large banks in Kenya was adopted.

Table 4.11: Heteroscedasticity Test Large Banks in Kenya

Breusch-Pagan / Cook-Weisberg test for Heteroscedasticity **Ho: Constant error variance**				
Model 1		**Model 2**		
chi2(1) =8.70	Prob > chi2 = 0.0214	chi2(1)	= 8.09	Prob > chi2 =0.0191

4.4.3 Heteroscedasticity Test for Medium Banks in Kenya

Table 4.12 revealed the analysis of the heteroscedasticity test for medium-sized banks in Kenya. The results for the unmoderated model and moderated model exhibit p-value of 0.0000 and 0.0000 respectively. This implied that heteroscedasticity existed and therefore failed to accept the H_o that there is a constant error term but instead accept the H_1 that there is no constant error term. The violations of the fundamental

regression assumptions had to be corrected by applying robust standard errors instead of least ordinary square method or FGLS estimation method (Muigai, 2016). The current study model with robust standard error to examine the influence of board characteristics on financial performance of medium banks in Kenya was adopted.

Table 4.12: Heteroscedasticity Test Medium Banks in Kenya

Breusch-Pagan / Cook-Weisberg test for Heteroscedasticity **Ho: Constant error variance**				
Model 1		**Model 2**		
chi2(1) =26.31	Prob > chi2 = 0.0000	chi2(1)	= 31.93	Prob > chi2 =0.0000

4.4.4 Heteroscedasticity Test for Small Banks in Kenya

Table 4.13 revealed the results of the heteroscedasticity test of small banks in Kenya. The results for the unmoderated model and moderated model exhibited p-value of 0.0179 and 0.0190 respectively. This implied that heteroscedasticity existed and therefore failed to accept the H_o that there is a constant error variance but instead accept the H_1 that there is no constant error term. The violations of the fundamental regression assumptions had to be corrected by applying robust standard errors instead of least ordinary square method or FGLS estimation method (Muigai, 2016). The current study model with robust standard error to scrutinize the effect of board characteristics on the financial performance of small banks in Kenya was adopted.

Table 4.13: Heteroscedasticity Test Small Banks in Kenya

Breusch-Pagan / Cook-Weisberg test for Heteroscedasticity **Ho: Constant error variance**				
Model 1		**Model 2**		
chi2(1) =19.7	Prob > chi2 = 0.0179	chi2(1)	= 18.7	Prob > chi2 =0.0190

4.5. Autocorrelation Test

The study adopted the Wooldridge test to ascertain the presence of autocorrelation in the residuals from the regression model (Muigai, 2016). The existence of autocorrelation would exaggerate the results. In testing for the serial correlation, the study aims at establishing if error terms were not independent from observation to observation.

4.5.1 Autocorrelation Test for all Banks

Table 4.14 demonstrateed that the F-test statistics of all banks had 1 and 33 degrees of freedom. The H_0 was that there is no first-order serial/autocorrelation in the panel data. The F-test statistics values for unmoderated and moderated models were 7.5030 and 6.5830 with their corresponding p-values of 0.0401 and 0.0367 respectively. The result showed that the F-test statistics were lower than the significant level of 0.05. This indicated that there was first-order autocorrelation problem (Muigai, 2016). To sort out the presence of autocorrelation, the study employed robust standard error.

Table 4.14: Wooldridge Test for Autocorrelation Test of all Banks in Kenya

Model 1				**Model 2**			
F(1,33) =	7.5030	Prob > chi2	0.0401	F(1,33) =	6.5830	Prob > chi2	0.0367

Ho: No first-order autocorrelation

4.5.2 Autocorrelation Test for Large Banks

Table 4.15 indicated the F-test statistics for large banks in Kenya had one and seven degrees of freedom. The F-test statistics for unmoderated and moderated models were 8.7000 and 7.0900, with their corresponding p-values of 0.0214 and 0.0191 respectively. The result showed that the F-test statistics for unmoderated and moderated was below the 5 percent significance level. This indicated that there was first-order autocorrelation problem (Muigai 2016). To sort out the presence of autocorrelation, the study employed robust standard error.

Table 4.15: Wooldridge Test for Autocorrelation Test of Large Banks in Kenya

Model 1				Model 2			
F(1,7)=	8.7000	Prob > chi2	0.0214	F(1,7)=	7.0900	Prob > chi2	0.0191

Ho: no first-order autocorrelation

4.5.3 Autocorrelation Test for Medium Banks

Table 4.16 revealed that the F-test statistics for medium banks in Kenya had 1 and 8 degrees of freedom. The F-test statistics for unmoderated and moderated models were 15.8600 and 16.2800, with their corresponding p-values of 0.0040 and 0.0038 respectively. All the p-values were below 5 percent significance level. This signified the presence of first order autocorrelation problem (Muigai 2016). To sort out the presence of autocorrelation, the study employed robust standard error.

Table 4.16: Wooldridge Test for Autocorrelation Test of Medium Banks in Kenya

Model 1				Model 2			
F(1,8)=	15.8600	Prob > chi2=	0.0040	F(1,8)=	16.2800	Prob > chi2	0.0038

Ho: no first-order autocorrelation

4.5.4 Autocorrelation Test for Small Banks

Table 4.17 showed that F-test statistics for small banks in Kenya had 1 and 16 degrees of freedom. The F-test statistics for unmoderated and moderated models were 9.97 and 8.87, with their corresponding p-values of 0.0179 and 0.0190 respectively. All the p-values were below 5 percent significance level. This signified the presence of first order autocorrelation problem (Muigai, 2016). To sort out the presence of autocorrelation, the study employed robust standard error.

Table 4.17: Wooldridge Test for Autocorrelation Test of Small Banks in Kenya

Model 1				Model 2			
F(1,16)=	9.9700	Prob > chi2	0.0179	F(1,16)=	8.8700	Prob > chi2	0.0190

Ho: no first-order autocorrelation

4.6 Panel Unit Root / Stationarity Test

The study applied the panel unit root test to determine the order of integration of the study variables. The test was carried out to determine whether the variables were stationary or non-stationary taking into consideration all panel levels. The study applied the general regression equation to solve the value of ρ:

$Y_{it} = {}_{\alpha} + \rho y_{.it} \pm \mu_{it}$ …….17

Where:

Y= Return on equity

t=1……10 years and

i=1….34 commercial banks

If ρ = 1, meant that the observation Y_{it} was dependent on its lag value Yit_{-1} which meant data was non-stationary. On the other hand, if ρ<1, implied that observation Y_{it} was independent of its lag value Yit_{-1} and therefore the variable was stationary (Granger & Newbold, 1974). This test was necessary to determine that regression results were robust. In conducting the unit root test, Levin-Lin-Chu test for unit root was applied. However, to ensure reliability of the results, the study applied also Im-Pesaran-Shin and Harris-Tzavalis unit root test for robustness. H_0 panels' data contains unit roots. H_1 panels were stationary. The criteria of accepting P-value > 5 percent significance level (Muigai, 2016).

4.6.1 Panel Unit Root / Stationarity Test for all Banks in Kenya

Table 4.18 indicated the panel unit root test for all banks in Kenya. The study adopted Levin-Lin-Chu Unit root test, Im-Pesaran-Shin and Harris-Tzavalis for robustness and

displayed return on equity, board size, board frequency of meetings, board share ownership and bank size had p-values < 5 percent significance level. This therefore implied that the study failed to accept H_0 of panel data had unit roots and accepted H_1 existence of stationarity. This meant that all the variables were stationary and had no panel unit root and hence no need to lag. This was in support of Muigai (2016) who examined the influence of capital structure on financial distress of listed firms at NSE. This implies that all variables were significantly stationary. Hence the result would not be spurious.

Table 4.18: Panel Unit Root / Stationarity Test Results all Banks in Kenya

	Method	**Statistics**	**Probability**
ROE	Levin-Lin-Chu Unit-root test	-11.4875	0.0000
	Im-Pesaran-Shin Unit-root test	-3.2734	0.0005
	Harris-Tzavalis Unit-root test	-0.0188	0.0000
BS	Levin-Lin-Chu Unit-root test	-22.1462	0.0000
	Im-Pesaran-Shin Unit-root test	-2.5087	0.0061
	Harris-Tzavalis Unit-root test	0.2778	0.0463
BFM	Levin-Lin-Chu Unit-root test	-12.3207	0.0000
	Im-Pesaran-Shin Unit-root test	-3.5711	0.0000
	Harris-Tzavalis Unit-root test	0.2652	0.0365
BGD	Levin-Lin-Chu Unit-root test	-6.6928	0.0000
	Im-Pesaran-Shin Unit-root test	-3.5711	0.0002
	Harris-Tzavalis Unit-root test	0.2429	0.0155
BSO	Levin-Lin-Chu Unit-root test	-5.3475	0.0000
	Im-Pesaran-Shin Unit-root test	-4.8590	0.0000
	Harris-Tzavalis Unit-root test	0.0494	0.0000
LNBTA	Levin-Lin-Chu Unit-root test	-3.6213	0.0001
	Im-Pesaran-Shin Unit-root test	-3.7176	0.0001
	Harris-Tzavalis Unit-root test	0.2830	0.0002

4.6.2 Panel Unit Root / Stationarity Test for Large Banks in Kenya

Table 4.19 indicated the panel unit root test for large banks in Kenya. The study used Levin-Lin-Chu Unit root test, Im-Pesaran-Shin and Harris-Tzavalis for robustness and examined return on equity, board size, board frequency of meetings, board share ownership and bank size and found P-values < 5 percent significance level. This meant that the study failed to accept H_o of panel data had unit roots and accepted H_1 existence of stationarity. This implied that all the variables were stationary and had no panel unit root and hence no need to lag. This was in support of Muigai (2016) who

evaluated the influence of capital structure on the financial distress of listed firms at the Nairobi Securities Exchange. This implied that all variables were significantly stationary at all panel levels.

Table 4.19: Panel Unit Root / Stationarity Test Results Large Banks in Kenya

	Method	Statistics	Probability
ROE	Levin-Lin-Chu Unit-root test	-4.3419	0.0000
	Im-Pesaran-Shin Unit-root test	-2.3643	0.0090
	Harris-Tzavalis Unit-root test	0.2016	0.0479
BS	Levin-Lin-Chu Unit-root test	-0.6255	0.0265
	Im-Pesaran-Shin Unit-root test	-2.5383	0.0056
	Harris-Tzavalis Unit-root test	0.1647	0.0479
BFM	Levin-Lin-Chu Unit-root test	-0.4722	0.0184
	Im-Pesaran-Shin Unit-root test	-2.6052	0.0046
	Harris-Tzavalis Unit-root test	-0.1042	0.0001
BGD	Levin-Lin-Chu Unit-root test	1.8702	0.0493
	Im-Pesaran-Shin Unit-root test	-1.5027	0.0365
	Harris-Tzavalis Unit-root test	0.3431	0.0404
BSO	Levin-Lin-Chu Unit-root test	-3.4059	0.0003
	Im-Pesaran-Shin Unit-root test	-2.8773	0.0020
	Harris-Tzavalis Unit-root test	-0.0833	0.0001
LNBTA	Levin-Lin-Chu Unit-root test	-0.1766	0.0096
	Im-Pesaran-Shin Unit-root test	-1.5998	0.0447
	Harris-Tzavalis Unit-root test	0.1796	0.0061

4.6.3 Panel Unit Root / Stationarity Test for Medium Banks in Kenya

Table 4.20 showed the panel unit root test for medium-sized banks in Kenya. The study used Im-Pesaran-Shin, Levin-Lin-Chu Unit root test and Harris-Tzavalis on board size, return on equity, board share ownership, board frequency of meetings, board gender diversity and bank size and revealed P-values < 5 percent significance level. This implied that the study failed to accept H_o of panel data had unit roots and accepted H_1 existence of stationarity. This meant that all the variables of medium banks in Kenya were stationary and had no panel unit root and hence no need to lag. This was as reported by Muigai (2016) who evaluated the influence of capital structure on financial distress of listed firms at Nairobi Securities Exchange. This implied that all variables were significantly stationary.

Table 4.20: Panel Unit Root / Stationarity Test Results Medium Banks in Kenya

	Method	Statistics	Probability
ROE	Levin-Lin-Chu Unit-root test	-4.6838	0.0000
	Im-Pesaran-Shin Unit-root test	-2.2801	0.0113
	Harris-Tzavalis Unit-root test	-0.1696	0.0000
BS	Levin-Lin-Chu Unit-root test	-23.3283	0.0000
	Im-Pesaran-Shin Unit-root test	-2.5383	0.0056
	Harris-Tzavalis Unit-root test	0.6062	0.0479
BFM	Levin-Lin-Chu Unit-root test	-2.8015	0.0025
	Im-Pesaran-Shin Unit-root test	-2.6052	0.0046
	Harris-Tzavalis Unit-root test	-0.1042	0.0001
BGD	Levin-Lin-Chu Unit-root test	2.8869	0.0493
	Im-Pesaran-Shin Unit-root test	-1.5623	0.0465
	Harris-Tzavalis Unit-root test	0.2232	0.0404
BSO	Levin-Lin-Chu Unit-root test	-5.4269	0.0000
	Im-Pesaran-Shin Unit-root test	-2.8773	0.0020
	Harris-Tzavalis Unit-root test	-0.0833	0.0001
LNBTA	Levin-Lin-Chu Unit-root test	-2.1529	0.0157
	Im-Pesaran-Shin Unit-root test	-3.2668	0.0005
	Harris-Tzavalis Unit-root test	0.2118	0.0142

4.6.4 Panel Unit Root / Stationarity Test for Small Banks in Kenya

Table 4.21 revealed the panel unit root test for Kenyan small banks. The study used Im-Pesaran-Shin, Harris-Tzavalis and Levin-Lin-Chu Unit root test for robustness to examine board share ownership, return on equity, board size, board frequency of meetings board gender diversity and bank size and shows P-values < 5 percent significance level. This meant that the study failed to accept H_o of panel data had unit roots and accepted H_1 existence of stationarity. This meant that all the variables of small banks in Kenya were stationary and had no panel unit root and hence no need to lag. This was as reported by Muigai (2016) who examined the influence of capital structure on financial distress of listed firms at Nairobi Securities Exchange. This implied that all variables were significantly stationary.

Table 4.21: Panel Unit Root / Stationarity Test Results Small Banks in Kenya

	Method	Statistics	Probability
ROE	Levin-Lin-Chu Unit-root test	-9.6502	0.0000
	Im-Pesaran-Shin Unit-root test	-1.5437	0.0061
	Harris-Tzavalis Unit-root test	0.0496	0.0001
BS	Levin-Lin-Chu Unit-root test	0.9526	0.0100
	Im-Pesaran-Shin Unit-root test	-3.6941	0.0001
	Harris-Tzavalis Unit-root test	0.2722	0.0117
BFM	Levin-Lin-Chu Unit-root test	0.5782	0.0100
	Im-Pesaran-Shin Unit-root test	-4.4185	0.0000
	Harris-Tzavalis Unit-root test	-0.1662	0.0000
BGD	Levin-Lin-Chu Unit-root test	0.5217	0.0100
	Im-Pesaran-Shin Unit-root test	-1.6241	0.0452
	Harris-Tzavalis Unit-root test	0.2111	0.0292
BSO	Levin-Lin-Chu Unit-root test	0.1049	0.0484
	Im-Pesaran-Shin Unit-root test	-1.3422	0.0498
	Harris-Tzavalis Unit-root test	0.3466	0.0375
LNBTA	Levin-Lin-Chu Unit-root test	-3.1273	0.0009
	Im-Pesaran-Shin Unit-root test	-2.8748	0.0020
	Harris-Tzavalis Unit-root test	0.1834	0.0135

4.7 Correlation Analysis for all Banks

The study applied Pearson-pairwise correlation analysis to evaluate the relationship between board characteristics and financial performance of Kenyan banks (Wepukhulu, 2016). Evaluation of correlation coefficients assisted to reject or accept H_o that there is no correlation between the variables. The degree of correlation between two variables ranges between +1 to -1. A value of +1 or -1 indicates that correlation was a strong positive or strong negative perfect linear relationship between the two variables respectively (Sekaran & Bougie, 2010). A value of zero reveals no correlation relationship existed between the two variables.

4.7.1 Correlation Analysis for across Industry

Table 4.22 indicated a positive and significant correlation between board size and ROE across the industry (r=0.3091, p = 0.0000). This meant that the directional change is the same for board size and ROE across the industry in Kenya. The findings

were in support of Shukeri, Shin, and Shaari (2012) who evaluated the relationship between board characteristics and financial performance of Malaysian listed firms and found a positive and significant correlation between board size and ROE but contradict Adebayo, Olusola and Abiodun (2013) who examined the influence of board characteristics on financial results of Nigerian financial and service listed firms and found a negative but significant correlation between board size and earnings per share. The study found a positive and significant correlation between board frequency of meetings and ROE across the industry (r=0.0910, p = 0.0437). This meant the directional change is the same for board frequency of meetings and ROE of the Kenyan banking sector. This finding negated Sherif and Anwar (2015) who evaluated how board characteristics influenced financial results of listed banks in MENA countries and found a negative correlation of board frequency of meetings and ROAA, NIM and TBQ.

The result displayed a negative but significant correlation between board gender diversity and ROE (r=-0.0963, p = 0.0361). This implied that board gender diversity and ROE of the Kenyan commercial banks move in the opposite directional. This finding negated Shukeri, Shin and Shaari (2012) who examined the influence of board characteristics on financial results of Malaysian listed firms and found had a positive and significant correlation between board gender diversity and ROE. There was a significant and positive correlation between board share ownership and ROE across industry (r=0.0301, p= 0.0457). This meant that the directional change is the same for board share ownership and ROE of commercial banks in Kenya. This study contradicted Shukeri, Shin and Shaari (2012) who studied the influence of board characteristics on financial results of Malaysian listed firms and found no correlation between board share ownership and ROE. There was a positive and significant correlation between bank size and ROE (r=0.4660, p=0.0000). This implies that as the assets of the bank increases, ROE increases too. All variables exhibited multicollinearity between -0.0963 and 0.6651 which was lower than 0.8 hence they were not strongly multicollinearity (Cooper & Schindler, 2011; Muigai, 2016).

Table 4.22: Pearson-pairwise Unmoderated Correlation Coefficient Matrix all Banks in Kenya

	roe	Bs	bfm	bgd	bso	lnbta
roe	1.0000					
bs	0.3091	1.0000				
	(0.0000)					
bfm	0.0910	0.2359	1.0000			
	(0.0437)	(0.0000)				
bgd	-0.0963	0.3062	0.0619	1.0000		
	(0.0361)	(0.0000)	(0.2549)			
bso	0.0301	0.2485	0.6318	0.1253	1.0000	
	(0.0457)	(0.0000)	(0.0000)	(0.0208)		
lnbta	0.4660	0.6651	0.2084	0.1939	0.2445	1.0000
	(0.0000)	(0.0000)	(0.0001)	(0.0003)	(0.0000)	

The study investigated the effect of the moderating variable bank size proxied by the total assets on board characteristics using Pearson-pairwise coefficient matrix. Table 4.23 depicted the Pearson-pairwise correlatoion coefficients of the moderated commercial banks in Kenya. The result showed that moderated board characteristics had muliticollinearity coefficients which ranged from -0.0963 to 0.9560. These values were higher than the range of the unmoderated variables which had ranged from -0.0963 to 0.6651. The P-values were all significant. This indicated the effect of bank size as a moderating variable had an effect on the influence of board characteristics on financial performance across the banking industry. The findings corroborated Wepukhulu (2016) who examined the relationship between corporate governance and financial results of commercial banks in Kenya and found positive and significant correlation between variables under the study.

Table 4.23: Pearson-Pairwise Moderated Correlation Coefficient Matrix all Banks in Kenya

	roe	bs	Bfm	bgd	Bso	Lnbta	Bs*lnbta	Bso*lnbta	Bfm*lnbta	bgd*lnbta	bso*lnbta
roe	1.0000										
bs	0.3091	1.0000									
	0.0000										
bfm	0.0910	0.2359	1.0000								
	0.0437	0.0000									
bgd	-0.0963	0.3062	0.0619	1.0000							
	0.0361	0.0000	0.2549								
bso	0.0301	0.2485	0.6318	0.1253	1.0000						
	0.0457	0.0000	0.0000	0.0208							
lnbta	0.4660	0.6651	0.2084	0.1939	0.2445	1.0000					
	0.0000	0.0000	0.0001	0.0003	0.0000						
bs*lnbta	0.4614	0.8425	0.2237	0.2447	0.2545	0.9336	1.0000				
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
bfm*lnbta	0.2757	0.4730	0.8721	0.1660	0.5915	0.6069	0.6049	0.7113	1.0000		
	0.0000	0.0000	0.0000	0.0021	0.0000	0.0000	0.0000	0.0000			
bgd*lnbta	0.2248	0.5510	0.1825	0.7852	0.2318	0.6821	0.6955	0.3855	0.4812	1.0000	
	0.0000	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
bso*lnbta	0.1475	0.3826	0.6165	0.1736	0.9224	0.4417	0.4543	0.9560	0.7113	0.3855	1.0000
	0.0064	0.0000	0.0000	0.0013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

4.7.2 Correlation Analysis for Large Banks

The study evaluated to ascertain whether unmoderated variables for the eight large-sized banks in Kenya had a correlation and used Pearson-pairwise correlation test. Table 4.24 exhibited a negative and significant correlation between board size and ROE (r=-0.0288, p = 0.0480). This implies that the directional change is in the opposite direction for board size and ROE of large banks in Kenya. The findings affirmed Adebayo, Olusola and Abiodun (2013) who examined the influence of board characteristics on financial results of Nigerian financial and service listed firms and found a negative but significant correlation between board size and earnings per share but contradict Shukeri, Shin, and Shaari (2012) who studied the influence of board characteristics on financial performance of listed firms at Bursa in Malaysia and found a positive and significant correlation between board size and ROE of Malaysian listed firms. The study revealed a positive and significant correlation between board frequency of meetings and ROE of large banks (r=0.0424, p= 0.0089). This meant that the directional change is the same for board frequency of meetings and ROE of large banks in Kenya. This finding negated Sherif and Anwar (2015) who evaluated how board characteristics influenced financial results of listed banks in MENA countries and found a negative correlation between board frequency of meetings and financial performance of MENA banks.

The study revealed a positive and significant correlation between board gender diversity and ROE of large banks (r=0.1232, p = 0.0276). This implied that the directional change was the same for board gender diversity and ROE of large banks in Kenya. This finding supported Shukeri, Shin and Shaari (2012) who evaluated the influence of board characteristics on financial results of Malaysian listed firms and found a positive and significant correlation between board gender diversity and ROE of Malaysian listed firms. The result indicated a negative but significant correlation between board share ownership and ROE of large banks (r=-0.1390, p = 0.0219). This meant that the directional change was in the opposite for board share ownership and ROE of large banks in Kenya. This study negated Shukeri, Shin and Shaari (2012) who studied the influence of board characteristics on financial results of Malaysian listed firms and found no correlation between board share ownership and

ROE. The study found a positive and significant correlation between bank size and ROE (r=0.1076, p=0.0342). All variables exhibited multicollinearity between -0.1390 and 0.5113 which was lower than 0.8 hence they were not strongly multicollinearity (Cooper & Schindler, 2011; Muigai, 2016).

Table 4.24: Pearson-pairwise Unmoderated Correlation Coefficient Matrix Large Banks in Kenya

	ROE	BS	BFM	BGD	BSO	LNBTA
ROE	1.0000					
BS	-0.0288	1.0000				
	0.0480					
BFM	0.0424	0.1553	1.0000			
	0.0089	0.0169				
BGD	0.1232	-0.0739	0.3650	1.0000		
	0.0276	0.0451	0.0009			
BSO	-0.1390	0.0198	0.4886	0.0488	1.0000	
	0.0219	0.0486	0.0000	0.0467		
LNBTA	0.1076	0.5113	0.4633	0.3837	0.0957	1.0000
	0.0342	0.0000	0.0000	0.0004	0.0398	

The study investigated the effect of the moderating variable bank size proxied by the total assets on board characteristics using the Pearson-pairwise coefficient matrix. Table 4.25 shows the Pearson-pairwise correlation coefficients of the moderated board characteristics of large banks in Kenya. The result shows that moderated board characteristics had coefficients that ranged from -0.1390 to 0.9889. These values were higher than the range of the unmoderated variables which had ranged from -0.1390 and 0.5113. Their p-values were all significant. This indicated the effect of the moderating variable (bank size) had a moderating effect on the impact of board characteristics on the financial results of large banks in Kenya. The findings were in support of Wepukhulu (2016) who evaluated the impact of corporate governance on financial results of large banks in Kenya and found a positive and significant correlation between variables under the study.

Table 4.25: Pearson-Pairwise Moderated Correlation Coefficient Matrix Large Banks in Kenya

	ROE	BS	BFM	BGD	BSO	LNBTA	BS*LNBTA	BFM*LNBTA	BGD*LNBTA	BSO*LNBTA
ROE	1.0000									
BS	-0.0288	1.0000								
	0.0480									
BFM	0.0424	0.1553	1.0000							
	0.0089	0.0169								
BGD	0.1232	-0.0739	0.3650	1.0000						
	0.0276	0.0451	0.0009							
BSO	-0.1390	0.0198	0.4886	0.0488	1.0000					
	0.0219	0.0486	0.0000	0.0467						
LNBTA	0.1076	0.5113	0.4633	0.3837	0.0957	1.0000				
	0.0342	0.0000	0.0000	0.0004	0.0399					
BS*LNBTA	0.0456	0.9042	0.2993	0.1353	0.0437	0.7653	1.0000			
	0.0469	0.0000	0.0070	0.0232	0.0470	0.0000				
BFM*LNBTA	0.0533	0.2217	0.9889	0.3961	0.4825	0.5650	0.4039	1.0000		
	0.0464	0.0481	0.0000	0.0003	0.0000	0.0000	0.0002			
BGD*LNBTA	0.1136	0.0399	0.4235	0.9806	0.0895	0.5110	0.2877	0.4765	1.0000	
	0.0316	0.0373	0.0001	0.0000	0.0430	0.0000	0.0097	0.0000		
BSO*LNBTA	-0.1222	0.0759	0.5520	0.1203	0.9864	0.2137	0.1459	0.5620	0.1801	1.0000
	0.0280	0.0350	0.0000	0.0288	0.0000	0.0457	0.0197	0.0000	0.0110	

4.7.3 Correlation Analysis for Medium Banks

The study evaluated whether unmoderated variables for nine medium banks in Kenya had a correlation using the Pearson-pairwise correlation test. Table 4.26 showed a positive and significant correlation between board size and ROE (r=0.1902, p = 0.0426). This implied that the directional change is the same for board size and ROE of medium banks in Kenya. The findings affirmed Shukeri, Shin, and Shaari (2012) who studied the influence of board characteristics on financial results of Malaysian listed firms and found a positive and significant correlation between board size and ROE but contradict Adebayo, Olusola and Abiodun (2013) who examined the influence of board characteristics on financial results of Nigerian financial and service listed firms and found a negative but significant correlation between board size and earnings per share. The study found a positive and significant correlation between board frequency of meetings and ROE (r=0.0570, p = 0.0459). This meant that the directional change was the same for board frequency of meetings and ROE of medium banks in Kenya. This finding contradicted Sherif and Anwar (2015) who evaluated how board characteristics influenced financial results of listed banks in MENA countries and found no correlation between board frequency of meetings and financial performance.

The results showed a negative but significant correlation between board gender diversity and ROE (r=-0.3167, p = 0.0024). This implied that the directional change is in the opposite for board gender diversity and ROE of medium banks in Kenya. This finding negated Shukeri, Shin and Shaari (2012) who studied the influence of board characteristics on financial results of Malaysian listed firms and found a positive and significant correlation between board gender diversity and ROE. The analysis revealed a positive and significant correlation between board share ownership and ROE (r=0.0987, p= 0.0355). This meant that the directional change is the same for board share ownership and ROE of medium banks in Kenya. This study contradicted Shukeri, Shin and Shaari (2012) who studied the influence of board characteristics on financial results of Malaysian listed firms and found no correlation between board share ownership and ROE. There was a positive and significant correlation between bank size and ROE (r=0.1743, p=0.0103). This implies that as the assets of medium banks increase, profits improve. All variables exhibited

multicollinearity between -0.3167 and 0.7778 which was lower than 0.8 hence they were not strongly correlated (Cooper & Schindler, 2011; Muigai, 2016).

Table 4.26: Pearson-Pairwise Unmoderated Correlation Coefficient Matrix Medium Banks in Kenya

	ROE	BS	BFM	BGD	BSO	LNBTA
ROE	1.0000					
BS	0.1902	1.0000				
	0.0426					
BFM	0.0570	0.1958	1.0000			
	0.0459	0.0443				
BGD	-0.3167	0.0878	-0.1015	1.0000		
	0.0024	0.0411	0.0341			
BSO	0.0987	0.3066	0.7778	-0.1246	1.0000	
	0.0355	0.0033	0.0000	0.0242		
LNBTA	0.1743	0.4079	0.1222	0.0616	0.2326	1.0000
	0.0103	0.0001	0.0252	0.0456	0.0274	

The study investigated the effect of the moderating variable bank size proxied by the total assets on board characteristics using Pearson-pairwise coefficient matrix. Table 4.27 showed the Pearson-pairwise correlation coefficients of the moderated board characteristics of medium banks in Kenya. The result showed that moderated board characteristics had coefficients that ranged from -0.3167 to 0.9872. These values were higher than the range of the unmoderated variables which ranged from -0.3167 to 0.7778. Their P-values were all significant. This indicated the effect of bank size as a moderating variable had a moderating effect on the influence of board characteristics on the financial performance of medium banks in Kenya. The findings corroborated Wepukhulu (2016) who evaluated the relationship between corporate governance and financial performance of commercial banks in Kenya and found positive and significant correlation existing between variables under the study.

Table 4.27: Pearson-Pairwise Moderated Correlation Coefficient Matrix of Medium Banks in Kenya

	ROE	BS	BFM	BGD	BSO	LNBTA	BS*LNBTA	BFM*LNBTA	BGD*LNBTA	BSO*LNBTA
ROE	1.0000									
BS	0.1902	1.0000								
	0.0426									
BFM	0.0570	0.1958	1.0000							
	0.0459	0.0443								
BGD	-0.3167	0.0878	-0.1015	1.0000						
	0.0024	0.0411	0.0341							
BSO	0.0987	0.3066	0.7778	-0.1246	1.0000					
	0.0355	0.0033	0.0000	0.0242						
LNBTA	0.1743	0.4079	0.1222	0.0616	0.2326	1.0000				
	0.0103	0.0001	0.0251	0.0456	0.0274					
BS*LNBTA	0.2074	0.8552	0.1895	0.0714	0.3130	0.7671	1.0000			
	0.0498	0.0000	0.0474	0.0450	0.0027	0.0000				
BFM*LNBTA	0.0606	0.2538	0.9815	-0.0500	0.7756	0.2812	0.3185	1.0000		
	0.0457	0.0158	0.0000	0.0464	0.0000	0.0073	0.0022			
BGD*LNBTA	-0.2531	0.1943	-0.0305	0.9444	-0.0076	0.3252	0.3016	0.0602	1.0000	
	0.0161	0.0467	0.7754	0.0000	0.0494	0.0018	0.0039	0.0457		
BSO*LNBTA	0.0728	0.3246	0.7546	-0.0593	0.9872	0.3254	0.3758	0.7786	0.0735	1.0000
	0.0495	0.0018	0.0000	0.0458	0.0000	0.0018	0.0003	0.0000	0.0491	

4.7.4 Correlation Analysis for Small Banks

The study ascertained whether unmoderated variables for seventeen small banks in Kenya had correlation using Pearson-pairwise correlation test. Table 4.28 revealed a negative but significant correlation between board size and ROE (r=-0.1425, p = 0.0464). This means that the directional change is in the opposite for board size and ROE of small banks in Kenya. The findings affirmed Adebayo, Olusola and Abiodun (2013) who examined influence of board characteristics on financial results of Nigerian financial and service listed firms and found a negative but significant correlation between board size and earnings per share but contradict Shukeri, Shin, and Shaari (2012) who studied the influence of board characteristics on financial results of Malaysian listed firms and found a positive and significant correlation between board size and ROE. The study found a positive and significant correlation between board frequency of meetings and ROE (r=0.0152, p = 0.0484). This implied that the directional change was the same for board frequency of meetings and ROE of small banks in Kenya. This finding negated Sherif and Anwar (2015) who evaluated how board characteristics influenced financial results of listed banks in MENA countries and found no correlation between board frequency of meetings and financial performance.

The results showed a negative but significant correlation between board gender diversity and ROE (r=-0.2931, p = 0.0001). This implies that the directional change is in the opposite for board gender diversity and ROE of small banks in Kenya. This finding negated Shukeri, Shin and Shaari (2012) who studied the influence of board characteristics on financial results of Malaysian listed firms and found a positive and significant correlation between board gender diversity and ROE. The analysis had a negative but significant correlation between board share ownership and ROE (r=-0.1723, p = 0.0246). This meant that the directional change was in the opposite for board share ownership and ROE of small banks in Kenya. This study contradicted Shukeri, Shin and Shaari (2012) who studied the influence of board characteristics on financial results of Malaysian listed firms and found no correlation between board share ownership and ROE. Bank size had a positive and significant correlation with ROE (r=0.1049, p=0.0174). This implied that as the assets of small banks improves return on equity also improves. All variables exihibited multicollinearity between -

0.2931 and 0.6169 which was lower than 0.8 hence they were not strongly multicollinearity (Cooper & Schindler, 2011; Muigai, 2016).

Table 4.28: Pearson-Pairwise Unmoderated Correlation Coefficient Matrix Small Banks in Kenya

	ROE	BS	BFM	BGD	BSO	LNBTA
ROE	1.0000					
BS	-0.1425	1.0000				
	0.0464					
BFM	0.0152	0.2301	1.0000			
	0.0484	0.0025				
BGD	-0.2931	0.3316	0.0339	1.0000		
	0.0001	0.0000	0.0466			
BSO	-0.1723	0.1514	0.6169	0.1829	1.0000	
	0.0246	0.0488	0.0000	0.0169		
LNBTA	0.1049	0.0579	0.1080	-0.1342	0.1786	1.0000
	0.0174	0.0453	0.0161	0.0481	0.0198	

The study ascertained the effect of the moderating variable bank size proxied by the total assets on board characteristics using Pearson-pairwise coefficient matrix. Table 4.29 revealed Pearson-pairwise multicollinearity coefficients of the moderated board charateristics of small banks in Kenya. The result revealed that moderated board characteristics had coefficients which ranged from -0.2931 to 0.9676. These values were higher than the range of the unmoderated variables which had ranged from -0.2931 and 0.6169. Their P-values were all significant. This indicated the effect of bank size as a moderating variable had a moderating effect on the influence of board characteristics on the financial performance of small banks in Kenya. The findings corroborated Wepukhulu (2016) who assessed the relationship between corporate governance and financial results of commercial banks in Kenya and found positive and significant correlation between variables under the study.

Table 4.29: Pearson-Pairwise Moderated Correlation Coefficient Matrix of Small Banks in Kenya

	ROE	BS	BFM	BGD	BSO	LNBTA	BS*LNBTA	BFM*LNBTA	BGD*LNBTA	BSO*LNBTA
ROE	1.0000									
BS	-0.1425	1.0000								
	0.0464									
BFM	0.0152	0.2301	1.0000							
	0.0484	0.0025								
BGD	-0.2931	0.3316	0.0339	1.0000						
	0.0001	0.0000	0.0466							
BSO	-0.1723	0.1514	0.6169	0.1829	1.0000					
	0.0246	0.0488	0.0000	0.0169						
LNBTA	0.1049	0.0579	0.1080	-0.1342	0.1786	1.0000				
	0.0174	0.0453	0.0161	0.0481	0.0198					
BS*LNBTA	0.0329	0.4858	0.1896	0.0410	0.2060	0.8215	1.0000			
	0.0467	0.0000	0.0133	0.0460	0.0070	0.0000				
BFM*LNBTA	0.0548	0.1767	0.8102	-0.0235	0.5786	0.6032	0.6240	1.0000		
	0.0478	0.0211	0.0000	0.0476	0.0000	0.0000	0.0000			
BGD*LNBTA	-0.2240	0.3154	0.1164	0.8899	0.2938	0.2236	0.3757	0.2386	1.0000	
	0.0033	0.0000	0.1306	0.0000	0.0001	0.0034	0.0000	0.0017		
BSO*LNBTA	-0.1912	0.1817	0.6308	0.2043	0.9676	0.2818	0.3086	0.6691	0.3359	1.0000
	0.0125	0.0177	0.0000	0.0075	0.0000	0.0002	0.0000	0.0000	0.0000	

4.8 Granger Causality Test

The study carried out Granger causality test to ascertain the causal link between board characteristics variables (board size, board frequency of meetings, board gender diversity and board share ownership) and financial performance (ROE) of commercial banks in Kenya (Shungu, Ngirande & Ndlovu, 2014). Variable A is said to Granger-cause of variable B, if the lags of A can improve a forecast for variable B this is unidirectional. When variable A improves the forecast of variable B and vise versa, then it is bidirectional. However, when there is no improvement, then there is no causal relationship. In a Granger causality test, under H_0 that variable A does not Granger-cause variable B, all the coefficients on the lags of variable A was zero in the equation for variable B (Granger, 1983). A Wald chi2 test was commonly used to test for Granger causality. To carry out the test, Vector Autoregressive (VAR) model was estimated from which the test was carried out. In carrying out the Granger causality test an optimal lag of 2 years was used (Shungu, Ngirande & Ndlovu, 2014).

Table 4.30 displayed the results of granger causality test of Kenya commercial banks. The result showed that there was unidirectional causality between return on equity and bank size, board gender diversity and board size and bank size and board frequency of meetings. This implied that causality runs one direction and not vise versa. This is in line with Olarewaju and Adeyemi (2015) who found unidirectional causality between liquidity and profitability for some Nigerian banks. The result also displays bidirectional causality between board frequency of meetings and board size, and also between bank size and board size. This meant that causality was running both ways. The result was in support of Shungu, Ngirande and Ndlovu (2014) who found bidirectional causality between return on equity, independent board characteristics and board size. The study therefore rejected H_0 of granger causality between board gender diversity, board size, board frequency of meetings, bank size and board share ownership. The other variables which did not cause granger causality were reported in the table below. Table 4.30 showed granger causality test for the banking industry.

Table 4.30: Unmoderated Granger Causality Test all Banks in Kenya

Null Hypothesis:	Obs	F-Statistic	Prob.	
BS does not Granger Cause ROE	338	0.9991	0.3693	
ROE does not Granger Cause BS		1.6719	0.1895	
BFM does not Granger Cause ROE	338	0.0921	0.9120	
ROE does not Granger Cause BFM		1.5111	0.2222	
BGD does not Granger Cause ROE	338	0.0461	0.9549	
ROE does not Granger Cause BGD		0.4700	0.6254	
BSO does not Granger Cause ROE	338	0.9373	0.3927	
ROE does not Granger Cause BSO		0.1250	0.8826	
LNBTA does not Granger Cause ROE	338	2.5342	0.0809	
ROE does not Granger Cause LNBTA		6.5907	0.0016	Unidirectional
BFM does not Granger Cause BS	338	4.5557	0.0112	Bidirectional
BS does not Granger Cause BFM		3.1982	0.0421	Bidirectional
BGD does not Granger Cause BS	338	3.0759	0.0475	Unidirectional
BS does not Granger Cause BGD		0.7282	0.4835	
BSO does not Granger Cause BS	338	1.3182	0.2690	
BS does not Granger Cause BSO		0.1548	0.8567	
LNBTA does not Granger Cause BS	338	5.9870	0.0028	Bidirectional
BS does not Granger Cause LNBTA		4.3325	0.0139	Bidirectional
BGD does not Granger Cause BFM	338	1.8095	0.1653	
BFM does not Granger Cause BGD		1.6119	0.2011	
BSO does not Granger Cause BFM	338	1.4337	0.2399	
BFM does not Granger Cause BSO		0.0879	0.9159	
LNBTA does not Granger Cause BFM	338	3.4429	0.0331	Unidirectional
BFM does not Granger Cause LNBTA		2.6099	0.0750	
BSO does not Granger Cause BGD	338	0.1558	0.8558	
BGD does not Granger Cause BSO		1.5578	0.2121	
LNBTA does not Granger Cause BGD	338	0.0220	0.9783	
BGD does not Granger Cause LNBTA		0.2344	0.7911	
LNBTA does not Granger Cause BSO	338	0.4486	0.6389	
BSO does not Granger Cause LNBTA		1.8105	0.1652	

4.8.1 Granger Causality Test for Large Banks

The study performed causality test on large banks to ascertain the causality linkage between board characteristics and the financial results (Shungu, Ngirande & Ndlovu, 2014). Table 4.31 depicted the result which showed unidirectional causality relationship flowing from return on equity to board frequency of meetings, return on equity to board gender diversity, return on equity to bank size, bank size to board

size. This meant there was causality relationship flowing from return on equity to board frequency of meetings, return on equity to board gender diversity, return on equity to bank size, bank size to board size and not vice versa. This was in line with Olarewaju and Adeyemi (2015) who found unidirectional causality between liquidity to profitability for some Nigerian banks. Table 4.31 showed how all the variables related to each other in terms of causality test of Kenyan large banks.

Table 4.31: Unmoderated Granger Causality Test Large Banks in Kenya

Null Hypothesis:	Obs	F-Statistic	Prob.	
BS does not Granger Cause ROE	78	0.0507	0.9506	
ROE does not Granger Cause BS		2.0323	0.1384	
BFM does not Granger Cause ROE	78	0.4650	0.6300	
ROE does not Granger Cause BFM		3.2137	0.0460	Unidirectional
BGD does not Granger Cause ROE	78	1.1375	0.3262	
ROE does not Granger Cause BGD		3.6956	0.0296	Unidirectional
BSO does not Granger Cause ROE	78	0.8470	0.4329	
ROE does not Granger Cause BSO		0.4016	0.6707	
LNBTA does not Granger Cause ROE	78	0.3221	0.7257	
ROE does not Granger Cause LNBTA		3.2873	0.0430	Unidirectional
BFM does not Granger Cause BS	78	1.1561	0.3204	
BS does not Granger Cause BFM		0.6596	0.5201	
BGD does not Granger Cause BS	78	1.8956	0.1575	
BS does not Granger Cause BGD		0.8889	0.4155	
BSO does not Granger Cause BS	78	1.1054	0.3365	
BS does not Granger Cause BSO		1.3757	0.2591	
LNBTA does not Granger Cause BS	78	2.9555	0.0458	Unidirectional
BS does not Granger Cause LNBTA		0.6866	0.5065	
BGD does not Granger Cause BFM	78	0.5973	0.5530	
BFM does not Granger Cause BGD		0.0523	0.9491	
BSO does not Granger Cause BFM	78	1.6948	0.1908	
BFM does not Granger Cause BSO		0.1034	0.9019	
LNBTA does not Granger Cause BFM	78	0.3900	0.6785	
BFM does not Granger Cause LNBTA		1.2340	0.2971	
BSO does not Granger Cause BGD	78	0.2929	0.7470	
BGD does not Granger Cause BSO		0.7392	0.4810	
LNBTA does not Granger Cause BGD	78	0.2952	0.7452	
BGD does not Granger Cause LNBTA		0.0441	0.9569	
LNBTA does not Granger Cause BSO	78	0.6127	0.5446	
BSO does not Granger Cause LNBTA		0.28151	0.7555	

4.8.2 Granger Causality Test for Medium Banks

The study performed causality test on the Kenyan medium banks to ascertain the causality linkage between board characteristics and the financial results of commercial banks (Shungu, Ngirande & Ndlovu, 2014). Table 4.32 depicted the result which showed unidirectional causality relationship running from board size to return on equity, return on equity to bank size and board share ownership to board frequency of meetings. This implied that there was causality relationship running from bord size to return on equity, return on equity to bank size, board share ownership to board frequency of meetings and not vice versa. This affirmed Olarewaju and Adeyemi (2015) who found unidirectional causality between liquidity to profitability for some Nigerian banks. Table 4.32 showed how all the variables related to each other in terms of causality test of Kenyan medium banks.

Table 4.32: Unmoderated Granger Causality Test Medium Banks in Kenya

Null Hypothesis:	Obs	F-Statistic	Prob.	
BS does not Granger Cause ROE	88	2.4582	0.0492	Unidirectional
ROE does not Granger Cause BS		1.6753	0.1935	
BFM does not Granger Cause ROE	88	0.8734	0.4213	
ROE does not Granger Cause BFM		0.5532	0.5772	
BGD does not Granger Cause ROE	88	1.8971	0.1565	
ROE does not Granger Cause BGD		0.5749	0.5650	
BSO does not Granger Cause ROE	88	0.0842	0.9193	
ROE does not Granger Cause BSO		0.0010	0.9990	
LNBTA does not Granger Cause ROE	88	1.1718	0.3149	
ROE does not Granger Cause LNBTA		3.3385	0.0403	Unidirectional
BFM does not Granger Cause BS	88	0.1230	0.8844	
BS does not Granger Cause BFM		0.1429	0.8670	
BGD does not Granger Cause BS	88	0.9642	0.3855	
BS does not Granger Cause BGD		0.2193	0.8036	
BSO does not Granger Cause BS	88	0.7029	0.4980	
BS does not Granger Cause BSO		0.0059	0.9941	
LNBTA does not Granger Cause BS	88	0.1388	0.8706	
BS does not Granger Cause LNBTA		0.9075	0.4075	
BGD does not Granger Cause BFM	88	1.0787	0.3448	
BFM does not Granger Cause BGD		0.5463	0.5812	
BSO does not Granger Cause BFM	88	2.6795	0.0475	Unidirectional
BFM does not Granger Cause BSO		1.7930	0.1728	
LNBTA does not Granger Cause BFM	88	0.5113	0.6016	
BFM does not Granger Cause LNBTA		0.8146	0.4463	
BSO does not Granger Cause BGD	88	0.1429	0.8670	
BGD does not Granger Cause BSO		0.3515	0.7047	
LNBTA does not Granger Cause BGD	88	1.4177	0.2481	
BGD does not Granger Cause LNBTA		0.7472	0.4769	
LNBTA does not Granger Cause BSO	88	0.5488	0.5797	
BSO does not Granger Cause LNBTA		0.9015	0.4099	

4.8.3 Granger Causality Test for Small Banks

The study performed causality test on the Kenyan medium banks to ascertain the causality linkage between board characteristics and the financial results of commercial banks (Shungu, Ngirande & Ndlovu, 2014). Table 4.33 depicted the result which showed unidirectional causality relationship running from return on equity to board size, return on equity to bank size and board gender diversity to bank size. This implied that there is causality relationship running from return on equity to board size, return on equity to bank size, board gender diversity to bank size and not vice versa. This is in conformity with Olarewaju and Adeyemi (2015) who found unidirectional causality between liquidity to profitability for some Nigerian banks. Table 4.33 showed how all the variables related to each other in terms of causality test of Kenyan small banks.

Table 4.33: Unmoderated Granger Causality Test Small Banks

Null Hypothesis:	Obs	F-Statistic	Prob.	
BS does not Granger Cause ROE	168	2.2184	0.1121	
ROE does not Granger Cause BS		4.4718	0.0129	Unidirectional
BFM does not Granger Cause ROE	168	1.1724	0.3122	
ROE does not Granger Cause BFM		2.6708	0.0722	
BGD does not Granger Cause ROE	168	2.8043	0.0635	
ROE does not Granger Cause BGD		1.7641	0.1746	
BSO does not Granger Cause ROE	168	0.8015	0.4504	
ROE does not Granger Cause BSO		0.7921	0.4546	
LNBTA does not Granger Cause ROE	168	0.2880	0.7501	
ROE does not Granger Cause LNBTA		3.6349	0.0285	Unidirectional
BFM does not Granger Cause BS	168	0.6248	0.5366	
BS does not Granger Cause BFM		0.4026	0.6692	
BGD does not Granger Cause BS	168	1.0949	0.3370	
BS does not Granger Cause BGD		0.1608	0.8516	
BSO does not Granger Cause BS	168	0.4006	0.6706	
BS does not Granger Cause BSO		0.0784	0.9246	
LNBTA does not Granger Cause BS	168	0.0857	0.9179	
BS does not Granger Cause LNBTA		0.4687	0.6267	
BGD does not Granger Cause BFM	168	0.9350	0.3947	
BFM does not Granger Cause BGD		0.1742	0.8403	
BSO does not Granger Cause BFM	168	0.5741	0.5643	
BFM does not Granger Cause BSO		0.9252	0.3985	
LNBTA does not Granger Cause BFM	168	0.2850	0.7524	
BFM does not Granger Cause LNBTA		0.4408	0.6443	
BSO does not Granger Cause BGD	168	0.2896	0.7489	
BGD does not Granger Cause BSO		0.0692	0.9332	
LNBTA does not Granger Cause BGD	168	0.0401	0.9607	
BGD does not Granger Cause LNBTA		3.3925	0.0360	Unidirectional
LNBTA does not Granger Cause BSO	168	0.2323	0.7930	
BSO does not Granger Cause LNBTA		0.7097	0.4933	

4.9 Diagnostic Tests for REM or FEM Models

The study applied diagnostic tests to ascertain a suitable regression model for the study. Two estimation approaches were applied to the panel data analysis: Fixed Effects Model (FEM) and Random Effect Model (REM). The study carried out the following panel data tests to identify the best regression model for the current study.

4.9.1 REM or Pooled OLS Model Specification Tests

According to Bell and Kelvyn (2015) Breusch-Pagan Lagrange Multiplier (LM) test should be used to ascertain whether to use REM regression or Pooled OLS model in analyzing panel data. The H_o: that there is no significant difference across units (no panel effect). The result exihibited chi2 of 286.12 and p=0.0000. From the results, p=0.00 percent was lower than 5 percent significance level. We therefore fail to accept the H_o and accept the H_1 that there was a significant difference effectiveness among commercial banks in Kenya. We therefore adopted the REM (Sporta, 2018). Table 4.34 revealed the results of LM test unmoderated variables.

Table 4.34: Lagrange Multiplier Test - (Breusch-Pagan) for Unmoderated

Estimated results:	**Var**	**sd = sqrt(Var)**
Roe	0.0479	0.2188
E	0.0211	0.1452
U	0.0208	0.1444
Test: Var(u) = 0	chibar2(01) = 286.12	Prob > chibar2 = 0.0000

This study introduced bank size as a moderating variable to assess its effect on the influence of board characteristics on the financial performance of commercial banks in Kenya. The study used Breusch-Pagan Lagrange multiplier (LM) test to test moderated variables. Analysis revealed the effect of moderating variable bank size on the independent variables. The result showed chi-bar2 of unmoderated regression model was 286.12, which declined to 223.45 revealing a significance effect of the moderating variable (bank size) on the influence of board characteristics on the financial performance of the all banks in Kenya. The P-value remained the same at 0.0000 percent which is lower than 5 percent significance level. This implied that the

moderating variable (bank size) had significant differences on financial results among themselves. The study therefore failed to accept the H_o and accepted the H_1. Based on Breusch-Pagan LM test pooled effects model was not to be adopted but REM for this study. Irungu (2019) used Breusch-Pagan in studying the impact of firm level factors on financial results of listed firms at the Nairobi Securities Exchange and established error term had a constant variance (homoscedasticity). Table 4.35 Lagrange Multiplier test results for moderated variables.

Table 4.35: Lagrange Multiplier Test - (Breusch-Pagan) for Moderated

Estimated results:	**Var**	**sd = sqrt(Var)**
ROE	0.0479	0.2188
E	0.0205	0.1432
U	0.0143	0.1197
Test: Var(u) = 0	chibar2(01) = 223.45	Prob > chibar2 = 0.0000

According to Bell and Kelvyn (2015) Breusch-Pagan Lagrange multiplier (LM) test should be used to ascertain whether to use REM regression or Pooled OLS model regression when using panel data. The H_0 there is no significant difference across units (no panel effect). The result exihibited chi2 of 17.21 and p=0.0000. From the results, p=0.00 percent was lower than 5 percent significance level. We therefore fail to accept the H_o and accept the H_1 that there was a significant difference across units. We therefore adopted the REM (Sporta, 2018). Table 4.36 showed the results of LM test unmoderated variables of large banks in Kenya.

Table 4.36: Lagrange Multiplier Test - (Breusch-Pagan) for unmoderated Large Banks

Estimated results:	Var	sd = sqrt(Var)
Roe	0.0049	0.0701
E	0.0033	0.0459
U	0.0030	0.0549
Test: Var(u) = 0	chibar2(01) = 17.21	Prob > chibar2 = 0.0000

This study introduced bank size as a moderating variable to assess its effect on the influence of board characteristics on the financial performance of large banks in Kenya. The study used Breusch-Pagan Lagrange multiplier (LM) test to test moderated variables. Analysis revealed the effect of moderating variable bank size on the independent variables. The result showed chi-bar2 of unmoderated regression model was 17.21, which increased to 26.4 revealing significance effect of the moderating variable (bank size) over the independent variables. The P-value remained the same at 0.0000 percent which is lower than 5 percent significance level. This implied that the moderating variable (bank size) had significant effect on the influence of board characteristics on the financial results of large banks in Kenya. The study therefore failed to accept the H_o and accepted the H_1. Based on Breusch-Pagan LM test pooled effects model was not adopted but REM for this study. Table 4.37 below showed Lagrange Multiplier test results for moderated variables of large banks in Kenya.

Table 4.37: Lagrange Multiplier Test - (Breusch-Pagan) for moderated Large Banks

Estimated results:	**Var**	**sd = sqrt(Var)**
ROE	0.0049	0.0701
E	0.0021	0.0459
U	0.0000	0.0000
Test: Var(u) = 0	chibar2(01) = 26.4	Prob > chibar2 = 0.0000

According to Bell and Kelvyn (2015) Breusch-Pagan Lagrange multiplier (LM) test should be used to ascertain whether to use REM regression or Pooled OLS model regression when using panel data. The H_o stated there is no significant difference across units (no panel effect). The result exihibited chi2 of 77.05 and p=0.0000. From the results, p=0.00 percent was lower than 5 percent significance level. We therefore fail to accept the H_o and accept the H_1 that there was a significant difference on effectiveness across units. The study therefore adopted REM. Table 4.38 indicated the results of LM test of unmoderated variables of medium banks in Kenya.

Table 4.38: Lagrange Multiplier Test - (Breusch-Pagan) for unmoderated Medium Banks

Estimated results:	Var	sd = sqrt(Var)
Roe	0.0400	0.2001
E	0.0195	0.1396
U	0.0348	0.1865
Test: Var(u) = 0	chibar2(01) = 77.05	Prob > chibar2 = 0.0000

This study introduced bank size as a moderating variable to assess its effect on the influence of board characteristics on the financial performance of medium banks in Kenya. The study used Breusch-Pagan Lagrange multiplier (LM) test to test moderated variables. Analysis revealed the effect of moderating variable bank size on the independent variables. The results showed chi-bar2 of unmoderated regression model was 77.05 which declined to 71.14 revealing significance effect of the moderating variable (bank size) over the influence of independent variables on ROE. The P-value remained the same at 0.0000 percent which is lower than 5 percent significance level. This implied that the moderating variable (bank size) had significant effect on the independent variables on the financial results of medium banks in Kenya. The study therefore failed to accept the H_o and accepted the H_1. Based on Breusch-Pagan LM test pooled effects model was not to be adopted but REM was adopted for this study (Sporta, 2018). Table 4.39 showed the Lagrange Multiplier test results for moderated variables of small banks in Kenya.

Table 4.39: Lagrange Multiplier Test - (Breusch-Pagan) for moderated Medium Banks

Estimated results:	Var	sd = sqrt(Var)
ROE	0.0400	0.2001
E	0.0190	0.1380
U	0.0000	0.0000
Test: Var(u) = 0	chibar2(01) = 71.14	Prob > chibar2 = 0.0000

According to Bell and Kelvyn (2015) Breusch-Pagan Lagrange multiplier (LM) test should be used to ascertain whether to use REM regression or Pooled OLS model regression when using panel data. The H_o there is no significant difference across units (no panel effect). The result exihibited chi2 of 54.04 and p=0.0000. From the results, p=0.00 percent was lower than 5 percent significance level. We therefore fail to accept the H_o and accept the H_1 that there was a significant difference across units. We therefore adopted the REM (Sporta, 2018). Table 4.40 showed the results of LM test unmoderated variables of small banks in Kenya.

Table 4.40: Lagrange Multiplier Test - (Breusch-Pagan) for unmoderated Small Banks

Estimated results:	**Var**	**sd = sqrt(Var)**
Roe	0.0497	0.2230
E	0.0286	0.1691
U	0.0169	0.1301
Test: Var(u) = 0	chibar2(01) = 54.04	Prob > chibar2 = 0.0000

This study introduced bank size as a moderating variable to assess its effect on the influence of board characteristics on the financial performance of small banks in Kenya. The study used Breusch-Pagan Lagrange multiplier (LM) test to test moderated variables. Analysis revealed the effect of moderating variables bank size on the influence of the independent variables on ROE of small banks in Kenya. The results show chi-bar2 of unmoderated regression model was 54.04 which declined to 44.32 revealing significant effect of the moderating variable (bank size) over the independent variables in the financial performance. The p-value remained the same at 0.0000 percent which is lower than 5 percent significance level. This implied that the moderating variable (bank size) had significant differences on financial results among themselves. The study therefore failed to accept the H_o and accepted the H_1. Based on Breusch-Pagan LM test pooled effects model was not to be adopted but REM for this study. Table 4.41 indicated Lagrange Multiplier test results for moderated variables of small banks in Kenya.

Table 4.41: Lagrange Multiplier Test - (Breusch-Pagan) for unmoderated Small Banks

Estimated results:	Var	sd = sqrt(Var)
ROE	0.0497	0.2230
E	0.0288	0.1697
U	0.0190	0.1378
Test: Var(u) = 0	chibar2(01) = 44.32	Prob > chibar2 = 0.0000

4.10 REM or FEM – Hausman Test

The study used Hausman test to determine whether REM or FEM to be used in panel data (Cooper & Schindler, 2011). Hausman test basically established whether the unique errors were correlated with the regressors, the H_o that REM was suitable. However, the study was cautious that the use of the REM assumes that all regressors exogeneity with the REM. Contrary to this, the FEM allows for endogeneity of all the regressors with the case of individual effects (Baltagi, 2005). To ensure the validity and reliability of the estimated model parameters, Hausman test was used to ascertain the appropriate regression model between the FEM and REM for unmoderated variables.

4.10.1 REM or FEM – Hausman Test for Commercial Banks

The study carried out Hausman's specification test to establish a suitable model to be used in the analysis (Baltagi, 2005). The result reveals p=0.0030 which is less than 5 percent significance level. The study therefore failed to accept the H_o difference in coefficient not systematic in favour of H_1 that difference in coefficient was systematic. In conclusion, the test found that there was presence of heterogeneity problem meaning FEM was adopted and dropped the REM for unmoderated variables (Muigai, 2016). Table 4.42 indicated Hausman test results of unmoderated variables of commercial banks in Kenya.

Table 4.42: Hausman Test Results for Unmoderated Variables all Banks

	(b) Fixed	(B) Random.	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
BS	-0.0122	0.0146	-0.0267	0.0151
BFM	-0.0033	-0.0017	-0.0016	0.0015
BGD	-0.7169	-0.7198	0.0029	0.2547
BSO	0.5125	0.3561	0.1565	0.6864

chi2(4) = 16.03 Prob>chi2 = 0.0030

Ho: difference in coefficients not systematic

The study introduced moderating variable bank size to determine moderating effect on the influence of explanatory variables on financial performance of commercial banks. The result depicts p= 0.0001 which translate to 0.01 percent which is below 5 percent significance level. This means that there was absence of endogeneity problem. We adopt FEM and drop REM for the moderated variables. The moderated variables showed a drop in the p-value from 0.0030 to 0.0001 for unmoderated and moderated respectively. This implied that the moderating variable bank size had a moderating effect on the influence of independent variables on the financial performance of all bank in Kenya. This finding mirror Nodeh, Anuar, Ramakrishnan and Raftnia, (2016) who examined the effect of bank size as a moderating variable on the influence of board characteristics on ROE and ROA of banks in Malaysia. Table 4.43 highlighted hausman test results for moderated variables.

Table 4.43: Hausman Test Results for Moderated Variables all Banks

	(b) Fixed	(B) Random.	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
BS	-0.0505	-0.0192	-0.0313	0.0214
BFM	-0.0075	-0.0061	-0.0014	0.0126
BGD	-0.1986	-0.7096	0.5111	0.4573
BSO	4.3790	1.3714	3.0076	1.0670
LNBTA	-0.0089	-0.0042	-0.0047	0.0083
BS*LNBTA	0.0085	0.0059	0.0026	0.0032
BFM*LNBTA	0.0006	0.0011	-0.0005	0.0028
BGD*LNBTA	-0.1171	0.0152	-0.1323	0.0973
BSO*LNBTA	-0.9744	-0.2870	-0.6874	0.2257

chi2(4) = 32.88 Prob>chi2 = 0.0001

Ho: Difference in coefficients not systematic

4.10.2 REM or FEM – Hausman Test for Large Banks

The study carried out Hausman's specification test to establish a suitable model to be used in the analysis (Baltagi, 2005). The result shows p=0.0197 which is less than 5 percent significance level. The study therefore failed to accept the H_o difference in coefficient not systematic in favour of H_1 that difference in coefficient was systematic. In conclusion, the test found that there was presence of heterogeneity problem meaning FEM was adopted and dropped the REM for unmoderated variables. Table 4.44 revealed Hausman test results unmoderated variables of large banks in Kenya.

Table 4.44: Hausman Test Results for Unmoderated Variables of Large Banks

	(b) Fixed	(B) Random.	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
BS	0.0157	0.0010	0.0148	0.0081
BFM	-0.0044	-0.0028	-0.0017	0.0024
BGD	-0.6766	-0.1761	-0.5005	0.2439
BSO	-0.2611	-0.1156	-0.1454	0.3886

chi2(4) = 6.02 Prob>chi2 = 0.0197

Ho: difference in coefficients not systematic

The study introduced the moderating variable, bank size, to determine moderating effect on the influence on board characteristics on the ROE of large banks in Kenya. The result depicts p= 0.0000 which translate to 0.00 percent below 5 percent significance level. This means that there was absence of endogeneity problem. We adopt FEM and drop REM for the moderated variables. The moderated variables showed a drop in the P-value from 0.0197 to 0.0000 for unmoderated and moderated respectively. This implies that the moderating variable bank size had a moderating effect on the influence of independent variables on the dependenrt variable. This finding mirror Nodeh, Anuar, Ramakrishnan and Raftnia, (2016) who examined how bank size moderated board characterics of banks in Malaysia. Table 4.45 revealed hausman test results for moderated variables large banks in Kenya.

Table 4.45: Hausman Test Results for Moderated Variables Large Banks

	(b) Fixed	(B) Random.	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
bs	-0.0028	-0.0464	0.0436	0.0125
bfm	-0.1659	-0.0485	-0.1174	0.0306
bgd	6.0712	3.1863	2.8849	0.7541
bso	0.7243	0.5896	0.1347	1.2221
lnbta	-0.0117	-0.0181	0.0063	0.0108
bs*lnbta	0.0063	0.0085	-0.0022	0.0018
bfm*lnbta	0.0288	0.0095	0.0193	0.0055
bgd*lnbta	-1.3073	-0.5861	-0.7212	0.1438
bso*lnbta	-0.1678	-0.1375	-0.0303	0.2876
chi2(4) = 42.69			Prob>chi2 = 0.0000	
Ho: Difference in coefficients not systematic				

4.10.3 REM or FEM – Hausman Test for Medium Banks

The study carried out Hausman's specification test to establish a suitable model to be used in the analysis (Baltagi, 2005). The result shows p=0.0297 which is less than 5 percent significance level. The study therefore failed to accept the H_o difference in coefficient not systematic in favour of H_1 that difference in coefficient was systematic. In conclusion, the test found that there was presence of heterogeneity problem meaning FEM was adopted and dropped the REM for unmoderated variables. Table 4.46 revealed Hausman test results unmoderated variables of medium banks in Kenya.

Table 4.46: Hausman Test Results for Unmoderated Variables of Medium Banks

	(b) Fixed	(B) Random.	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
BS	0.0044	0.0070	-0.0025	0.0329
BFM	0.0019	0.0007	0.0012	0.0020
BGD	-1.0154	-0.9889	-0.0264	0.4837
BSO	1.4084	0.2825	1.1259	2.1838
chi2(4) = 16.02			Prob>chi2 = 0.0297	
Ho: difference in coefficients not systematic				

The study introduced the moderating variable, bank size, to determine moderating effect on the influence of the independent variables on the dependent variable. The result depicted p= 0.0000 which translate to 0.00 percent below 5 percent significance level. This meant that there was absence of endogeneity problem. We adopt FEM and drop REM for the moderated variables. The moderated variable showed a drop in the p-value from 0.0297 to 0.0000 for unmoderated and moderated variables respectively. This implied that the moderating variable bank size had a moderating effect on the influence of independent variables on the dependent variable. This finding mirror Nodeh, Anuar, Ramakrishnan and Raftnia, (2016) who examined how bank size moderated board characterics of banks in Malaysia. Table 4.47 indicated hausman test results for moderated variables medium banks in Kenya.

Table 4.47: Hausman Test Results for Moderated Variables of Medium Banks

	(b) Fixed	**(B) Random.**	**(b-B) Difference**	**sqrt(diag(V_b-V_B)) S.E.**
bs	-0.0907	0.0043	-0.0950	0.0727
bfm	0.0257	-0.0387	0.0643	0.0556
bgd	3.6434	0.6753	2.9681	2.0131
bso	8.7524	7.4827	1.2697	4.4269
lnbta	0.0321	0.0820	-0.0499	0.0336
bs*lnbta	0.0194	0.0021	0.0173	0.0088
bfm*lnbta	-0.0062	0.0083	-0.0145	0.0121
bgd*lnbta	-0.9241	-0.3422	-0.5819	0.2947
bso*lnbta	-1.3118	-1.7003	0.3886	0.8095
chi2(4) = 41.48			Prob>chi2 = 0.0000	
Ho: Difference in coefficients not systematic				

4.10.4 REM or FEM – Hausman Test for Small Banks

The study carried out Hausman's specification test to establish a suitable model to be used in the analysis (Baltagi, 2005). The result showed p=0.0127 which is less than 5 percent significance level. The study therefore failed to accept the H_o difference in coefficient not systematic in favour of H_1 that difference in coefficient was systematic. In conclusion, the test found that there was presence of heterogeneity problem meaning FEM was adopted and dropped the REM for unmoderated variables. Table 4.48 revealed Hausman test results unmoderated variables of smal banks.

Table 4.48: Hausman Test Results for Unmoderated Variables of Small Banks

	(b) Fixed	(B) Random.	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
BS	-0.0885	-0.0314	-0.0571	0.0346
BFM	-0.0327	-0.0112	-0.0214	0.0099
BGD	-0.0549	-0.5199	0.4649	0.4820
BSO	2.4344	0.2743	2.1602	1.5805
chi2(4) = 12.73			Prob>chi2 = 0.0127	
Ho: difference in coefficients not systematic				

The study introduced moderating variable bank size to determine moderating effect on the influence of independent variables on the dependent variable. The result depicted p= 0.0105 which translate to 1.05 percent below 5 percent significance level. This means that there was absence of endogeneity problem. We adopt FEM and drop REM for the moderated variables. The moderated variable shows a drop in the p-value from 0.0127 to 0.0105 for unmoderated and moderated variables respectively. This implied that the moderating variable bank size had a moderating effect on the influence of independent variables on ROE. This finding mirror Nodeh, Anuar, Ramakrishnan and Raftnia, (2016) who evaluated the effect of bank size as a moderating variable on the influence of board characterics on financial performance of commercial banks in Malaysia. Table 4.49 showed hausman test results for moderated variables small banks in Kenya.

Table 4.49: Hausman Test Results for Moderated Variables of Small Banks

	(b) Fixed	(B) Random.	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
bs	-0.1183	-0.0418	-0.0765	0.0424
bfm	0.0038	-0.0061	0.0099	0.0216
bgd	0.0829	-0.3759	0.4588	0.6708
bso	4.6150	2.2009	2.4142	1.6789
lnbta	0.0137	0.0157	-0.0020	0.0083
bs*lnbta	0.0114	0.0038	0.0076	0.0050
bfm*lnbta	-0.0140	-0.0013	-0.0127	0.0067
bgd*lnbta	-0.0192	-0.0447	0.0256	0.0980
bso*lnbta	-0.4586	-0.8043	0.3457	0.1669
chi2(4) = 16.55			Prob>chi2 = 0.0105	
Ho: Difference in coefficients not systematic				

4.11 Bivariate Regression Analysis

Regression analysis was carried to evaluate the influence of board characteristics on the return on equity of commercial banks in Kenya. Regression analysis assists to unravel factors behind observed spatial patterns while modelling, examinining and exploring their influence. Based on the results obtained from the Hausman test, the study adopted FEM as exihibited in tables 4.34 to 4.49 for unmoderated and moderated variables respectively.

4.11.1 Influence of Board Size on Financial Performance of Commercial Banks.

The first study variable was to determine the influence of board size on ROE across industry. The study used FEM to establish P-value. The result revealed board size had a positive and significant effect on ROE across industry (β= 1.4444, p=0.0000). This meant that board size had a positive and significant influenced on ROE. Any additional director was likely to increase ROE of commercial banks in Kenya by 1.4444 units. This was supported by the overall significance of 0.0000. The result further revealed that board size explained 45.99 percent of ROE of the commercial banks in Kenya. This was supported by R^2 of 45.99 percent while 54.01 percent was accounted for by other variables not considered in the study model. The results implied the linkage of board size and return on equity was statistically significant.

This study was in support of Yasser, Entebang and Mansor (2011) who found board size had significantly influenced ROE of listed firms at Karachi Stock Exchange. However, Bebeji, Mohamed and Tanko (2015) found board size had negatively but significantly influenced ROE of listed Nigerian commercial banks. This meant that larger boards were more effective than boards with smaller number of directors. This finding was in support of agency theory on the principal and agent relationship. The more severe the agency conflicts, the poorer financial performance the bank would experience. The bigger the board size the more efficient and easier to monitor, control effectively and efficiently top management enabling better decisions resulting to improved financial performance. Table 4.50 exhibited unmoderated model on the influence of board size on financial performance of commercial banks in Kenya.

Table 4.50: Unmoderated Model on the Influence of Board Size on financial Performance of all Banks in Kenya

Source	**SS**	**df**	**Ms**		**Number of Obs**	**340**
Model	51.3930	1	51.3930		F(1, 338)=	35.25
Residual	492.8447	338	1.4581		Prob > F	0.0000
Total	544.2376	339	1.6054		R-squared	0.4599
					Adj R-squared	0.4392
					Root MSE	1.2075
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BS	1.4444	0.2433	5.9400	0.0000	0.9658	1.9229
CONS	-0.7001	0.5132	-1.3600	0.1730	-1.7095	0.3093

The unmoderated FEM on the influence of board size was fitted as follows:

$ROE_{(IND)}$= -0.7001+1.4444(BS)……18

Moderation effect is felt when variable Z changes the impact of variable X on variable Y by increasing or lowering the hypothesized influence (Sauer & Dick, 2003). The study introduced a moderating variable (bank size) to ascertain the effect of the influence of board size on ROE of all banks in Kenya. The results revealed that bank size had a significant moderating effect on the influence of board size and return on equity as corroborated by the p < 5 percent significance level. The same was supported by the overall p= 0.0000, which was < 5 percent significant level. Unmoderated board size had R^2 of 45.99 percent which changed to 53.76 percent resulting to a change by 7.77 percent which implied that bank size had a positive and significant moderating effect on the influence of board size on ROE across all banks in Kenya. This meant that bank size positively moderates the influence of board size on return on equity of commercial banks in Kenya. The findings were in comformity with Nodeh, Anuar, Ramakrishnan and Raftnia, (2016) who found bank size had a moderating influence on return on equity of Malaysian commercial banks. This implied that the bigger the bank the more profitable it becomes and the more frexible it becomes to introduce a variety of profitable products in the market. Therefore, transaction cost theory becomes handy. Table 4.51 showed moderated board size model on the influence of board size on financial performance of all banks in Kenya.

Table 4.51: Moderated Board Size Model on the influence of Board Size on Financial Performance of all Banks in Kenya

Source	**SS**	**df**	**Ms**		**Number of Obs**	**340**
Model	163.494	3	54.4979		F(4, 335)=	48.09
Residual	380.744	336	1.1332		Prob > F	0.0000
Total	544.238	339	1.6054		R-squared	0.5376
					Adj R-squared	0.5236
					Root MSE	1.0645
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BS	-0.6676	0.0618	-10.8000	0.0281	-1.8843	0.54905
LNBTA	0.2439	0.0418	5.8000	0.0456	-0.5781	1.06586
BS*LNBTA	0.1246	0.0187	6.6000	0.0451	-0.2442	0.49338
CONS	2.0011	1.2836	1.5600	0.1200	-0.5239	4.5261

The moderation effect of bank size on influence of board size and bank performance was fitted as follows:

$ROE_{(IND)} = 2.0011-0.6676(BS)+ 0.2439(LNBTA) +0.1246(BS*LNBTA)$ …….19

The study evaluated the relationship of board size and return on equity of large banks in Kenya. The result depicted that board size had positively and significantly influenced ROE of large banks (β= 0.0130, p=0.0395). This implied that large board size resulted to improved ROE of large banks. This meant any additional director resulted to increased return on equity by 0.0130 units of large banks in Kenya. The same was supported by the overall p=0.0395 which was significant. The result further showed that board size explained 41.45 percent variation of financial results across large banks. This leaves 58.55 percent which can be explained by the variables not considered in the study model. This was supported by R^2 of 41.45 percent. This meant the linkage of board size and the financial results of large banks was statistically significant. The study findings were consistent with Terraza (2015) who investigated three panels' data for large banks, medium banks and small banks to put into context European banks in accordance to their size. The estimation revealed that there was existence of positively and significantly financial perfornce persistence for the banks that were of medium size. However, the study refuted

findings on small and large banks. Table 4.52 exhibited FEM on unmoderated board size of large banks in Kenya.

Table 4.52: FEM on Unmoderated Board Size across Large Banks

Source	**SS**	**df**	**Ms**		**Number of Obs**	**80**
Model	0.0003	1	0.0003		F(1, 338)=	0.0000
Residual	4.2020	78	0.0539		Prob > F	0.0395
Total	4.2022	79	0.0532		R-squared	0.4145
					Adj R-squared	0.4050
					Root MSE	0.2321
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BS	0.0130	0.0019	7.0000	0.0395	-0.3639	0.3898
CONS	3.3554	0.4437	7.5600	0.0000	2.4720	4.2388

The FEM on unmoderated board size across large banks was fitted as follows:

$ROE_{(LB)}$=3.3554+0.0130(BS)…….20

Moderation effect was felt when variable Z changes the impact of variable X on variable Y by increasing or lowering the hypothesized influence (Sauer & Dick, 2003). The study introduced a moderating variable (bank size) to examine the effect on the influence of board size on ROE of large banks in Kenya. The results revealed that bank size had a negative but significant effect on the influence of board size on ROE across large banks in Kenya (β= -0.0780, p=0.0484). R^2 support this result as unmoderated board size had R^2 of 41.45 percent which changed to 50.56 percent resulting to a change by 9.11 percent thereby indicating that bank size had a positive and significant effect on the influence of Board size on ROE of large banks in Kenya. The findings were in comformity with Nodeh, Anuar, Ramakrishnan and Raftnia, (2016) who found bank size had a moderating influence on return on equity in Malaysian banks. Table 4.53 moderated board size across large banks in Kenya.

Table 4.53: FEM on Moderated Board Size across Large Banks

Source	SS	df	Ms		Number of Obs	80
Model	0.1497	4	0.0374		F(4, 75)=	0.6900
Residual	4.0526	75	0.0540		Prob > F	0.0460
Total	4.2022	79	0.0532		R-squared	0.5056
					Adj R-squared	0.4958
					Root MSE	0.2325
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BS	0.2144	0.1009	2.1250	0.0491	-3.5555	3.9842
LNBTA	0.2724	0.0913	3.0000	0.0477	-1.5457	2.0905
BS*LNBTA	-0.0780	0.0388	-2.0000	0.0484	-0.8502	0.6941
CONS	2.4457	4.4216	0.5500	0.5820	-6.3626	11.2540

The moderation effect of bank size on the influence of board size and financial performance of large banks was fitted as follows:

$ROE_{(LB)}$= 2.4457+0.2144(BS)+ 0.2724(LNBTA) -0.0780(BS*LNBTA) …….21

The study examined the behaviour of medium banks on the effect of board size on financial performance of medium banks in Kenya. The result depicted that board size had positive and significant influenced on ROE of medium banks in Kenya (β =0.0207, p=0.0073). This meant that the larger the board the better financially on ROE of medium banks in Kenya. This implied any additional director resulted to increased ROE by 0.0207 units of medium banks in Kenya. The result further shows that board size explained 43.62 percent variation of financial results across medium banks. This leaves 56.38 percent which can be explained by the variables not considered in the study model. This was supported by R^2 of 43.62 percent. This meant the linkage of board size and the financial results of medium banks was statistically significant. The study findings were consistent with Terraza (2015) who investigated three panels' data of large banks, medium banks and small banks to put into context European banks in accordance to their size. The estimation revealed that there was existence of positively and significantly influence of board size on financial performance for the banks that were of medium size. However, the study refuted findings on small and large banks. Table 4.54 FEM on unmoderated board size across medium banks.

Table 4.54: FEM on Unmoderated Board Size across Medium Banks

Source	**SS**	**df**	**Ms**		**Number of Obs**	**90**
Model	0.1289	1	0.1289		F(1, 88)=	3.3000
Residual	3.4353	88	0.0390		Prob > F	0.0073
Total	3.5642	89	0.0400		R-squared	0.4362
					Adj R-squared	0.4252
					Root MSE	0.1976
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BS	0.0207	0.0011	18.2000	0.0073	-0.0019	0.0434
CONS	-0.0378	0.0105	-3.600	0.0190	-0.2465	0.1708

The FEM on unmoderated board size across medium banks was fitted as follows:

$ROE_{(MB)}$= -0.0378 +0.0207 (BS)……22

Moderation effect is felt when variable Z changes the impact of variable X on variable Y by increasing or lowering the hypothesized influence (Sauer & Dick, 2003). The study introduced a moderating variable (bank size) against board size and the ROE of medium banks. The result revealed that bank size had a negative but significant effect on the influence of board size on the ROE of medium banks in Kenya (β =-0.0863, p=0.0455). The R^2 of unmoderated board size had R^2 = 43.62 percent which changed to 55.61 percent resulting to a change by 11.99 percent thereby indicating that bank size had a positive and significant effect on the influence of Board size on ROE of medium banks in Kenya. This finding was in comformity with Nodeh, Anuar, Ramakrishnan and Raftnia, (2016) who found bank size had a moderating influence on return on equity in Malaysian banks. Table 4.55 moderated board size model on the influence of board size on financial performance of medium banks in Kenya.

Table 4.55: FEM on Moderated Board Size across Medium Banks

Source	**SS**	**df**	**MS**		**Number of obs =**	**90**
Model	0.1998	4	0.0500		F(4, 85)	1.2600
Residual	3.3644	85	0.0396		Prob > F	0.0291
Total	3.5642	89	0.0400		R-squared	0.5561
					Adj R-squared	0.5316
					Root MSE	0.1990
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BS	0.4743	0.0548	8.7000	0.0389	-0.6154	1.5640
LNBTA	0.2225	0.0315	7.1000	0.0482	-0.4044	0.8494
BS*LNBTA	-0.0863	0.0143	-6.1000	0.0455	-0.3700	0.1974
CONS	-1.0120	0.1195	-8.5000	0.0399	-3.3880	1.3639

The moderation effect of bank size on effect of board size and medium banks performance was fitted as follows:

$ROE_{(MB)}$= -1.0120+0.4743(BS)+ 0.2225(LNBTA) -0.0863(BS*LNBTA) …….23

The study ascertained the behaviour of small banks on the effect of board size on their financial performance. The result depicted board size had negatively but significantly influenced ROE of small banks (β =-0.1398, p=0.0240). This meant smaller boards were better than larger boards in small banks in Kenya. This meant that any additional director would result to a decline on ROE of small banks by 0.1398 units. The result further showed that board size explained 42.98 percent variation of financial results across small banks. This leaves 57.02 percent which can be explained by the variables not considered in the study model. This was supported by R^2 of 42.98 percent. This meant the linkage of board size and the financial results of small banks was statistically significant. This conforms with Terraza (2015) who confirmed that large banks indicate homogeneity and their behaviour. Table 4.56 FEM on unmoderated board size across small banks.

Table 4.56: FEM on Unmoderated Board Size across Small Banks

Source	**SS**	**df**	**MS**		**Number of obs =**	**170**
Model	7.6663	1	0.0456		F(1, 168)	5.15
Residual	250.0210	168	1.4882		Prob > F	0.0240
Total	257.6880	169	1.5248		R-squared	0.4298
					Adj R-squared	0.4040
					Root MSE	1.2199
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BS	-0.1398	0.0616	-2.2700	0.0240	-0.2614	-0.0182
CONS	2.7351	0.4451	6.1500	0.0000	1.8564	3.6137

The FEM on unmoderated board size of small banks in Kenya was fitted as follows:

$ROE_{(SM)}$= 2.7351 -0.1398 (BS)……24

Moderation effect is felt when variable Z changes the impact of variable X on variable Y by increasing or lowering the hypothesized influence (Sauer & Dick, 2003). The study introduced a moderating variable (bank size) against board size and the ROE of small banks in Kenya. The result revealed that bank size had a negative moderating effect on the influence of board size on ROE of small banks in Kenya (β =-0.3667, p=0.0050). Before introduction of the moderating variable bank size, the R^2 of unmoderated board size of small banks was 42.98 percent which changed to 49.81 percent resulting to a change by 6.83 percent thereby indicating that bank size had a significant moderating effect on the influence of board size on ROE of small banks in Kenya. The findings were in comformity with Nodeh, Anuar, Ramakrishnan and Raftnia, (2016) who found bank size had a moderating influence on return on equity. Table 4.57 moderated board size model on the influence of board size on financial performance of small banks in Kenya.

Table 4.57: FEM on Moderated Board Size across Small Banks

Source	**SS**	**df**	**MS**		**Number of obs =**	**170**
Model	0.8240	4	0.2060		F(4, 165)	4.4800
Residual	7.5791	165	0.0459		Prob > F	0.0050
Total	8.4031	169	0.0497		R-squared	0.4981
					Adj R-squared	0.4762
					Root MSE	0.2143
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BS	0.2566	0.0212	12.1000	0.0228	-0.1620	0.6753
LNBTA	0.3798	0.0193	19.6000	0.0410	-0.0024	0.7621
BS*LNBTA	-0.3667	0.1292	-2.8400	0.0050	-0.6218	-0.1116
CONS	-0.5911	0.2328	-2.5385	0.0170	-1.4371	0.2549

The moderation effect of bank size on effect of the influence of board size on banks performance was fitted as follows:

$ROE_{(SM)}$= -0.5911+0.2566(BS)+ 0.3798(LNBTA) -0.3667(BS*LNBTA) …….25

4.11.2 Influence of Board Frequency of Meetings on Financial Performance of Commercial Banks.

The second variable was to assess the influence of board frequency of meetings on financial results of Kenyan banking sector. The study performed bivariate FEM to establish the influence of board frequency of meetings on ROE of Kenyan banking sector. The result shows that board frequency of meeting had a positive and significant influence on ROE of commercial banks in Kenya (β=0.4561, p=0.0080). This implied that any additional board meeting was likely to increase ROE of commercial banks in Kenya by 0.4561 units. This finding was in support of the resource dependence theory which means that the more meetings held by the director facilitated identification of where to source material more economically, reliably and optimal usage. Which meant the more effective the board directed resources the better the financial performance the bank would be. This was supported by the p-value of 0.0080. The result revealed that board frequency of meetings explained 41.36 percent variation of ROE was further supported by the R^2 of 41.36 percent. The balance 58.66 percent variation can be explained by the variables not considered

in the study model. The result indicated that the connection of board frequency of meetings and ROE was statistically significant.

This study concurs with Mandala, Kaijage, Aduda and Iraya (2018) who found board frequency of meeting had positively and significantly influenced financial results of the Kenyan banking sector. The study negated Gambo, Bello and Rimamshung (2018) who found board frequency of meetings had no influence on financial results of Nigerian firms. The study also contradicted Nyarige (2012) who found board frequency of meetings had negatively influenced financial results of Kenyan banking sector. The current finding implied that the more meetings held resulted to optimal decisions on resource utilization thus impacted positively on financial results of commercial banks in Kenya. Table 4.58 overall FEM on unmoderated board frequency of meetings.

Table 4.58: Overall FEM on Unmoderated Board Frequency of Meetings of all Banks in Kenya

Source	**SS**	**Df**	**Ms**		**Number of Obs**	**340**
Model	11.3828	1	11.3828		F(1, 338)=	7.22
Residual	532.8548	338	1.5765		Prob > F	0.0080
Total	544.2376	339	1.6054		R-squared	0.4136
					Adj R-squared	0.4028
					Root MSE	1.2556
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BFM	0.4561	0.1698	2.6900	0.0080	0.1222	0.7900
CONS	1.5581	0.2922	5.3300	0.0000	0.9834	2.1328

The FEM on board frequency of meetings effects on banks performance was fitted as follows:

$ROE_{(IND)}$= 1.5581 + 0.4561(BFM)…….26

The current study introduced a moderating variable (bank size) to evaluate the moderating effect on the influence of board frequency of meetings and ROE of all banks in Kenya. The result revealed that bank size had a negative and significant moderating effect on the influence of board frequency of meetings on ROE of all

banks in Kenya (β =-0.2468, p=0.0220). The study reveals that unmoderated board frequency of meetings had R^2 of 41.36 percent, which changed to 53.19 percent an increase by 11.83 percent indicating bank size had a positive moderating effect on the relationship between board frequency of meetings and ROE of all banks in Kenya. This study affirms Saeed, Murtaza and Sohail (2013) who found bank size had a moderating effect on the frequency of audit meetings on bank performance of Pakistan firms. This implied that bank size as a moderating variable had a significant effect on the influence of board frequency of meetings on ROE of Kenyan all banks. Table 4.59 FEM on moderated board frequency of meetings across industry.

Table 4.59: FEM on Moderated Board Frequency of Meetings all Banks

Source	**SS**	**Df**	**Ms**		**Number of Obs**	**340**
Model	167.8261	3	55.9420		F(4, 335)=	49.9400
Residual	376.4115	336	1.1203		Prob > F	0.0000
Total	544.2376	339	1.6054		R-squared	0.5319
					Adj R-squared	0.5261
					Root MSE	1.0584
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BFM	0.9838	0.4247	2.3200	0.0210	0.1485	1.8191
LNBTA	0.8980	0.1868	4.8100	0.0000	0.5306	1.2654
BFM*LNBTA	-0.2469	0.1074	-2.3000	0.0220	-0.4581	-0.0357
CONS	-0.9136	0.7102	-1.2900	0.1990	-2.3107	0.4834

The FEM on moderated board frequency of meetings across industry was fitted as follows:

$ROE_{(IND)}$= -0.9136+0.9838(BFM)+0.8980(LNBTA)-0.2469(BFM*LNTBA) …….27

The study conducted another analysis to find the behaviour of board frequency of meetings on financial performance of large banks in Kenya. The result depicted board frequency of meetings had positively and significantly influenced ROE of large banks in Kenya (β=0.0702, p=0.0287). This affirmed Al-Daoud, Saidin and Abidin (2016) who found board frequency of meetings had a positive and significant influence on financial performance of listed firms in the Aman Stock Exchange. However, Gambo, Bello and Rimamshung (2018) found board frequency of

meetings had no influence on ROA on the listed firm in the Nigerian Stock Exchange. This study revealed that the more meeting held by the board improved financial results of large banks in Kenya. This result revealed that board frequency of meetings had R^2 of 31.45 percent which explained 31.45 percent variation of ROE of large banks in Kenya. The balance 68.55 can be explained by variables not considered in the study variables. This meant the linkage of board size and the financial results of large banks was statistically significant. Table 4.60 FEM on unmoderated board frequency of meetings of large banks in Kenya.

Table 4.60: FEM on Unmoderated Board Frequency of Meetings of Large Banks in Kenya

Source	**SS**	**Df**	**Ms**		**Number of Obs**	**80**
Model	0.0610	1	0.0610		F(1, 338)=	1.1500
Residual	4.1412	78	0.0531		Prob > F	0.0287
Total	4.2022	79	0.0532		R-squared	0.3145
					Adj R-squared	0.3019
					Root MSE	0.2304
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BFM	0.0702	0.0065	10.7000	0.0287	-0.0601	0.2005
CONS	3.2619	0.1183	27.5700	0.0000	3.0264	3.4974

The FEM on unmoderated board frequency of meetings across industry was fitted as follows:

$ROE_{(LB)}$= 3.2619+0.0702 (BFM)……28

The study introduced a moderating variable (bank size) against board frequency of meetings and ROE of large banks in Kenya. The unmoderated R^2 of board frequency of meetings was 31.45 percent, which changed to 42.20 percent resulting to a change of 10.75 percent. The study revealed that the moderating variable bank size had a positive and significant moderating effect on the influence of board frequency of meetings on ROE of large banks in Kenya. The finding affirmed Saeed, Murtaza and Sohail (2013) who found firm size had a moderating effect on the influence of frequency of audit meetings on ROA of Pakistan firms. Table 4.61 FEM on moderated board frequency of meetings across large banks.

Table 4.61: FEM on Moderated Board Frequency of Meetings of Large Banks

Source	SS	Df	Ms		Number of Obs	80
Model	0.0926	3	0.0309		F(3, 76)=	0.5700
Residual	4.1096	76	0.0541		Prob > F	0.0464
Total	4.2022	79	0.0532		R-squared	0.4220
					Adj R-squared	0.4166
					Root MSE	0.2325
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BFM	-0.3313	0.0926	-3.6000	0.0472	-2.1751	1.5124
LNBTA	-0.1257	0.0284	-4.4000	0.0366	-0.6911	0.4397
BFM*LNBTA	0.0529	0.0170	3.1000	0.0476	-0.2866	0.3924
CONS	1.9663	0.1516	13.0000	0.0199	-1.0531	4.0000

The FEM on moderated board frequency of meetings across large banks was fitted as follows:

$ROE_{(LB)}$=1.9663 – 0.3313(BFM) -0.1257(LNBTA) +0.0529(BFM*LNBTA) ……29

The study conducted analysis on behaviour of medium banks on the effect of board frequency of meetings on financial performance of medium banks in Kenya. The result depicted board frequency of meetings had positively and significantly influenced ROE of medium banks in Kenya (β=0.0021, p=0.0359). This implied that the more directors meet resulted to optimal decisions made as they understood better the operations of the bank which improved financial performance of medium banks in Kenya. Any additional board meeting would result to an increase in ROE by 0.0021 units of medium banks in Kenya. This finding contradicted Gambo, Bello and Rimamshung (2018) who found board frequency of meetings had no influence on financial results of Nigerian companies. The study findings were in support of Terraza (2015) who evaluated three panels' data of large, medium and small banks to put into context European banks in accordance to their bank size. The estimation revealed that there was existence of positively and significantly financial performance of banks that were of medium size. However, the study refuted findings on small and large banks. This result revealed that board frequency of meetings had R^2 of 40.32 percent which explained 40.32 percent variation of ROE of medium banks in Kenya. The balance 59.68 can be explained by variables not considered in

the study variables. This meant the linkage of board size and the financial results of medium banks was statistically significant. Table 4.62 FEM on unmoderated board frequency of meetings across medium banks in Kenya.

Table 4.62: FEM on Unmoderated Board Frequency of Meetings across Medium Banks in Kenya

Source	**SS**	**Df**	**Ms**		**Number of Obs**	**90**
Model	0.0116	1	0.0116		F(1, 88)=	0.2900
Residual	3.5526	88	0.0404		Prob > F	0.0359
Total	3.5642	89	0.0400		R-squared	0.4032
					Adj R-squared	0.3981
					Root MSE	0.2009
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BFM	0.0021	0.0010	2.1000	0.0359	-0.0058	0.0101
CONS	0.1352	0.0337	4.0100	0.0000	0.0682	0.2021

The FEM on unmoderated board frequency of meetings across medium banks in Kenya was fitted as follows:

$ROE_{(MB)}$=0.1352 +0.0021 (BFM)…….30

The study introduced a moderating variable (bank size) to evaluate the effect of the influence of board frequency of meetings on ROE of medium banks in Kenya. The result revealed that bank size had a negative but significant effect on the influence of board frequency of meetings on ROE of medium banks in Kenya (β=-0.0281, p=0.0070). Unmoderated board frequency of meetings had R^2 40.32 percent, which changed to 50.92 percent resulting to a change by 10.60 percent. This implies that bank size as a moderating variable had a positive and significant effect on the influence of board frequency of meetings on ROE of medium banks in Kenya. The finding agreed with Terraza (2015) on the case for medium banks but refuted the findings on small and large banks. Table 4.63 FEM on moderated board frequency of meetings across medium banks.

Table 4.63: FEM on Moderated Board Frequency of Meetings across Medium Banks

Source	SS	Df	Ms		Number of Obs	90
Model	0.3891	3	0.1297		F(3, 86)=	3.5100
Residual	3.1751	86	0.0369		Prob > F	0.0186
Total	3.5642	89	0.0400		R-squared	0.5092
					Adj R-squared	0.4981
					Root MSE	0.1921
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BFM	0.1200	0.0433	2.7700	0.0070	0.0339	0.2061
LNBTA	0.2180	0.0684	3.1900	0.0020	0.0821	0.3540
BFM*LNBTA	-0.0281	0.0102	-2.7500	0.0070	-0.0484	-0.0078
CONS	-0.7590	0.2831	-2.6800	0.0090	-1.3218	-0.1961

The FEM on moderated board frequency of meetings across medium banks in Kenya was fitted as follows:

$ROE_{(MB)}$=-0.7590+0.1200(BFM)+0.2180(LNBTA) -0.0281(BFM*LNBTA) ……..31

The study analysed the behaviour of board frequency of meetings on financial performance of small banks in Kenya. The result depicted board frequency of meetings had negatively but significantly influenced ROE of small banks (β=-0.5088, p=0.0000). This meant that any additional board frequency of meeting caused a decline of ROE by 0.5088 units of small banks in Kenya. This finding contradicted Gambo, Bello and Rimamshung (2018) who found board frequency of meetings had no influence on financial results of Nigerian companies. The study findings were in support of Terraza (2015) who evaluated three panels' data of large, medium and small banks to put into context European banks in accordance to their bank size. The estimation revealed existence of positively and significantly financial performance persistence for the banks that were of medium size. However, the study refuted findings on small and large banks. This result revealed that board frequency of meetings had R^2 of 43.59 percent which explained 43.59 percent variation of ROE of small banks in Kenya. The balance 56.41 can be explained by variables not considered in the study variables. This meant the linkage of board size and the financial results of small banks was statistically significant. Table 4.64 FEM on unmoderated board frequency of meetings across small banks in Kenya.

Table 4.64: FEM on Unmoderated Board Frequency of Meetings of Small Banks

Source	**SS**	**Df**	**MS**		**Number of obs =**	**170**
Model	0.7220	1	0.0043		F(1, 168)	15.79
Residual	7.6811	168	0.0457		Prob > F	0.0000
Total	8.4031	169	0.0497		R-squared	0.4359
					Adj R-squared	0.4205
					Root MSE	0.2138
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BFM	-0.5088	0.1280	-3.9700	0.0000	-0.7616	-0.2560
CONS	0.1044	0.0234	4.4500	0.0000	0.0581	0.1506

The FEM on unmoderated board frequency of meetings across small banks was fitted as follows:

$ROE_{(SB)}$=0.1044-0.5088(BFM)…….32

The study introduced a moderating variable (bank size) to assess the moderating effect on the influence of board frequency of meetings on ROE of small banks in Kenya. The result showed bank size had a negative but significant effect on the influence of board frequency of meetings on ROE of small banks in Kenya (β=-0.0306, p=0.0100). Unmoderated board frequency of meetings had R^2 of 43.59 percent, which changed to 50.17 percent resulting to a change by 6.58 percent. This implied that bank size had a positive and significant moderating effect on the influence of board frequency of meetings on ROE of small banks in Kenya. The finding agreed with Terraza (2015) on the case for medium banks but refuted the findings on small and large banks. Table 4.65 FEM on moderated board frequency of meetings across small banks.

Table 4.65: FEM on Moderated Board Frequency of Meetings across Small Banks

Source	SS	Df	MS		Number of obs =	170
Model	0.5184	3	0.1728		F(3, 166)	3.6400
Residual	7.8846	166	0.0475		Prob > F	0.0141
Total	8.4031	169	0.0497		R-squared	0.5017
					Adj R-squared	0.4847
					Root MSE	0.2179
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BFM	0.0712	0.0281	2.5400	0.0120	0.0158	0.1266
LNBTA	0.2075	0.0658	3.1500	0.0020	0.0776	0.3373
BFM*LNBTA	-0.0306	0.0117	-2.6200	0.0100	-0.0537	-0.0076
CONS	-0.4326	0.1546	-2.8000	0.0060	-0.7378	-0.1275

The FEM on moderated board frequency of meetings of small banks in Kenya was fitted as follows:

$ROE_{(SB)}$=-0.4326+0.0712(BFM)+0.2075(LNBTA)-0.0306(BFM*LNBTA) …….33

4.11.3 Influence of Board Gender Diversity on Financial Performance of Commercial Banks.

The third variable was to ascertain the influence of board gender diversity on ROE of commercial banks in Kenya. A bivariate model was applied to ascertain the influence of board gender diversity on ROE of the Kenyan banking sector. The analysis showed that board gender diversity had a positive and significant influence on ROE of the banking sector in Kenya (β=0.2050, p=0.0160). This meant that any additional female director was likely to increase ROE commercial banks in Kenya by 0.2050 units. This was supported by the overall significance of 0.0160. The result further shows that board gender diversity explained 43.93 percent variation of financial results. This was supported by R^2 of 43.93 percent. This meant the linkage of board gender diversity and the financial results of the Kenyan banking sector was statistically significant. The finding was in support of stakeholder theory as the presence of female directors was likely to fulfill the expections of the stakeholders (Zhang, Zhu & Ding, 2013). Meeting expections of the stakeholders would entice them to support the firm thus achieving the planned and budgeted profits. This means that the more a firm neglected its stakeholders, the more conflicts arose which

impacted negatively on the financial performance of the bank. This study affirmed Ntim (2015) who found board gender diversity had a positive and significant influence of listed firms on Johannesburg Stock Exchange. However, the study negated Temile, Jatmick and Hidayat (2018) who found board gender diversity had no influence on firm performance of Nigerian firms while Akpan and Amran (2014) found board gender diversity had a negative influence on financial performance of Nigerian listed firms. Further, Campbell and Minguez-Vera (2008) argued that the market could not punish a firm due to the presence of a female director. Akpan and Amran (2014) recommended a ratio of women directors be increased to between 30 and 35 percent in Nigerian firms for their effort to be recognised. This study finding also concurred with Terraza (2015) on the case for medium banks but negated from the findings on large and small banks. Table 4.66 FEM on unmoderated board gender diversity across banks in Kenya.

Table 4.66: FEM on Unmoderated Board Gender Diversity across Banks in Kenya

Source	**SS**	**Df**	**Ms**		**Number of Obs**	**340**
Model	9.3573	1	9.3573		F(1, 338)=	5.91
Residual	534.8803	338	1.5825		Prob > F	0.0160
Total	544.2376	339	1.6054		R-squared	0.4393
					Adj R-squared	0.4193
					Root MSE	1.2580
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BGD	0.2050	0.0843	2.4300	0.0160	0.0392	0.3709
CONS	2.0679	0.1246	16.5900	0.0000	1.8227	2.3130

The FEM on unmoderated board gender diversity and financial performance of across banks in Kenya was fitted as follows:

$ROE_{(IND)}$= 2.0679+0.2050(BGD)……34

The study introduced a moderating variable (bank size) to examine the moderating effect on the influence of board gender diversity on ROE of all banks in Kenya. The study revealed that bank size had a negative but significant moderating effect on the influence of board gender diversity on ROE of all banks in Kenya (β=-0.6969,

p=0.0000). Unmoderated board gender diversity had R^2 of 43.93 percent, which changed to 54.00 percent resulting to a change of 10.07 percent. This implied that bank size had a positive and significant moderating effect on the relationship between ROE and board gender diversity across the industry. Table 4.67 FEM on moderated board gender diversity across all banks in Kenya.

Table 4.67: FEM on Moderated Board Gender Diversity across Banks in Kenya

Source	**SS**	**df**	**MS**		**Number of Obs**	**340**
Model	184.0260	3	61.342		F(4, 335)=	57.2200
Residual	360.2120	336	1.0721		Prob > F	0.0000
Total	544.2380	339	1.6054		R-squared	0.5400
					Adj R-squared	0.5322
					Root MSE	1.0354
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BGD	-0.0698	0.0077	-9.0000	0.0368	-0.2221	0.0824
LNBTA	0.6589	0.0550	11.9800	0.0000	0.5507	0.7671
BGD*LNBTA	-0.6969	0.1684	-4.1400	0.0000	-1.0282	-0.3656
CONS	0.5770	0.1559	3.7000	0.0000	0.2704	0.8836

The FEM on moderated board gender diversity across industry was fitted as follows:

$ROE_{(IND)}$= 0.5770-0.0698(BGD)+0.6589(LNBTA) -0.6969(BGD*LNBTA) ……35

The study investigated further the behaviour of board gender diversity and return on equity of large banks in Kenya. The result depicted board gender diversity had a negative but significant influence on ROE of large banks (β=-0.0685, p=0.0247). This implied that any additional increase in board gender diversity by one was likely to decrease ROE of large banks by 0.0685 units. This was supported by the overall significance of 0.0247. The result further showed that board gender diversity explained 41.72 percent variation of ROE of large banks. This leaves 58.28 percent which can be explained by the variables which were not considered in the study model. This implied that the linkage between board gender diversity and financial results was statistically significant. The study revealed that greater proportion of board gender diversity was a burden to large banks in Kenya. This conclusion was in agreement with Terraza (2015) on the case for medium banks but deviated from the

findings on small and large banks. Table 4.68 FEM on unmoderated board gender diversity across large banks in Kenya.

Table 4.68: FEM on Unmoderated Board Gender Diversity across Large Banks in Kenya

Source	**SS**	**df**	**Ms**		**Number of Obs**	**80**
Model	0.0722	1	0.0722		F(3, 76)=	1.3600
Residual	4.1301	78	0.0529		Prob > F	0.0247
Total	4.2022	79	0.0532		R-squared	0.4172
					Adj R-squared	0.4046
					Root MSE	0.2301
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BGD	-0.0685	0.0059	-11.7000	0.0247	-0.1853	0.0483
CONS	3.5007	0.1018	34.4000	0.0000	3.2981	3.7033

The FEM on unmoderated board gender diversity across large banks in Kenya was fitted as follows:

$ROE_{(LB)}$=3.5007-0.0685(BGD)…….36

The study introduced the Moderating variable (bank size) to ascertain the effect on the influence of board gender diversity on ROE of large banks in Kenya. The study revealed that bank size had a negative but significant moderating effect on the influence of board gender diversity on ROE of large banks in Kenya (β=-0.4391, p=0.0129). Unmoderated board gender diversity had R^2 of 41.72 percent, which changed to 55.37 percent resulting to a change of 13.65 percent. The study revealed that the moderating variable bank size had a positive and significant moderating effect on the influence of board gender diversity on ROE of large banks in Kenya. The study affirmed Kılıç and Kuzey (2016) who found firm size had a positive and significant effect on the influence of board gender diversity on ROA and ROE of non-financial listed firms of Turkey. Table 4.69 FEM on moderated board gender diversity across large banks in Kenya.

Table 4.69: FEM on Moderated Board Gender Diversity across Large Banks

Source	SS	df	Ms		Number of Obs	80
Model	0.2258	3	0.0753		F(3, 76)=	1.4400
Residual	3.9764	76	0.0523		Prob > F	0.0238
Total	4.2022	79	0.0532		R-squared	0.5537
					Adj R-squared	0.5364
					Root MSE	0.2287
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BGD	-0.4448	0.0264	-16.8000	0.0097	-0.9714	0.0818
LNBTA	0.1291	0.0078	16.5000	0.0103	-0.0265	0.2847
BGD*LNBTA	-0.4391	0.0286	-15.3000	0.0129	-1.0094	0.1312
CONS	3.9334	0.5441	7.2300	0.0000	2.8496	5.0171

The FEM on moderated board gender diversity across large banks was fitted as follows:

$ROE_{(LB)}$=3.9334-0.4448(BGD) +0.1291(LNBTA)-0.4391(BGD*LNBTA) ……37

The study further investigated the behaviour of board gender diversity on medium banks in Kenya. The results depicted that board gender diversity had a negative but significant influence on ROE on medium banks in Kenya (β=-0.7883, p=0.0024). This implied that any additional board gender diversity was likely to decrease ROE of large banks by 0.7883 units. This study discouraged appointment of women as directors of medium banks in Kenya. The result further shows that board gender diversity explained 30.03 percent variation of financial results across medium banks. This leaves 69.97 percent which can be explained by the variables not considered in the study model. This was supported by R^2 of 30.03 percent. This meant the linkage of board gender diversity and the financial results of medium banks was statistically significant This study negated Abu, Okpeh and Okpe (2016) who found board gender diversity had no influence on Nigerian listed banks. This finding was in agreement with Terraza (2015) on the case for medium banks but deviated from the findings on small and large banks. Table 4.70 FEM on unmoderated board gender diversity across medium banks in Kenya.

Table 4.70: FEM on Unmoderated Board Gender Diversity across Medium Banks in Kenya

Source	SS	df	Ms		Number of Obs	90
Model	0.3574	1	0.3574		F(1, 88)=	9.8100
Residual	3.2068	88	0.0364		Prob > F	0.0024
Total	3.5642	89	0.0400		R-squared	0.3003
					Adj R-squared	0.2900
					Root MSE	0.1909
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BGD	-0.7883	0.2517	-3.1300	0.0024	-1.2885	-0.2881
CONS	0.2607	0.0409	6.3700	0.0000	0.1794	0.3419

The FEM on unmoderated board gender diversity across medium banks was fitted as follows:

$ROE_{(MB)}$=0.2607-0.7883(BGD)……38

The study introduced a Moderating variable (bank size) to assess the moderating effect on the influence of board gender diversity on ROE of medium banks in Kenya. The study depicted bank size had a negative but significant moderating effect on the influence of board gender diversity on ROE of medium banks in Kenya (β=-0.2195, p=0.0020). Unmoderated board gender diversity had R^2 of 30.03 percent which chaged to 45.76 percent resulting to a change by 15.73 percent. This affirmed the findings of Kılıç and Kuzey (2016) who found firm size had a positive and significant moderating effect on the influence of board gender diversity on firm performance of Turkish non-financial listed firms. This implies that bank size had a positive and significant moderating effect on the relationship between ROE and board gender diversity across Kenyan medium banks. Table 4.71 FEM on moderated board gender diversity across medium banks in Kenya.

Table 4.71: FEM on Moderated Board Gender Diversity across Medium Banks in Kenya

Source	SS	df	MS		Number of obs =	90
Model	0.4905	3	0.1635		F(3, 86)	4.5800
Residual	3.0736	86	0.0357		Prob > F	0.0051
Total	3.5642	89	0.0400		R-squared	0.4576
					Adj R-squared	0.4175
					Root MSE	0.1891
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BGD	0.0002	0.0299	0.0100	0.9950	-0.0592	0.0596
LNBTA	0.0852	0.0324	2.6300	0.0100	0.0208	0.1495
BGD*LNBTA	-0.2195	0.0697	-3.1500	0.0020	-0.3581	-0.0808
CONS	-0.0630	0.1184	-0.5300	0.5960	-0.2984	0.1724

The FEM on moderated board gender diversity across medium banks in Kenya was fitted as follows:

$ROE_{(MB)}$ =-0.0630+0.0002(BGD)+0.0852(LNBTA)-0.2195(BGD*LNBTA) ……39

The study examined board gender diversity and return on eqtuity on small banks in Kenya. The results depicted that board gender diversity had a negative but significant influence on ROE on Kenyan small banks (β=-3.2028, p=0.0000). This implied that any additional board gender diversity by one is likely to decrease ROE of small banks in Kenya by 3.2028 units. This study discouraged appointment of women as directors to small banks in Kenya. The result further showed that board size explained 41.10 percent variation of financial results across small banks. This leaves 58.90 percent which can be explained by the variables not considered in the study model. This was supported by R^2 of 41.10 percent. This meant the linkage of board gender diversity and the financial results of small banks was statistically significant. This study negated Temile, Jatmiko and Hidayat (2018) who found board gender diversity had no influence on financial results of Nigerian firms. However, the finding was in agreement with Terraza (2015) on the case for medium banks but deviated from the findings on small and large banks. Table 4.72 FEM on unmoderated board gender diversity across small banks in Kenya.

Table 4.72: FEM on Unmoderated Board Gender Diversity across Small Banks in Kenya

Source	**SS**	**df**	**MS**		**Number of obs =**	**170**
Model	28.6099	1	28.6099		F(1, 168)	20.98
Residual	229.0780	168	1.3636		Prob > F	0.0000
Total	257.6880	169	1.5248		R-squared	0.4110
					Adj R-squared	0.4057
					Root MSE	1.1677
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BGD	-3.2028	0.6992	-4.5800	0.0000	-4.5832	-1.8224
CONS	2.1662	0.1280	16.9300	0.0000	1.9136	2.4189

The FEM on unmoderated board gender diversity across small banks in Kenya was fitted as follows:

$ROE_{(SB)} = 2.1662 - 3.2028(BGD)$……40

The study introduced a Moderating variable (bank size) to assess the moderating effect on the influence of board gender diversity on ROE of small banks in Kenya. The study revealed that bank size had a significant moderating effect on the influence of board gender diversity of Kenyan small banks (β=-0.2696, p=0.0000). Unmoderated board gender diversity had R^2 of 41.10 percent, which changed after moderation to 51.28 percent resulting to a change by 10.18 percent. This was in support of the findings of Kılıç and Kuzey (2016) who found firm size had a positive and significant moderaing effect on the influence of board gender diversity on firm performance of Turkish non-financial listed firms. This implies that bank size had a significant moderating effect on the relationship between ROE and board gender diversity across small banks in Kenya. Table 4.73 FEM on moderated board gender diversity across small banks in Kenya.

Table 4.73: FEM on Moderated Board Gender Diversity across Small Banks in Kenya

Source	**SS**	**df**	**MS**		**Number of obs =**	**170**
Model	0.8635	3	0.2878		F(3, 166)	6.34
Residual	7.5395	166	0.0454		Prob > F	0.0004
Total	8.4030	169	0.0497		R-squared	0.5128
					Adj R-squared	0.5065
					Root MSE	0.2131
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BGD	0.0416	0.0295	1.4100	0.1610	-0.0167	0.0998
LNBTA	0.0791	0.0254	3.1200	0.0020	0.0290	0.1292
BGD*LNBTA	-0.2696	0.0757	-3.5600	0.0000	-0.4192	-0.1201
CONS	-0.0963	0.0618	-1.5600	0.1210	-0.2184	0.0258

The FEM on moderated board gender diversity across small banks in Kenya was fitted as follows:

$ROE_{(SB)}$ =-0.0963+0.0416(BGD)+0.0791(LNBTA)-0.2696(BGD*LNBTA) ……41

4.11.4 Influence of Board Share Ownership on Financial Performance of Commercial Banks in Kenya.

The fourth variable was to examine the influence of board share ownership on ROE of the Kenyan banking sector. The study used bivariate FEM to examine the influence of board share ownership on ROE of the Kenyan banking sector. The result depicted that board share ownership had a positive and significant influence on ROE across the industry (β=0.2454, p=0.0000). This meant that any additional share holding by the directors resulted to an increase in ROE of commercial banks in Kenya by 0.2454 units. This was affirmed by an overall significance 0.0000. The result shows that board share ownership explained 41.09 percent variation of the return on equity of commercial banks in Kenya. The remaining 58.91 percent variation can be explained by variables not considered in the study model. This was corroborated by R^2 of 41.09. The result indicates that board share ownership was statistically and significantly linked to return on equity across Kenyan banks. This finding was in support of stewardship theory when involving top management to

own shares of the firm would align their interests to that of the firm (Nyarko, Yusheng & Zhu, 2017).

When banks allow directors to own their shares, board members become committed to make optimal decisions which results to improved financial performance of the bank. This imply that if management were allowed to own shares of the bank, they would be motivated in carrying out their duties effectively and efficiently which resulted to improved financial performance of banks. This finding was in support of Mandala, Kaijage, Aduda and Iraya (2018) who found board share ownership had a significant and positive influence on financial results of Kenyan firms. However, it contradicted Akpan and Amran (2014) who found board share ownership had no influence on ROE of Nigerian firms. This was supported by a Kenyan CEO of Cooperative Bank of Kenya who receipt of Shs 103 Million as dividend from the bank (Mutua, 2019). This is a clear indication that when board members are allowed to own shares in the bank, they align their interests to those of the shareholders. This negated Nouaili, Abaoub and Ochi (2015) who found bank size contributed negatively to financial performance of banks in Tunisia. Table 4.74 FEM on unmoderated board share ownership across commercial banks in Kenya.

Table 4.74: FEM on Unmoderated Board Share Ownership across Banks

Source	**SS**	**df**	**Ms**		**Number of Obs**	**340**
Model	73.5567	1	73.5567		F(1, 338)=	52.82
Residual	470.6809	338	1.3925		Prob > F	0.0000
Total	544.2376	339	1.6054		R-squared	0.4109
					Adj R-squared	0.4080
					Root MSE	1.1801
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BSO	0.2454	0.0338	7.2700	0.0000	0.1790	0.3118
CONS	1.8252	0.0936	19.5000	0.0000	1.6411	2.0093

The FEM on unmoderated board share ownership across banks in Kenya was fitted as follows:

$ROE_{(IND)}$= 1.8252+0.2454(BSO)…….42

The study introduced a moderating variable (bank size) to evaluate the influence of board share ownership on ROE of the Kenyan banking sector. The result showed that bank size as a moderating variable had a negative but significant moderating effect on the influence of board share ownership of financial performance of Kenyan banks (β=-0.0834, p=0.0373). Unmoderated board share ownership had R^2 of 41.09 percent, which changed to 43.71 percent, resulting to a change by 2.62 percent. This affirmed the findings of Kılıç and Kuzey (2016) who found firm size had a positive and significant effect on the influence of board share ownership on firm performance of Turkish non-financial listed firms. This implied that bank size had a significant moderating effect on the relationship between ROE and board share ownership across Kenyan banks. Table 4.75 FEM on moderated board share ownership across banks in Kenya.

Table 4.75: FEM on Moderated Board Share Ownership across Banks

Source	**SS**	**df**	**Ms**		**Number of Obs**	**340**
Model	170.2170	3	56.7390		F(4, 335)=	50.9700
Residual	374.0206	336	1.1132		Prob > F	0.0000
Total	544.2376	339	1.6054		R-squared	0.4371
					Adj R-squared	0.4228
					Root MSE	1.0551
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BSO	0.0923	0.0347	2.6600	0.0080	0.0241	0.1606
LNBTA	0.4321	0.0510	8.4800	0.0000	0.3319	0.5324
BSO*LNBTA	-0.0834	0.0238	-3.5000	0.0373	-0.5512	0.3844
CONS	0.7047	0.1477	4.7700	0.0000	0.4142	0.9952

The FEM on moderated board share ownership across industry was fitted as follows:

$$ROE_{(IND)} = 0.7047+0.0923(BGD)+0.4321(LNBTA) -0.0834 (BGD*LNBTA) \ldots 43$$

The study sought to ascertain how board share ownership influenced ROE of large banks in Kenya. Board share ownership had a positive and significant influence on ROE of large banks in Kenya (β=0.0173, p=0.0155). This meant that any additional share ownership by the board was likely to increase ROE of large banks in Kenya by 0.0173 units. This was supported by an overall p-value of 0.0155 significance level.

This finding encouraged board share ownership as any additional share holding by the director improved financial results of the large banks. However, there is that capitation by the regulator of 5 percent holding (CBK, 2013). The result showed that board share ownership explained 42.58 percent variation of return on equity of Kenyan large banks. The remaining 57.42 percent can be explained by the variables not considered in the study model. This was in support of the R^2 of 42.59 percent. This showed the linkage of board share ownership with ROE was significant. This finding affirmed Mamatzakis and Bermpei (2015) who established that board share ownership impacted positively on return on equity for US investment banks but contradicted Bashir, Fatima, Sohail, Rasul and Mehboob (2018) who found board share ownership had a negative but significant impact on ROE of banks in Pakistan. The study was in agreement with Terraza (2015) on the case for medium banks but differed on the findings on small and large banks. Table 4.76 FEM on unmoderated board share ownership across large banks in Kenya.

Table 4.76: FEM on Unmoderated Board Share Ownership across Large Banks in Kenya

Source	**SS**	**df**	**Ms**		**Number of Obs**	**80**
Model	0.1082	1	0.10821715		F(1, 338)=	2.0600
Residual	4.0940	78	0.0524872		Prob > F	0.0155
Total	4.2022	79	0.05319265		R-squared	0.4258
					Adj R-squared	0.4133
					Root MSE	0.2291
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BSO	0.0173	0.0012	14.4000	0.0155	-0.0067	0.0413
CONS	3.3219	0.0513	64.7600	0.0000	3.2198	3.4240

The FEM on unmoderated board share ownership across large banks in Kenya was fitted as follows:

$ROE_{(LB)} = 3.3219+0.0173(BSO)$……44

The study introduced a moderating variable (bank size) to evaluate the effect on the influence of board share ownership on ROE of Kenyan large banks. The result showed bank size as a moderating variable had a negative but significant moderating

effect on the influence of board share ownership on ROE of Kenyan large banks (β=-0.0103, p=0.0092). Unmoderated board share ownership had R^2 of 42.58 percent, which changed to 53.92 percent, resulting to a change of 11.34 percent. The study revealed that the moderating variable bank size had a positive and significant moderating effect on the influence of board share ownership on financial results of Kenyan large banks. This study affirmed the findings of Saeed, Murtaza and Sohail (2013) who found firm size had a positive and significant moderating effect on the influence of board share ownership on ROA of Pakistan firms. Table 4.77 FEM on moderated board share ownership across large banks.

Table 4.77: FEM on Moderated Board Share Ownership across Large Banks in Kenya

Source	**SS**	**df**	**Ms**		**Number of Obs**	**80**
Model	0.1649	3	0.0550		F(3, 76)=	1.0300
Residual	4.0374	76	0.0531		Prob > F	0.0382
Total	4.2022	79	0.0532		R-squared	0.5392
					Adj R-squared	0.5013
					Root MSE	0.2305
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BSO	0.0152	0.0017	9.2000	0.0363	-0.0178	0.0481
LNBTA	0.0521	0.0052	10.1000	0.0317	-0.0508	0.1550
BSO*LNBTA	-0.0103	0.0010	-11.0000	0.0092	-0.2034	0.1827
CONS	3.0632	0.2563	11.9500	0.0000	2.5527	3.5737

The FEM on moderated board share ownership across large banks was fitted as follows:

$$ROE_{(LB)} = 3.0632 + 0.0152(BSO) + 0.0521(LNBTA) - 0.0103(BSO*LNBTA) \quad \ldots\ldots 45$$

The study sought to ascertain how board share ownership influenced the ROE of Kenyan medium banks. The results revealed board share ownership had a positive and significant influence on ROE of Kenyan medium banks (β=0.3038, p=0.0355). This implied that any additional board share ownership would result in increased ROE by 0.3038 units of medium banks in Kenya. The result further showed that board share ownership explained 33.97 percent variation of ROE of medium banks in

Kenya. The remaining 66.03 percent variation can be explained by variables not considered in the study model. This was supported by R^2 of 33.97 percent. This meant the linkage of board share ownership and ROE of medium banks in Kenya was statistically significant. This finding affirmed Mamatzakis and Bermpei (2015) who established that board share ownership influenced positively on ROE for US banks but contradict Bashir, Fatima, Sohail, Rasul and Mehboob (2018) who established that board share ownership had a negative but significant influence on ROE of banks in Pakistan. The study was in agreement with Terraza (2015) on the case for medium banks but differed on the findings on small and large banks. The study encouraged board share ownership in medium banks in Kenya. Table 4.78 FEM on unmoderated board share ownership across medium banks in Kenya.

Table 4.78: FEM on Unmoderated Board Share Ownership across Medium Banks in Kenya

Source	**SS**	**df**	**Ms**		**Number of Obs**	**90**
Model	0.0347	1	0.0347		F(1, 88)=	0.8700
Residual	3.5295	88	0.0401		Prob > F	0.0355
Total	3.5642	89	0.0400		R-squared	0.3397
					Adj R-squared	0.3115
					Root MSE	0.2003
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BSO	0.3038	0.0327	9.3000	0.0355	-0.3451	0.9528
CONS	0.1345	0.0263	5.1100	0.0000	0.0822	0.1869

The FEM on unmoderated board share ownership across medium banks in Kenya was fitted as follows:

$ROE_{(MB)} = 0.1345 + 0.3038(BSO)$……46

The study introduced a moderating variable (bank size) to evaluate the moderating effect on the influence of board share ownership on ROE across medium banks in Kenya. The study revealed bank size had a positive and significant moderating effect on the influence of board share ownership on ROE of Kenyan medium banks (β=0.0096, p=0.0489). Unmoderated board share ownership had R^2 33.97 percent, which changed to 43.01 percent, resulting in 9.04 percent increase. This revealed that

the moderating variable bank size had a positive and significant moderating effect on the influence of board share ownership on ROE of Kenyan medium banks. This finding was in support of Saeed, Murtaza and Sohail (2013) who ascertained that bank size moderated bank performance. Table 4.79 FEM on moderated board share ownership across medium banks in Kenya.

Table 4.79: FEM on Moderated Board Share Ownership across Medium Banks in Kenya

Source	**SS**	**df**	**MS**		**Number of obs =**	**90**
Model	0.4637	3	0.1546		F(3, 86)	4.2900
Residual	3.1005	86	0.0361		Prob > F	0.0072
Total	3.5642	89	0.0400		R-squared	0.4301
					Adj R-squared	0.4297
					Root MSE	0.1899
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BSO	0.0423	0.0135	3.1500	0.0020	0.0156	0.0691
LNBTA	0.0213	0.0035	6.5000	0.0451	-0.0433	0.0858
BSO*LNBTA	0.0096	0.0035	2.7428	0.0489	-0.1388	0.1580
CONS	-0.0205	0.0100	-2.0500	0.0486	-0.2612	0.2202

The FEM on moderated board share ownership across medium banks in Kenya was fitted as follows:

$$ROE_{(MB)} = -0.0205 + 0.0423(BSO) + 0.0213(LNBTA) + 0.0096(BSO*LNBTA) \ldots 47$$

The study sought to ascertain how board share ownership influenced ROE of Kenyan small banks. Board share ownership had a negative but significant influence on ROE of small banks in Kenya (β=-0.7238, p=0.0250). The study discouraged board share ownership as any additional unit would result to a decline in ROE by 0.7238 units of small banks in Kenya. The result further shows that board share ownership explained 42.97 percent variation of ROE of small banks in Kenya. The remaining 57.03 percent variation can be explained by variables not considered in the study model. This was supported by R^2 of 42.97 percent. This meant the linkage of board share ownership and ROE of small banks in Kenya was statistically significant. This negated Mamatzakis and Bermpei (2015) who established that board share

ownership influenced positively ROE of US investment banks but affirmed Bashir, Fatima, Sohail, Rasul and Mehboob (2018) who found board share ownership had a negative but significant impact on ROE of banks in Pakistan. The study was in agreement with Terraza (2015) on the case for medium banks but differed on the findings on small and large banks. Table 4.80 FEM on unmoderated board share ownership across small banks in Kenya.

Table 4.80: FEM on Unmoderated Board Share Ownership across Small Banks

Source	**SS**	**df**	**MS**		**Number of obs =**	**170**
Model	0.2496	1	0.2496		F(1, 168)	5.14
Residual	8.1535	168	0.0485		Prob > F	0.0246
Total	8.4031	169	0.0497		R-squared	0.4297
					Adj R-squared	0.4239
					Root MSE	0.2203
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BSO	-0.7238	0.3192	-2.2700	0.0250	-1.3539	-0.0937
CONS	0.0651	0.0207	3.1400	0.0020	0.0242	0.1061

The FEM on unmoderated board share ownership across small banks in Kenya was fitted as follows:

$ROE_{(SB)} = 0.0651 - 0.7238(BSO)$ ……48

The study introduced a moderating variable (bank size) to determine the effect on the influence of board share ownership and ROE across small banks in Kenya. The analysis showed bank size as a moderating variable had a negative but significant moderating effect on the influence of board share ownership on ROE of Kenyan small banks in Kenya (β=-0.4872, p=0.0010). Unmoderated board share ownership had R^2 of 42.97 percent, which changed to 44.51 percent, resulting to a change by 1.54 percent. This implies that the moderating variable bank size had a positive and significant moderating effect on the influence of board share ownership on ROE of Kenyan small banks. This finding was in support of Saeed, Murtaza and Sohail (2013) who ascertained that bank size moderated the effect on the influence of board share ownership on financial performance. Table 4.81 FEM on moderated board share ownership across small banks in Kenya.

Table 4.81: FEM on Moderated Board Share Ownership across Small Banks

Source	SS	df	MS		Number of obs =	170
Model	0.7151	3	0.2384		F(3, 166)	5.1500
Residual	7.6879	166	0.0463		Prob > F	0.0020
Total	8.4031	169	0.0497		R-squared	0.4451
					Adj R-squared	0.4386
					Root MSE	0.2152
ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BSO	0.0154	0.0013	11.1000	0.0270	-0.0121	0.0430
LNBTA	0.0668	0.0233	2.8600	0.0050	0.0207	0.1129
BSO*LNBTA	-0.4872	0.1479	-3.3000	0.0010	-0.7791	-0.1953
CONS	-0.0841	0.0541	-1.5500	0.1220	-0.1910	0.0228

The FEM on moderated board share ownership across small banks in Kenya was fitted as follows:

$ROE_{(SB)}$=-0.0841+0.0154(BSO)+0.0668(LNBTA)-0.4872(BSO*LNBTA) …….49

4.12 Multivariate Regression Analysis.

The fifth objective was to establish the moderating effect on the influence of board characteristics on the financial performance of commercial banks in Kenya. The study established whether to adopt REM or the pooled OLS model (Bell & Kelvyn, 2015). Tables 4.31 and 4.32 depicted REM as the best fit, which lead to the next step to establish whether to adopt FEM or REM. Table 4.33 and 4.34 revealed FEM was the best to adopt for this study for both unmoderated and moderated variables through the Hausman test in panel data (Cooper & Schindler, 2011; Muigai, 2016).

4.12.1 Multivariate Regression Model of Commercial Banks

The study carried out a FEM multivariate regression analysis to establish how board characteristics influence financial performance of commercial banks in Kenya. Board size, board frequency of meetings, board gender diversity and board share ownership were found to be good determinants of financial performance of commercial banks in Kenya. The result shows R^2 was 63.45 percent. This implies that 63.45 percent of the ROE's variability was explained by independent variables. The remaining 36.55

percent was explained by other variables not incorporated in the model. The regression model analysis further revealed that the linkage of the variables was satisfactory. The result was corroborated by the overall p =0.0000 which is < 5 percent significance level. Therefore, the model was significant. This finding was in support of the agency theory as it mitigated agency costs (Fama & Jensen, 1983). The more elaborate controls, directing and motivational mechanism put in place by the board the more profitable the banks become (Jensen & Meckling, 1976).

The analysis revealed that board size had a positive and significant influence on ROE across industry (β= 0.8988, p=0.0020). This implied that any additional board member would result to an increase in ROE by 0.8988 units across industry. This study was consistent with Yasser, Entebang and Mansor (2011) who established board size had significant relationship with ROE of firms listed at Karachi Stock Exchange. However, the study negated Bebeji, Mohamed and Tanko (2015) who ascertained board size had negatively influenced ROE of Nigerian listed commercial banks. This finding favour larger boards as they facilitate formation of various committees required to run effectively and efficiently thus resulting to improved financial performance of commercial banks. It also favours inclusion of directors with diverse skills to assist in the monitoring and advising top management.

The second variable, board frequency of meetings had a positive and significant influence on ROE across industry (β=0.0636, p=0.0457). This Implies that any additional board meeting would result to an additional 0.0636 units of ROE across industry. This study supported Mandala, Kaijage, Aduda and Iraya (2018) who ascertained board frequency of meeting had a positive and significant influence on financial performance of commercial banks in Kenya. However, it negated Nyarige (2012) who concluded that board frequency of meeting had a negative but significant influence on financial results of the Kenyan banking sector. This result favor more board meeting enabling more time to directors to understand operations of the bank to make optimal decisions which enhances financial performance.

The third variable, board gender diversity had a negative but significant influence on ROE across industry (β=-0.0407, p=0.0210). This implied that any additional women director resulted to a decline on ROE by 0.0407 units of commercial banks in Kenya. This study supported Akpan and Amran (2014) who found board gender diversity

had an adverse relationship with financial results of listed Nigerian firms but negated Temile, Jatmick and Hidayat (2018) who ascertained board gender diversity had no relationship with firm performance of Nigerian and Ntim (2015) who established board gender diversity had a positive and significant influence on the valuation of South African listed firms on Johannesburg Stock Exchange. This implied that women were a liability in the board. However, Campbell and Minguez-Vera (2008) argues that minimal existence of female directors in the board could contribute to their contribution being neglected.

The fourth variable, board share ownership had a positive and significant influence on ROE across industry (β=0.1963, p=0.0000). This implied that any additional board share ownership resulted to an increase on ROE by 0.1963 units across industry. This finding affirmed Mandala, Kaijage, Aduda and Iraya (2018) who ascertained that board share ownership had a significant and positive relationship with ROE of Kenyan banks. However, it negated Akpan and Amran (2014) who established board share ownership had no influence on ROE of Nigerian listed firms. As articulated in agency theory, the results show that when directors own shares in the bank their interest get aligned to those of the shareholders which results to higher earnings of the bank. Table 4.82 unmoderated FEM on joint effect across banks in Kenya.

Table 4.82: Unmoderated FEM on Joint Effect across Banks in Kenya

Source	**SS**	**Df**	**Ms**		**Number of Obs**	**340**
Model	93.4452	4	23.3613		F(4, 335)=	17.3600
Residual	450.7924	335	1.3456		Prob > F	0.0000
Total	544.2376	339	1.6054		R-squared	0.6345
					Adj R-squared	0.5854
					Root MSE	1.1600
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BS	0.8988	0.2919	3.0800	0.0020	0.3247	1.4729
BFM	0.0636	0.1688	3.8000	0.0457	-0.2683	0.3956
BGD	-0.0407	0.0176	-2.3100	0.0210	-0.0754	-0.0061
BSO	0.1963	0.0359	5.4700	0.0000	0.1257	0.2669
CONS	-0.0905	0.04402	-2.0568	0.0458	-1.1530	0.9721

The FEM for all variables across industry was fitted as follows:

$ROE_{(IND)} = -0.0905 + 0.8988(BS) + 0.0636(BFM) - 0.0407(BGD) + 0.1963(BSO) \ldots\ldots 50$

The current study introduced a moderating variable bank size to establish the moderating effect on the influence of board characteristics on the financial performance of banks in Kenya across the industry. The results reveal that board size, board frequency of meetings, board gender diversity and board share ownership were established to be good forecasts of the financial performance of the Kenyan banking sector. This was supported by the coefficient of determination better known as R^2 of 66.04 percent. This implies that board size, board frequency of meetings, board gender diversity and board share ownership combined explain variability of financial performance to the extent of 66.04 percent. The other 33.96 percent can be better explained by variables not factored in the model. Overall, the $p<5$ significant level therefore, the model was significant. Since the R^2 of unmoderated was 63.45 percent which changed to 66.04 percent after introduction of the moderating variable bank size resulting to a change by 2.59 percent. This implies that bank size as a moderating variable had a positive and significant moderating effect on the influence of board characteristics on return on equity of banks in Kenya.

The study finding supported Kılıç and Kuzey (2016) who established that firm size had a positive and significant moderating effect on the influence of board gender diversity on ROA and ROE of non-financial listed firms of Turkey. The findings indicate that bank size moderated the influence of board size, board frequency of meetings, board gender diversity and board share ownership on the return on equity of banks in Kenya. This finding was in support of transaction cost theory which is in support of introduction of profitable products by larger banks. Some banks like NCBA and Equity have introduced products such as inhouse insurance, medical cover and legal services which they call one stop shop services. This showed that performance was a function of scale and ability to enjoy economies of scale. Table 4.83 moderating effect of bank size on board characteristics and financial performance of Kenya banks.

Table 4.83: Moderating Effect of Bank Size on Board Characteristics and Financial Performance all Banks in Kenya

Source	**SS**	**Df**	**Ms**		**Number of Obs**	**340**
Model	196.151	9	21.7946		F(4, 335)=	20.6600
Residual	348.086	330	1.0548		Prob > F	0.0000
Total	544.238	339	1.6054		R-squared	0.6604
					Adj R-squared	0.6430
					Root MSE	1.0270
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BSO	-0.7789	0.0645	-12.1000	0.0228	-2.0480	0.4903
BFM	0.6998	0.0449	15.6000	0.0120	-0.1843	1.5839
BGD	-0.0272	0.0082	-3.3000	0.0474	-0.1888	0.1344
BSO	0.0898	0.0364	2.4700	0.0140	0.0182	0.1614
LNBTA	0.4947	0.0416	11.9000	0.0236	-0.3243	1.3137
BS*LNBTA	0.1918	0.0193	9.9000	0.0321	-0.1882	0.5718
BFM*LNBTA	0.1283	0.0308	4.2000	0.0368	-0.4773	0.7339
BGD*LNBTA	-0.1857	0.0115	-16.1000	0.0109	-0.4127	0.0414
BSO*LNBTA	-0.6814	0.1725	-3.9500	0.0000	-1.0209	-0.3420
CONS	0.9935	0.1288	7.7000	0.0441	-1.5394	3.5264

The FEM of moderated independent variables was fitted as follows:

$ROE_{(IND)}$= 0.9935-0.7789(BS) + 0.6998(BFM) -0.0272(BGD)+0.0898(BSO)+

0.4947(LNBTA)+0.1918(BS*LNBTA) +0.1283(BFM*LNBTA)

-0.1857(BGD*LNBTA)-0.6814(BFM*LNBTA) ……..51

4.12.2 Multivariate Regression Model across Large Banks

The study carried out FEM multivariate regression model of large banks in Kenya to investigate the relationships of board characteristics and financial performance of commercial banks. The study depicted p = 4.53 percent which was below 5 percent significance level. R^2 was 54.07 percent, which meant the model explained 54.07 percent of the variation of ROE of large banks in Kenya. The other 45.93 percent was explained by the variables not considered in the study model. The result revealed that board size had a positive and significant influence on ROE across large banks in Kenya (β=0.0357, p=0.0486). The result favoured large boards as any additional director would result in additional ROE of 0.0357 units across large banks in Kenya. The finding support Yasser, Entebang and Mansor (2011) who ascertained board size had a significant influence on ROE of Pakistan listed firms.

The second variable, board frequency of meetings, had a positive and significant influence on ROE of large banks in Kenya (β=0.0419, p=0.0456). This implies that any additional board meetings resulted to additional ROE of large banks by 0.0419 units. The study contradicted Nyarige (2012) who found board frequency of meeting had a negative but significant influence on financial performance of Kenyan banking sector.

The third variable, board gender diversity, had a negative but significant influence on ROE of large banks in Kenya (β=-0.0411, p=0.0452). The result discouraged appointment of women directors as any additional female into the board would result to a decline on ROE of large banks in Kenya by 0.0411 units. The finding contradicted Ntim (2015) who found board gender diversity had positively and significantly influenced financial valuation of South African listed firms on Johannesburg Stock Exchange.

The fourth variable, board share ownership, had a positive and significant influence on ROE of large banks in Kenya (β=0.0145, p=0.0260). This meant any additional shareholding by directors would result to additional ROE of large banks by 0.0145 units. This finding support Mandala, Kaijage, Aduda and Iraya (2018) who established that board share ownership had a positive and significant influence on ROE of Kenyan banks. Table 4.84 unmoderated model on the relationship between bank characteristics and financial performance of large banks in Kenya.

Table 4.84: Unmoderated Model on the Relationship between Board Characteristics and Financial Performance of Large Banks in Kenya

Source	**SS**	**Df**	**Ms**		**Number of Obs**	**80**
Model	0.1710	4	0.0428		F(4, 335)=	0.8000
Residual	4.0312	75	0.0537		Prob > F	0.0453
Total	4.2022	79	0.0532		R-squared	0.5407
					Adj R-squared	0.5105
					Root MSE	0.2318
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BS	0.0357	0.0170	2.1000	0.0486	-0.3567	0.4281
BFM	0.0419	0.0072	5.9000	0.0456	-0.1006	0.1844
BGD	-0.0411	0.0064	-6.4000	0.0452	-0.1686	0.0864
BSO	0.0145	0.0013	11.4000	0.0260	-0.0109	0.0399
CONS	3.2438	0.4679	6.9300	0.0000	2.3116	4.1760

The FEM of all variables of large banks in Kenya was fitted as follows:

$ROE_{(LB)}$= 3.2438+0.0357(BS)+0.0419(BFM)-0.0411 (BGD)+0.0145(BSO)……52

The current study sought to establish the extent of the moderating effect of bank size on the influence of board characteristics on ROE of large banks in Kenya. Each of the independent variables was moderated by bank size (total assets). The overall p < 4.15 percent below the 5 percent significance level. The result depicts R^2 of 61.83 percent. This indicates that the variables explain the variability of ROE 61.83 percent. The other 38.07 percent was explained by the variables not considered in the study model. The unmoderated model had R^2 of 54.07 percent, which changed to 61.83 after moderation, resulting in 7.76 percent. This corroborates the significance level of p=4.15 <5 percent significance level. The findings were consistent with Saeed, Murtaza and Sohail (2013) who evaluated how board characteristics influence ROA of Pakistan firms with firm size as a moderating variable. They found firm size had a significant moderating effect on the influence of board size on the financial performance of Pakistan firms. This indicated that bank size had a moderating effect on the influence of board characteristics on ROE of Kenya banks. Table 4.85 Moderated Model on the Relationship between Board Characteristics and Financial Performance of Banks across Large Banks.

Table 4.85: Moderated Model on the Relationship between Board Characteristics and Financial Performance of Banks across Large Banks

Source	**SS**	**df**	**Ms**		**Number of Obs**	**80**
Model	0.4973	9	0.0553		F(4, 335)=	1.0400
Residual	3.7049	70	0.0529		Prob > F	0.0415
Total	4.2022	79	0.0532		R-squared	0.6183
					Adj R-squared	0.6050
					Root MSE	0.2301
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BS	0.5463	0.2291	. 02.4	0.0481	-4.0239	5.1164
BFM	-1.8159	0.1329	-13.7000	0.0176	-4.4669	0.8352
BGD	-0.7593	0.3268	-2.3200	0.0230	-1.4112	-0.1074
BSO	0.0009	0.0002	4.0000	0.0497	-0.0465	0.0483
LNBTA	-0.2524	0.1081	-2.3000	0.0382	-2.4084	1.9035
BS*LNBTA	-0.0886	0.0427	-2.0749	0.0285	-1.0395	0.8622
BFM*LNBTA	0.3692	0.0253	14.6000	0.0149	-0.1350	0.8734
BGD*LNBTA	-0.7879	0.3518	-2.2400	0.0280	-1.4896	-0.0863
BSO*LNBTA	-0.1922	0.0159	-12.1000	0.0232	-0.5101	0.1256
CONS	6.4673	0.5159	12.500	0.0214	-3.8228	16.7574

The FEM of moderated independent variables of large banks in Kenya was fitted as follows:

$ROE_{(LB)}$=6.4673+0.5463(BS)-1.8159(BFM)-0.7593(BGD)+0.0009(BSO)-
0.2524(LNBTA)-0.0886(BS*LNBTA) +0.3692(BFM*LNBTA)-
0.7879(BGD*LNBTA)-0.1922(BSO*LNBTA) …….53

4.12.3 Multivariate Regression Model Medium Banks in Kenya

The study carried out FEM multivariate regression model to investigate the behaviour of medium banks in Kenya. The analysis showed that overall p = 0.78 percent < 5 percent significance level. This meant that the study model was significant. The R^2 was 64.86 percent explaining the variability of the ROE in Kenyan medium banks. The remaining 35.14 percent variability of ROE can be explained by the variables not considered in the study model. The model result showed board size had a positive and significant influence on ROE (β= 0.0242, p=0.0400) of Kenyan medium banks. This implied that any additional board member would result in an additional ROE of 0.0242 units across medium banks in Kenya. This study negated Bebeji, Mohamed and Tanko (2015) who found board size had negatively but significantly influenced ROE of Nigerian firms. This showed that larger boards were more effective in the decision-making process resulting in improved financial results.

The second variable board frequency of meetings had a negative but significant influence on ROE of medium banks in Kenya (β= -0.0011, p=0.0485). This means that any additional board meeting would result to a decline in ROE of medium banks in Kenya by 0.0011 units. This study negated Sherif and Anwar (2015) who established board frequency of meetings had a positive influence on ROE of commercial banks in MENA Region. This meant that more meetings become costly to the firm. The third variable board gender diversity had a negative but significant influence on ROE of medium banks in Kenya (β= -0.8407, p=0.0010). This finding discourages appointment of female as directors as any additional would result to a decline on ROE of medium banks by 0.8407 units. Again, the issue of minimal existence of female directors could be a contributing factor (Campbell & Minguez-

Vera, 2008). This study contradicted Abu, Okpeh and Okpe, (2016) who ascertained that board gender diversity had no influence on ROE of medium bank in Nigeria.

The fourth variable board share ownership had a positive and significant influence on ROE of medium banks in Kenya (β= 0.0366, p=0.0494). This findings encourages board share ownership as any additional share holding by the directors would result to additional ROE of medium banks in Kenya by 0.0366 units. This study was in support of Mandala, Kaijage, Aduda and Iraya (2018) who ascertained that board share ownership had a significant and positive influence on ROE of Kenyan banks. However, the study negated Akpan and Amran (2014) who found board share ownership had no influence on ROE of Nigerian listed banks. Table 4.86 unmoderated model on the relationship between bank characteristics and financial performance of medium banks.

Table 4.86: Unmoderated Model on the Relationship between Board Characteristics and Financial Performance of Medium Banks in Kenya

Source	**SS**	**df**	**Ms**		**Number of Obs**	**90**
Model	0.5298	4	0.1324		F(4, 85)=	3.7100
Residual	3.0344	85	0.0357		Prob > F	0.0078
Total	3.5642	89	0.0400		R-squared	0.6486
					Adj R-squared	0.6186
					Root MSE	0.1889
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BS	0.0242	0.0116	2.0900	0.0400	0.0012	0.0473
BFM	-0.0011	0.0004	-2.7500	0.0485	-0.0130	0.0108
BGD	-0.8407	0.2534	-3.3200	0.0010	-1.3445	-0.3370
BSO	0.0366	0.0051	7.1765	0.0494	-0.9756	1.0488
CONS	0.0553	0.0108	5.1000	0.0611	-0.1599	0.2705

The FEM of all variables across medium banks in Kenya was fitted as follows:

$ROE_{(MB)}$=0.0553+0.0242(BS)-0.0011(BFM)-0.8407(BGD)+0.0366(BSO)…….54

The current study sought to establish the extent of the moderating effect of bank size on the influence of board characteristics on ROE of medium banks in Kenya. Each of the independent variables was moderated by bank size (total assets). The result

indicates the p= 2.88 percent < 5 percent significance level. R^2 was 70.00 percent. The result indicated that the study model explains 70 percent variability of ROE leaving 30.00 percent which can be explained by variables not in the study model. The unmoderated model had R^2 of 64.86 percent, which changed to 70.00 percent after moderation, resulting in a change of 5.14 percent. This meant that bank size moderated the influence of board characteristics on ROE of medium banks in Kenya. This study was consistent with Saeed, Murtaza and Sohail (2013) who found firm size moderated financial results of Pakistan listed firms. Table 4.87 moderated model on the relationship between board characteristics and financial performance of medium banks in Kenya.

Table 4.87: Moderated Model on the Relationship between Board Characteristics and Financial Performance of Banks across Medium Banks in Kenya

Source	**SS**	**df**	**MS**		**Number of obs =**	**90**
Model	0.7127	9	0.0792		F(9, 80)	2.2200
Residual	2.8515	80	0.0356		Prob > F	0.0288
Total	3.5642	89	0.0400		R-squared	0.7000
					Adj R-squared	0.6599
					Root MSE	0.1888
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BS	0.5114	0.0524	9.8000	0.0332	-0.5304	1.5533
BFM	0.5241	0.0355	14.8000	0.0144	-0.1827	1.2308
BGD	0.0071	0.0032	2.2000	0.0483	-0.0571	0.0712
BSO	0.0098	0.0022	4.5000	0.0466	-0.0341	0.0537
LNBTA	0.5158	0.0329	15.7000	0.0121	-0.1390	1.1705
BS*LNBTA	-0.1066	0.0137	-7.8000	0.0440	-0.3799	0.1667
BFM*LNBTA	-0.1359	0.0087	-15.6000	0.0122	-0.3087	0.0370
BGD*LNBTA	-0.1596	0.0102	-15.7000	0.0121	-0.3621	0.0429
BSO*LNBTA	0.0571	0.0145	3.9000	0.0470	-0.2324	0.3466
CONS	-2.0038	0.1273	-15.7000	0.0120	-4.5377	0.5301

The FEM of moderated independent variables of medium banks in Kenya was fitted as follows:

$ROE_{(MB)}$=-2.0038+0.5114(BS)+0.5241(BFM)+0.0071(BGD)+0.0098(BSO)+
0.5158(LNBTA)-0.1066(BS*LNBTA-0.1359(BFM*LNBTA)-
0.1596(BGD*LNBTA) +0.0571(BSO*LNBTA) …….55

4.12.4 Multivariate Regression Model across Small Banks in Kenya

The study carried out FEM multivariate regression model to investigate the behaviour of board characteristics in relation to ROE of small banks in Kenya. The regression model was found to be a good determinant of the ROE of small banks in Kenya. The result demonstrates that the study model was significant. R^2 was 52.85 percent. This implies that 52.85 percent of ROE variability of small banks in Kenya was explained by the variables in the study model. The other 47.15 percent can be explained by the variables not considered in the model. The regression model reveals that the linkage of the variables was satisfactory. This was corroborated by the overall p= 0.01 percent, which was lower than 5 percent significance level.

The result shows board size had a negative but significant influence on ROE of small banks in Kenya (β= -0.0805, p=0.0213). This implies that any additional board member would result to a decline in ROE of small banks by 0.0805 units. The results deviate from the findings of the industry, large and medium banks which encourages larger boards. This study affirmed Adebayo, Olusola and Abiodun (2013) who found board size had a negative but significant relationship with ROE of Nigerian firms. The second variable board frequency of meetings had a positive and significant influence on ROE of small banks in Kenya (β= 0.0781, p=0.0128). This implies that any additional board meetings resulted to additional ROE of small banks in Kenya by 0.0781 units. This study contradicted Johl, Kaur and Cooper (2015) who found board frequency of meetings had a negative but significant influence on ROA of Malaysian listed firms.

The third variable, board gender diversity had a negative but significant influence on ROE across small banks (β= -2.8270, p=0.0000). This implied that any additional female director resulted to a decline in ROE by 2.8270 units of small banks in

Kenya. It is worthy noting the arguments of Campbell and Minguez-Vera (2008) who argued that almost non-existence of female directors might have contributed to not noticing their contribution in the board. The study negated Ntim (2015) who found board gender diversity improved valuation of listed firms in Johanesburg Stock Exchange. This study discourages appointment of female directors to boards of small banks in Kenya. The fourth variable, board share ownership had a negative but significant influence on ROE across small banks in Kenya (β= -1.4125, p=0.0452). This implied that any additional shareholding by directors had resulted to a decline of ROE by 1.4125 units across small banks in Kenya. This study was in support of Vafaei, Ahmed and Mather (2015) who found board share ownership had a negative but significant influence on TBQ of Australian firms. The study discouraged board share ownership as any additional share holding was disadvantageous to firm financial performance. Table 4.88 unmoderated model on the relationship between board characteristics and financial performance of small banks in Kenya.

Table 4.88: Unmoderated Model on the Relationship between Board Characteristics and Financial Performance of Small Banks in Kenya

Source	**SS**	**df**	**MS**		**Number of obs =**	**170**
Model	33.1192	4	8.2798		F(4, 165)	6.08
Residual	224.569	165	1.36102		Prob > F	0.0001
Total	257.688	169	1.52478		R-squared	0.5285
					Adj R-squared	0.5074
					Root MSE	1.1666
ROE	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
BS	-0.0805	0.0064	-12.5000	0.0213	-0.2074	0.04649
BFM	0.0781	0.0351	2.2262	0.0128	-0.0226	0.17893
BGD	-2.8270	0.7588	-3.7300	0.0000	-4.3253	-1.3287
BSO	-1.4125	0.1986	-7.1108	0.0452	-5.7535	2.92864
CONS	2.3224	0.4501	5.1600	0.0000	1.43364	3.21108

The FEM of all variables across small banks in Kenya was fitted as follows:

$ROE_{(SB)}$=2.3224-0.0805(BS)+0.0781(BFM)-2.8270(BGD)-1.4125(BSO)……56

The current study sought to establish the extent of the moderating effect of bank size on the influence of board characteristics on ROE of Kenyan small banks. Each of the independent variables was moderated by the bank size (total assets). The result indicates p= 0.04 percent < 5 percent significance level. R^2 was 66.97 percent. Which explains that the study model explains ROE variability by 66.97 percent leaving 33.03 percent to be explained by variables not incorporated in the study model. The unmoderated model had R^2 of 52.85 percent, which changed to 66.97 percent, resulting in a change of 14.12 percent. This meant that bank size had a positive and significant moderating effect on the influence of board characteristics on ROE of small banks in Kenya. Table 4.89 moderated model on the relationship between board characteristics and financial performance of small banks in Kenya.

Table 4.89: Moderated Model on the Relationship between Board Characteristics and Financial Performance of Small Banks in Kenya

Source	**SS**	**df**	**MS**		**Number of obs =**	**170**
Model	1.4264	9	0.1585		F (9, 160)	3.6300
Residual	6.9767	160	0.0436		Prob > F	0.0004
Total	8.4031	169	0.0497		R-squared	0.6697
					Adj R-squared	0.6230
					Root MSE	0.2088
ROE	Coef. Std	. Err.	T	P>t	[95% Conf.	Interval]
BS	0.1280	0.0217	5.9000	0.0456	-0.3014	0.5573
BFM	0.0509	0.0029	17.3000	0.0459	-0.0071	0.1090
BGD	0.0327	0.0032	10.1000	0.0314	-0.0313	0.0968
BSO	0.0067	0.0015	4.6000	0.0457	-0.0225	0.0360
LNBTA	0.3497	0.0195	17.9000	0.0475	-0.0361	0.7356
BS*LNBTA	-0.0981	0.0097	-10.1000	0.0316	-0.2904	0.0943
BFM*LNBTA	-0.0129	0.0013	-9.9000	0.0322	-0.0385	0.0127
BGD*LNBTA	-0.1695	0.0854	-1.9800	0.0490	-0.3381	-0.0008
BSO*LNBTA	-0.4757	0.2212	-2.1500	0.0330	-0.9126	-0.0389
CONS	-0.6262	0.0429	-14.6000	0.0146	-1.4736	0.2213

The FEM of moderated variables of small banks in Kenya was fitted as follows:

$ROE_{(SB)}$=-0.6262+0.1280(BS)+0.0509(BFM)+0.0327(BGD)+0.0067(BSO)+
0.3497(LNBTA)-0.0981(BS*LNBTA)-0.0129(BFM*LNBTA)-
0.1695(BGD*LNBTA)-0.4757(BSO*LNBTA) ……57

4.13 Summary of Study Hypotheses

According to Cooper and Schindler (2011), the process of hypothesis testing is where the study infers the results obtained from the sampled data from a larger population basing on the presuppositions earlier made before the study. The study carried out hypothesis testing by ascertaining significance levels of the explanatory variables of commercial banks in Kenya. In testing the significance of the explanatory variables, the study aimed to ascertain the acceptance or non-acceptance of the H_o from the sample used. The study tested the hypothesis enumerated in section 1.4 of the first chapter. Tables 4.34 to 4.49 guided the study to adopt FEM to analyze the influence of board characteristics on ROE of commercial banks in Kenya. The four explanatory variables under study were board size, board frequency of meetings, board gender diversity and board share ownership. Bank size was the moderating variable. ROE was the dependent variable.

Ho_1: Board size has no significant influence on financial performance of commercial banks in Kenya.

The fixed effect regression result table 4.50 revealed p= 0.0000 which was lower than 5 percent significance level. The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board size had a positive and significant influence on financial performance of commercial banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board size on the ROE and found that bank size had a positive and significant moderating effect on the influence of board size on ROE across the industry (β=0.1246, p=0.0451) table 4.51. Table 4.52 revealed board size had a positive and significant influence of ROE of large banks in Kenya (β=0.0130, p=0.0395). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board size had a positive and significant influence on financial performance of large banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board size on the ROE of large banks and found that bank size had a negative but significant moderating effect on the influence of board size on ROE of large banks (β=-0.0780, p=0.0484) table 4.53.

Table 4.54 revealed board size had a positive and significant influence of ROE of medium banks in Kenya (β=0.0207, p=0.0073). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board size had a positive and significant influence on financial performance of medium banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board size on the ROE of medium banks and found that bank size had a negative but significant moderating effect on the influence of board size on ROE of medium banks (β=-0.0863, p=0.0455) table 4.55. Table 4.56 revealed board size had a negative but significant influence of ROE of small banks in Kenya (β=-0.1398, p=0.0240). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board size had a negative but significant influence on financial performance of small banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board size on the ROE of small banks and found that bank size had a negative but significant moderating effect on the influence of board size on ROE of small banks (β=-0.3667, p=0.0050) table 4.57.

Ho_2: Board frequency of meetings has no Significant influence on financial performance of commercial banks in Kenya.

Table 4.58 revealed board frequency of meetings had a positive and significant influence of ROE across the banking sector (β=0.4561, p=0.0080). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board frequency of meetings had a positive and significant influence on financial performance of across the banking sector. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board frequency of meetings on ROE across banks and found that bank size had a negative but significant moderating effect on the influence of board frequency of meetings on ROE across banks (β=-0.2469, p=0.0220) table 4.59. Table 4.60 revealed board frequency of meetings had a positive and significant influence of ROE of large banks in Kenya (β=0.0702, p=0.0287). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board frequency of meetings had a positive and significant

influence on financial performance of large banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board frequency of meetings on the ROE of large banks and found that bank size had a positive and significant moderating effect on the influence of board frequency of meetings on ROE of large banks (β=0.0529, p=0.0476) table 4.61.

Table 4.62 revealed board frequency of meetings had a positive and significant influence of ROE of medium banks in Kenya (β=0.0021, p=0.0359). This result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board frequency of meetings had a positive and significant influence on financial performance of medium banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board frequency of meetings on the ROE of medium banks and found that bank size had a negative but significant moderating effect on the influence of board frequency of meetings on ROE medium banks (β=-0.0281, p=0.0070) table 4.63. Table 4.64 revealed board frequency of meetings had a negative but significant influence of ROE of small banks in Kenya (β=-0.5088, p=0.0000). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board frequency of meetings had a negative but significant influence on financial performance of small banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board frequency of meetings on the ROE of small banks and found that bank size had a negative but significant moderating effect on the influence of board frequency of meetings on ROE of small banks (β=-0.0306, p=0.0100) table 4.65.

H_{o3}: Gender diversity in board membership has no significant influence on financial performance of commercial banks in Kenya.

Table 4.66 revealed board gender diversity had a positive and significant influence of ROE across the banking sector (β=0.2050, p=0.0160). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board gender diversity had a positive and significant influence on financial performance of across the banking sector. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board gender diversity on the ROE across banks and found that bank size had a

negative but significant moderating effect on the influence of board gender diversity on ROE across banks (β=-0.6969, p=0.0000) table 4.67. Table 4.68 revealed board gender diversity had a negative but significant influence of ROE of large banks in Kenya (β=-0.0685, p=0.0247). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board gender diversity had a negative but significant influence on financial performance of large banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board gender diversity on the ROE of large banks and found that bank size had a negative but significant moderating effect on the influence of board gender diversity on ROE of large banks (β=-0.4391, p=0.0129) table 4.69.

Table 4.70 revealed board gender diversity had a negative but significant influence of ROE of medium banks in Kenya (β=-0.7883, p=0.0024). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board gender diversity had a negative but significant influence on financial performance of medium banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board gender diversity on the ROE of medium banks and found that bank size had a negative but significant moderating effect on the influence of board gender diversity on ROE of medium banks (β=-0.2195, p=0.0020) table 4.71. Table 4.72 revealed board gender diversity had a negative but significant influence of ROE of small banks in Kenya (β=-3.2028, p=0.0000). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board gender diversity had a negative but significant influence on financial performance of small banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board gender diversity on the ROE of small banks and found that bank size had a negative but significant moderating moderating effect on the influence of board gender diversity on ROE of small banks (β=-0.2696, p=0.0000) table 4.73.

H_{o4}: Board share ownership does not significantly influence financial performance of commercial banks in Kenya.

Table 4.74 revealed board share ownership had a positive and significant influence of ROE across the banking sector (β=0.2454, p=0.0000). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board share ownership had a positive and significant influence on financial performance across the banking sector. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board share ownership on the ROE across banks and found that bank size had a negative but significant moderating effect on the influence of board share ownership on ROE across banks (β=-0.0834, p=0.0373) table 4.75. Table 4.76 revealed board share ownership had a positive and significant influence of ROE of large banks in Kenya (β=0.0173, p=0.0155). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board share ownership had a positive and significant influence on financial performance of large banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board share ownership on the ROE of large banks and found that bank size had a negative but significant moderating effect on the influence of board share ownership on ROE of large banks (β=-0.0103, p=0.0092) table 4.77.

Table 4.78 revealed board share ownership had a positive and significant influence of ROE of medium banks in Kenya (β=0.3038, p=0.0355). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study concluded that board share ownership had a positive and significant influence on financial performance of medium banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board share ownership on the ROE of medium banks and found that bank size had a positive and significant moderating effect on the influence of board share ownership on ROE of medium banks (β=0.0096, p=0.0489) table 4.79. Table 4.80 revealed board share ownership had a negative but significant influence of ROE of small banks in Kenya (β=-0.7238, p=0.0250). The result guided the study to reject the stated H_0 with 95 percent confidence level. By failing to accept the H_o the study

concluded that board share ownership had a negative but significant influence on financial performance of large banks in Kenya. The study introduced a moderating variable bank size to ascertain the moderating effect on the influence of board share ownership on the ROE of small banks and found that bank size had a negative but significant moderating effect on the influence of board share ownership on ROE of small banks (β=-0.4872, p=0.0010) table 4.81.

Ho_5: The bank size has no significant moderating effect on the influence of board characteristics on the financial performance of commercial banks in Kenya.

The null hypothesis was that bank size has no significant moderating effect on the influence of board characteristics on financial performance of commercial banks in Kenya. The fixed effect regression result table 4.82 revealed bank size had a significant moderating effect on the influence of board size, board frequency of meetings, board gender diversity and board share ownership on return on equity of commercial banks in Kenya. This was supported by the overall p=0.0000 <5 percent significance level. The result further indicated that all moderated board size, board frequency of meetings, board gender diversity and board share ownership had their P-value of 0.0321, 0.0368, 0.0109 and 0.0000 respectively which is lower than 5 percent significance level. The R^2 of the unmoderated regression model was 63.45 percent which changed to 66.04 percent after moderation. Since the p-values of the moderated variables and the R^2 had changed by 2.59 percent which was significant, the study therefore failed to accept the H_0 that bank size has no significant moderating effect on the influence of board characteristics on financial performance of commercial banks in Kenya and adopt H_1 that bank size has a positive and significant moderating effect on the influence of board characteristics on financial performance of banks in Kenya which was in tandem with Fairchild and Mackinnon, (2009).

The result for moderated variables for the large banks displayed p-values 0.0285, 0.0149, 0.0280 and 0.0232 for moderated board size, board frequency of meetings, board gender diversity and board share ownership respectively with R^2 for unmoderated variables changing from 54.07 to 61.83 resulting to a change by 7.76 percent which was significant. Therefore, the study failed to accept the H_0 and

adopted H_1 bank size has a positive and significant moderating effect on the influence of board characteristics on financial performance of large banks in Kenya comforming with Fairchild and Mackinnon, (2009).

The result for moderated variables for the medium banks displayed p-values 0.0440, 0.0122, 0.0121 and 0.0470 for moderated board size, board frequency of meetings, board gender diversity and board share ownership respectively with R^2 for unmoderated variables changing from 64.86 to 70.00 resulting to a change by 5.14 percent which was significant. Therefore, the study failed to accept the H_0 and adopted H_1 that bank size has a positive and significant moderating effect on the influence of board characteristics on financial performance of medium banks in Kenya and this was in line with Fairchild and Mackinnon, (2009).

The result for moderated variables for the small banks displayed p-values 0.0316, 0.0322, 0.0490 and 0.0330 for moderated board size, board frequency of meetings, board gender diversity and board share ownership respectively with R^2 for unmoderated variables changing from 52.85 to 66.97 resulting to a change by 14.12 percent which was significant. Therefore, the study failed to accept the H_0 and adopted H_1 bank size has a significant moderating effect on the influence of board characteristics on financial performance of small banks in Kenya, which was in line with Fairchild and Mackinnon, (2009).

4.14 Summary of the Chapter

This chapter presented an analysis, findings and discussion of collected secondary panel data. The study applied descriptive statistics, correlation and FEM. FEM revealed board size had a positive and significant influence on ROE of the industry, large, medium and small banks in Kenya. The finding supported Aduda, Chogii and Magutu (2013) who found board size had a positive and significant influence on ROA and TBQ on listed firms on the Nairobi Securities Exchange but contradicted Mohamed and Atheru (2017) who found board size had a negative but significant influence on ROA of Mobile service provider in Kenya. However, the study found board size had a negative but significant influence on small banks in Kenya. Board frequency of meetings had a positive and significant impact on ROE on the industry, large and medium banks in Kenya. This study was in support of Al-Daoud, Saidin

and Abidin (2016) who found board frequency of meetings had a positive and significant influence on financial performance of listed firms on the Jordanian Stock Exchange but negated Nyarige (2012) who found board frequency of meetings had a negative but significant influence on TBQ of Kenyan banking sector. In regard, to small banks, the study found board frequency of meetings had a negative but significant influence. Board gender diversity had a positive and significant influence on ROE across the industry. This affirmed the findings of Ntim (2015) who found board gender diversity had a positive and significant influence on firm valuation on South African listed firms on Johannesburg Stock Exchange but negated Akpan and Amran (2014) who found women directorship had a negative but significant influence on the financial performance of Nigerian listed firms.

Board share ownership had a positive and significant influence on ROE on the industry, large and medium banks in Kenya. This was in support with Mamatzakis and Bermpei (2015) who found board share ownership had a positive and significant influence on US investment banks but negated Bashir, Fatima, Sohail, Rasul and Mehboob (2018) who found board share ownership having a negative but significant influence on ROE on Pakistan commercial banks. The small banks in Kenya revealed that board share ownership had a negative but significant influence on ROE. The moderating variable bank size had a significant effect on the influence of board characteristics on ROE of Kenyan banking sector. This study was in support of Saeed, Murtaza and Sohail, (2013) who found bank size had a positive and significant moderating effect on ROA on the Pakistan banking sector. Table 4.94 outlines the summary of statistical hypotheses results.

Table 4.90: Summary of Statistical Hypothesis Testing Results

Null Hypothesis	Criteria	P-Value	Sector	Statistical Significance	Decision	Impact
Board size has no significant influence on financial performance of commercial banks in Kenya.	Reject H_0 if p-value <0.05	P<0.05	Industry	Yes	Reject	Positive
			Large Banks	Yes	Reject	Positive
			Medium Banks	Yes	Reject	Positive
			Small Banks	Yes	Reject	Negative
Board frequency of meetings has no significant influence on financial performance of commercial banks in Kenya.	Reject H_0 if p-value <0.05	P<0.05	Industry	Yes	Reject	Positive
			Large Banks	Yes	Reject	Positive
			Medium Banks	Yes	Reject	Positive
			Small Banks	Yes	Reject	Negative
Gender diversity in board membership has no significant influence on financial performance of commercial banks in Kenya.	Reject H_0 if p-value <0.05	P<0.05	Industry	Yes	Reject	Positive
			Large Banks	Yes	Reject	Negative
			Medium Banks	Yes	Reject	Negative
			Small Banks	Yes	Reject	Negative
Board share ownership does not significantly influence financial performance of commercial banks in Kenya.	Reject H_0 if p-value <0.05	P<0.05	Industry	Yes	Reject	Positive
			Large Banks	Yes	Reject	Positive
			Medium Banks	Yes	Reject	Positive
			Small Banks	Yes	Reject	Negative
The bank size has no significant moderating effect on the influence of board characteristics on financial performance of commercial banks in Kenya.	Reject H_0 if p-value <0.05	P<0.05	Industry	Yes	Reject	Positive
			Large Banks	Yes	Reject	Positive
			Medium Banks	Yes	Reject	Positive
			Small Banks	Yes	Reject	Positive

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter aims to provide a summary of the empirical findings derived from the current study, draw appropriate conclusions as well as policy recommendations based on the evaluation done in chapter four. The overall objective of the current study was to ascertain the impact of board characteristics on the financial results of the Kenyan banking sector. The presentation of this chapter is organized around specific objectives and hypotheses as enumerated in sections 1.3 and 1.4. Conclusions of the study were aligned with the specific objectives, particularly focusing on whether the research hypothesis was rejected or accepted as per the findings of the study. To add value to both regulatory and managerial policies, some recommendations have been shaped in line with the study conclusions. Finally, the study outlined some recommendations in the furtherance of the knowledge in this area of study.

5.2 Summary of Findings

The study sought to ascertain the influence of board characteristics on the financial results of the Kenyan banking sector. The study adopted panel data to evaluate the influence of board size, board frequency of meetings, board gender diversity and board share ownership on the financial results of the Kenyan banking sector. In addition, the study sought to establish the extent of the moderating effect of bank size on the influence of board characteristics on financial results of commercial banks in Kenya. Analysis was carried out to evaluate how the banking industry, large banks, medium banks and small banks, relate with board characteristics Vis a Vis their financial performance. The brief statement and discussion followed the study hypothesis formulated in chapter one of the study.

5.2.1 The Influence of Board Size on Financial Performance of Commercial Banks

The first objective of the study was to determine the influence of board size on the ROE of commercial banks in Kenya. The hypothesis was tested based on the results revealed in the fixed effect regression model. Board size significantly and positively influenced ROE across the banking sector, large banks and medium banks. However, board size had a negative but significant relationship with the ROE of small banks. Bank size had a positive and significant moderating effect on the influence of board size on ROE of the banking industry, large banks, medium banks and small banks.

5.2.2 The Influence of Board Frequency of Meetings on Financial Performance of Commercial Banks

The second objective of the study was to assess the influence of board frequency of meetings on the ROE of the Kenyan banking sector. The hypothesis was tested based on the results as depicted by the fixed effect regression model. Board frequency of meetings had a positive and significant influence on ROE in all banks, large banks and medium banks in Kenya. However, board frequency of meetings had a negative but significant influence on ROE across small banks in Kenya. Bank size had a positive and significant moderating effect on the influence of board frequency of meetings on ROE across the industry, large banks, medium banks and small banks in Kenya.

5.2.3 The Influence of Board Gender Diversity on Financial Performance of Commercial Banks

The third objective was to ascertain the influence of board gender diversity on ROE of the Kenyan banking sector. The hypothesis was tested based on the results shown by the fixed effect panel regression model. The result revealed that board gender diversity had a negative but significant influence on the ROE of large banks, medium banks and small banks in Kenya. However, it had a positive and significant influence on ROE across the industry. Bank size had a positive and significant moderating effect on the influence of board gender diversity on ROE across the industry, large banks, medium banks and small banks in Kenya.

5.2.4 The Influence of Board Share Ownership on Financial Performance of Commercial Banks

The fourth objective was to examine the extent to which the board share ownership influenced the ROE of commercial banks in Kenya. The hypothesis was tested based on the results as shown by the fixed effect panel regression model. Board share ownership had a positive and significant influence on the ROE of all banks, large banks and medium banks in Kenya. However, board share ownership had a negative but significant influence on ROE on small banks in Kenya. Bank size had a positive and significant moderating effect on the influence of board share ownership on ROE of all banks, large banks, medium banks and small banks in Kenya.

5.2.5 The Extent of the Moderating Effect of Bank Size on the Influence of the Board Characteristics on Financial Performance of Commercial Banks in Kenya

The banking industry showed a significant relationship of board characteristics and financial performance of commercial banks with a p-value of 0.0000, which was lower than 5 percent critical value and R-squared of 63.45 percent. These results showed that the variables explain the 63.45 percent variation of ROE across the industry, leaving an unexplained 36.55 percent composed of variations due to variables not considered in the study. After the introduction of the bank size as a moderating variable, R-squared was 66.04 percent with a p-value of 0.0000. This implied an increase of 2.59 percent, affirming that bank size had a positive and significant effect on the influence of board characteristics on financial results of commercial banks in Kenya.

Clustering banks according to their total asset values as at 31st December 2009, large banks revealed a significant relationship of board characteristics and bank performance with a p-value of 0.0453, which is below the critical value of 0.05 and R-Squared of 54.07 percent. This outcome indicated that the variables explain 54.07 percent variation of ROE of large banks, leaving an unexplained 45.93 percent consisting of variations due to variables not considered. After the introduction of bank size as a moderating variable, R-Squared was 61.83 percent with a p-value of 0.0415. This indicated an increase of 7.76 percent, confirming bank size had a

moderating effect on the influence of board characteristics on the financial results of large banks in Kenya. Medium banks revealed a significant relationship of banks characteristics and bank performance with p-value of 0.0078, which is below the critical value of 0.05 and R-Squared of 64.86 percent. This outcome indicated that the variables explain 64.86 percent variation in ROE of medium banks, leaving an unexplained 35.14 percent consisting of variations due to variables not considered. After the introduction of bank size as a moderating variable, R-Squared was 70.00 percent with a p-value of 0.0288. This indicated an increase of 5.14 percent, confirming bank size had a moderating effect on the influence of board characteristics on the financial results of medium banks in Kenya.

Small banks revealed a significant relationship of board characteristics and bank performance with p-value of 0.0001 which is below the critical value of 0.05 and an R-Squared of 52.85 percent. This outcome indicated that the variables explain the 52.85 percent variation of ROE of small banks leaving an unexplained 47.15 percent consisting of variations due to variables not considered. After the introduction of bank size as a moderating variable, R-Squared was 66.97 percent with a p-value of 0.0004. This indicated an increase of 14.12 percent confirming bank size had a moderating effect on the influence of board characteristics on financial results of small banks in Kenya.

5.3 Conclusion

Kenya as one of the developing economies has a weaker legal systems and regulatory framework which calls for strong and dependable board governance which will instil discipline and deter malpractices and poor financial performances. Therefore, board characteristics will play a pivotal role in instituting stability and confidence in equity holders of commercial banks in Kenya which drives the economy. Below are conclusions of the individual board characteristics and financial performance of commercial banks in Kenya as per the five specific objectives enumerated in chapter one.

5.3.1 Effect of Board Size on Financial Performance of Commercial Banks in Kenya

This study adopted a panel fixed effect regression model to draw conclusions on the hypotheses. The study found that board size had a positive and significant influence on ROE across the banking sector, large banks and medium banks in Kenya. This meant that a larger board may incorporate specialized skills, well blended expertise and closer monitoring of top management, culminating in optimal decisions and resulting in improved financial results of commercial banks in Kenya. However, the study found board size had a negative but significant influence on ROE across small banks in Kenya. This imply that in small banks smaller sized boards are recommended.

Due to the nature of the banking system in which banks operate, the number of directors should be limited to a good number that bore a mixture with various interests that improved financial performance. The size should enable the formation of different board committees used to monitoring, controlling and advising top management as mandated by the regulator. The formation of these committees enables to bring on board different skills in specific areas to add value to the bank. The board composition shall be able to give investors some level of comfort and confidence, attracting investors' deposits and patronization. Board membership becomes fully accountable for their activities, actions and management of commercial bank.

5.3.2 Effect of Board Frequency of Meetings on Financial Performance of Commercial Banks in Kenya.

Based on fixed effect panel data analysis, the study found board frequency of meetings had a positive and significant influence on ROE across the banking sector, large banks and medium banks in Kenya. Furthermore, board frequency of meetings had a negative but significant influence on ROE across small banks in Kenya. Board frequency of meetings enables directors to discuss fully to understand the operations of the bank. It is during board meetings where directors get to examine the operations of the bank, review financial performance, highlight qualities that may bring change in management for better financial operations, and give appropriate advice and

recommendations in areas that may require management attention. However, fewer meetings may bring better corporate governance performance impacting positively on financial results. This is where the directors get time to discuss, review and give consensus recommendations, which improve operations, financial performance and the image of the bank. Additionally, it is during these board meetings that the directors can provide guidance and oversight mandates. On the contrary, as more board meetings are held, they become costlier to the bank. The study, therefore, concluded that six board meetings should be allowed in a year at least.

5.3.3 Effect of Gender Diversity in Board Membership on Financial Performance of Commercial Banks in Kenya.

Based on the FEM, the current study found board gender diversity had a positive and significant influence on ROE across the banking sector. However, board gender diversity had a negative but significant influence on the ROE of large banks, medium banks and small banks in Kenya. The industry favors more female appointments as directors because they are known to bring on board a greater range of perspective, knowledge, information, controls and skills resulting in improved financial performance. Women directors are keener compared to their male counterparts in attending board meetings and more considerate to all stakeholders in their discussions and concerned about management delivery. Therefore, the study concluded enhancement of board gender diversity to 30-35 percent, and also recommends the existence of board gender diversity policy.

5.3.4 Effect of Board Share Ownership on Financial Performance of Commercial Banks in Kenya.

Based on the FEM, the current study concluded that board share ownership had a positive and significant influence on ROE across the banking sector, large banks and medium banks in Kenya. However, the study found board share ownership had a negative but significant influence on the ROE of small banks in Kenya. Allowing board share ownership is one way of aligning the interests of the board members to that of the shareholders. Board share ownership is considered one of the best methods of compensating board members through employee share option programs and dividend payout. Share ownership enables directors to refocus their attention

thereby enhancing the financial results of the Kenyan banking sector. This created an avenue for directors to boost their wealth. The study concluded that board share ownership be kept at the minimum possible for motivation and avoidance of board dominance.

5.3.5 Effect of Bank Size on Financial Performance of Commercial Banks in Kenya

First, to achieve this objective, this study carried out a joint effect on the influence of board characteristics on the financial performance of commercial banks in Kenya and found a significant relationship. The result revealed a p=0.0000, which is below the critical value of 0.05 and R-Squared of 63.45 percent. This study found that bank size had a positive moderating effect on the influence of board characteristics on the financial performance of commercial banks in Kenya. This implied that the larger the banks, the greater the ability to make huge profits as opposed to the smaller-sized banks. Bank size moderated positively board size, board frequency of meetings, board gender diversity and board share ownership. Bank size moderated positively and significantly on the influence of board characteristics on the ROE of all banks in Kenya. The larger the bank, the higher economies of scale enjoyed by the bank coupled with the ability to introduce new and diversified products into the market, which generates more revenues when compared with smaller banks. The study concluded that a mechanism be put in place to encourage mergers to reduce existence of small banks.

5.4 Contribution of the Thesis to Knowledge

This study contributes to the body of knowledge by designing a comprehensive model for determining acceptable measures and best combinations of board characteristics to improve financial performance of commercial banks. Optimum board characteristics aid directors to effectively and efficiently institute controlling and monitoring mechanisms that may deter top management from malpractices that cause banks to underperform and leading to others collapsing. This study elaborated how firms that embraced board frequency of meetings, board gender diversity, optimal board size and opening up share ownership to the directors enhanced profitability of banks.

The study enlightened how boards can improve on financial performance through size. The study grouped all banks into three clusters to establish how board characteristics relate to financial performance, where small banks had a negative and significant influence on all independent variables in both unmoderated and moderated models. Banks can use their size in enhancing the identification of the best models of business. The size of a bank facilitates more product diversity and economies of scales stream, which results in enhanced financial stability of banks in the economy.

The current study contributed to the theoretical development related to board characteristics and financial performance by reviewing five theories namely; agency theory, stakeholder theory, stewardship theory, transaction cost theory and resource dependence theory. It elaborated on their applicability, relevance to the current study and their development over the years to date. The study has brought forthwith various measures outlined in global, regional and local perspectives in terms of empirical analysis.

5.5 Policy and Managerial Recommendations

Based on the study findings, to enhance the effectiveness and efficiency of the board of directors, the current study advocates that small banks be merged with other banks or incorporate a strategic investor to improve profitability. From the study, small banks were found to have a mean ROE of 3.79 with a maximum loss of 132.66 percent and a maximum profit of 41.40 percent, compared to large banks' ROE of 30.32 percent with a minimum of 16.37 percent and a maximum of 50.52 percent.

The study also established that all independent variables had a negative influence on the ROE of small banks in Kenya. This calls for a review of the board size of between 4 and 6, being a reduction from a maximum of 10. Board frequency to be reduced to 10 from 18, as large banks had a maximum of 18. Board gender diversity should be enhanced to between 20.00 percent and 33.00 percent.

Lastly, shareholders need to know that they have a pertinent role to play in making sure that banking institutions' management follow and adopt strong board governance practices. The shareholders can do this through establishing certain

control mechanism through the board, thus undertake the monitoring process to a higher level.

5.6 Recommendations for Further Research

The results of the study revealed that the variables considered can only explain 63.45 percent of the variability in the return on equity of commercial banks in Kenya. This meant that there is an element of 36.55 percent of unexplained contribution to ROE of commercial banks, comprised of variables not incorporated in the model. Therefore, future research is recommended on other variables of board characteristics such as board remunerations, board age and board committees. Further research encompassing other performance measurement variables such as Tobin's Q, DY, operating cash flow, earnings per share and profit margin among other measures should be done.

The researcher recommends that future research should be directed towards validating the results of this study by conducting similar research in micro-finance in Kenya by collecting data from different sources. Further research is recommended to include the neighbouring countries for comparison purposes.

The study also limited itself to only bank size as the moderator. To give a better insight on the relationship that exists between board characteristics and the financial performance of banks in Kenya, other alternative moderators ought to be explored by future scholars. To make better conclusions on impacts of firm size, this study’s outcome, therefore, serves as a superior background for additional studies.

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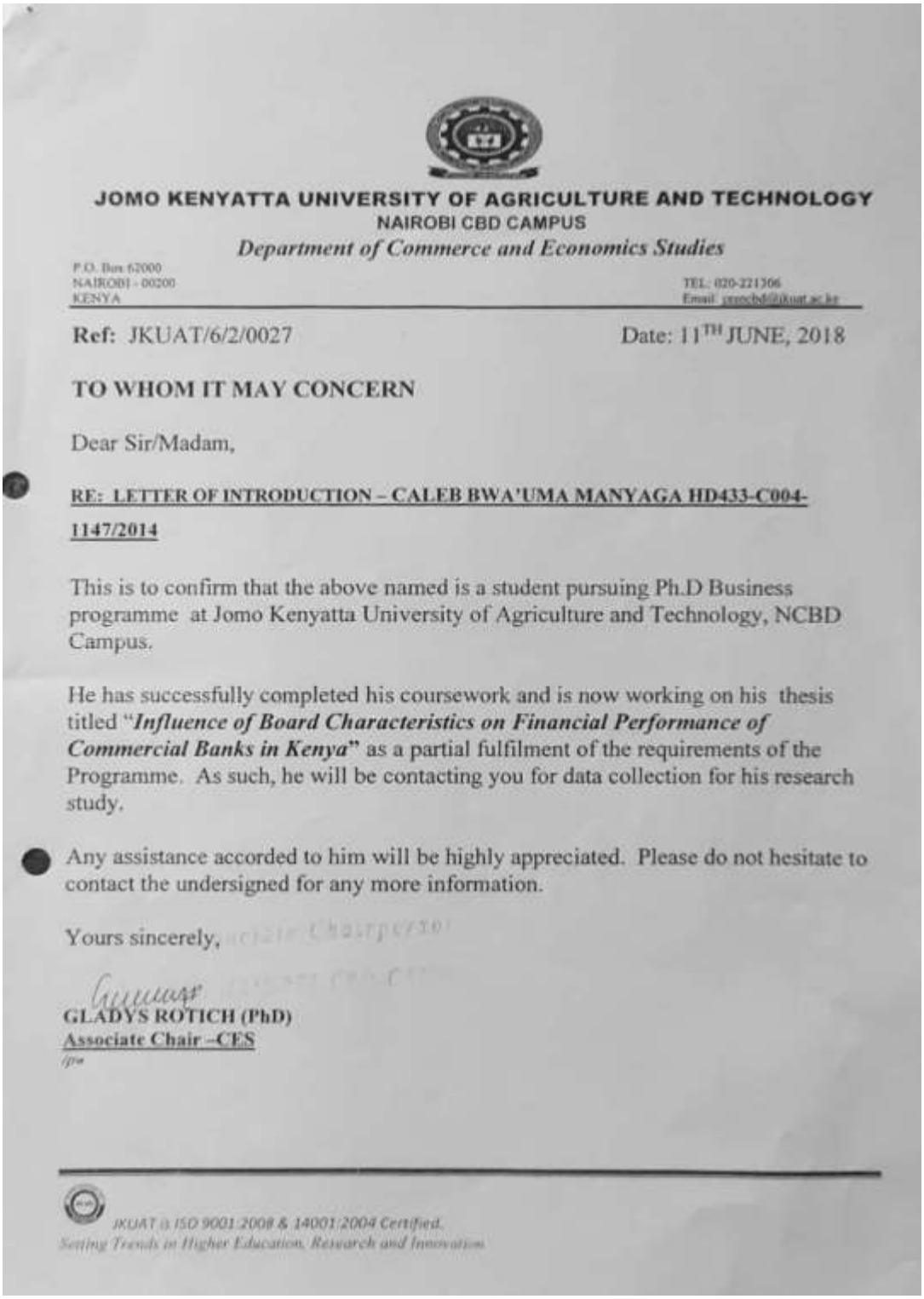
APPENDICES

Appendix I: Letter of Introduction from JKUAT



JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
NAIROBI CBD CAMPUS
Department of Commerce and Economics Studies

P.O. Box 62000
NAIROBI - 00200
KENYA

TEL: 020-221306
Email: cescbd@jkuat.ac.ke

Ref: JKUAT/6/2/0027 Date: 11TH JUNE, 2018

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: LETTER OF INTRODUCTION – CALEB BWA'UMA MANYAGA HD433-C004-1147/2014

This is to confirm that the above named is a student pursuing Ph.D Business programme at Jomo Kenyatta University of Agriculture and Technology, NCBD Campus.

He has successfully completed his coursework and is now working on his thesis titled "***Influence of Board Characteristics on Financial Performance of Commercial Banks in Kenya***" as a partial fulfilment of the requirements of the Programme. As such, he will be contacting you for data collection for his research study.

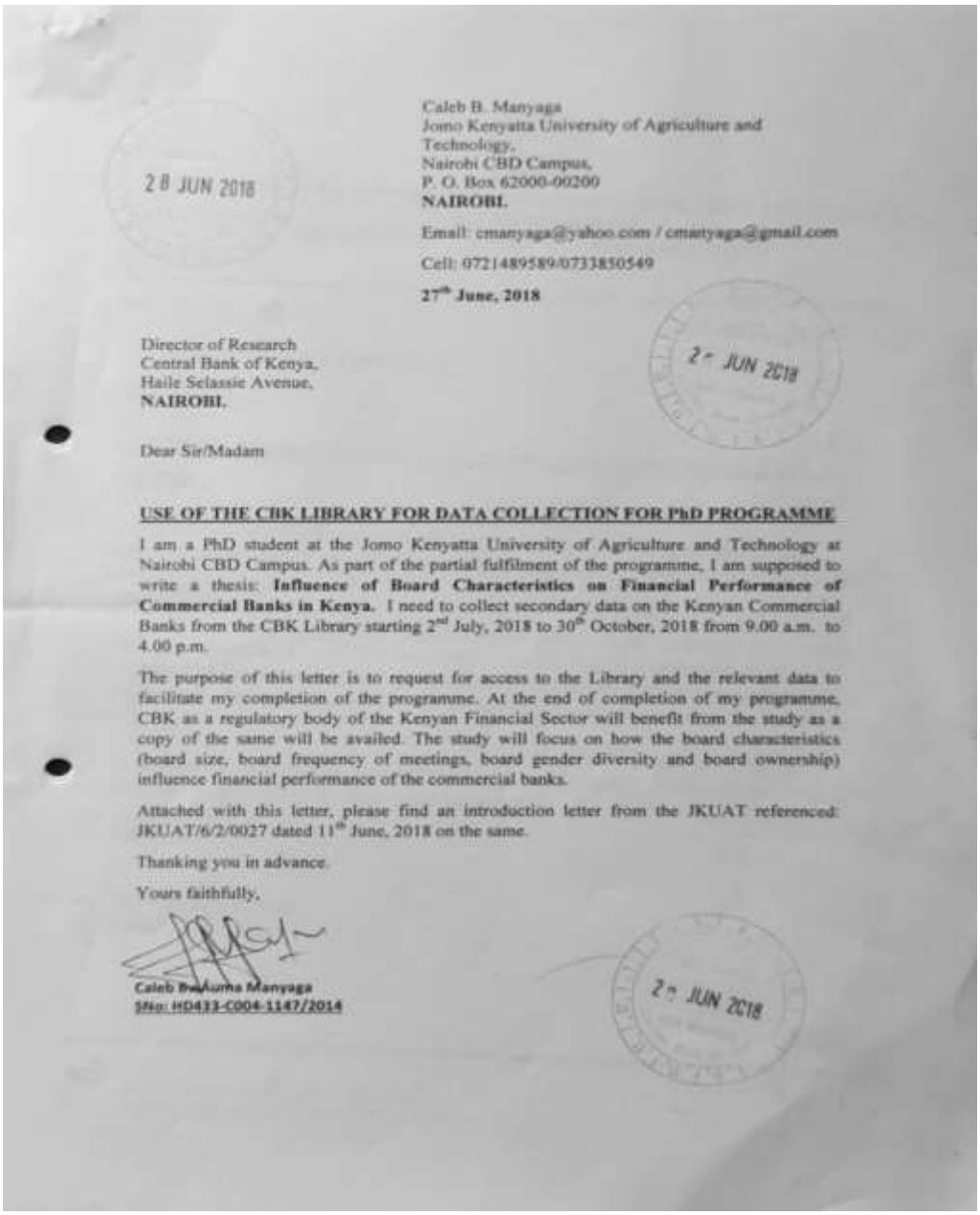
Any assistance accorded to him will be highly appreciated. Please do not hesitate to contact the undersigned for any more information.

Yours sincerely,

GLADYS ROTICH (PhD)
Associate Chair –CES
/pa

JKUAT is ISO 9001:2008 & 14001:2004 Certified.
Setting Trends in Higher Education, Research and Innovation

Appendix II: Letter of Data Request



28 JUN 2018

Caleb B. Manyaga
Jomo Kenyatta University of Agriculture and Technology,
Nairobi CBD Campus,
P. O. Box 62000-00200
NAIROBI.

Email: cmanyaga@yahoo.com / cmanyaga@gmail.com

Cell: 0721489589/0733850549

27th June, 2018

27 JUN 2018

Director of Research
Central Bank of Kenya,
Haile Selassie Avenue,
NAIROBI.

Dear Sir/Madam

USE OF THE CBK LIBRARY FOR DATA COLLECTION FOR PhD PROGRAMME

I am a PhD student at the Jomo Kenyatta University of Agriculture and Technology at Nairobi CBD Campus. As part of the partial fulfilment of the programme, I am supposed to write a thesis: **Influence of Board Characteristics on Financial Performance of Commercial Banks in Kenya.** I need to collect secondary data on the Kenyan Commercial Banks from the CBK Library starting 2nd July, 2018 to 30th October, 2018 from 9.00 a.m. to 4.00 p.m.

The purpose of this letter is to request for access to the Library and the relevant data to facilitate my completion of the programme. At the end of completion of my programme, CBK as a regulatory body of the Kenyan Financial Sector will benefit from the study as a copy of the same will be availed. The study will focus on how the board characteristics (board size, board frequency of meetings, board gender diversity and board ownership) influence financial performance of the commercial banks.

Attached with this letter, please find an introduction letter from the JKUAT referenced: JKUAT/6/2/0027 dated 11th June, 2018 on the same.

Thanking you in advance.

Yours faithfully,

Caleb Bwakuma Manyaga
Sno: HD433-C004-1147/2014

27 JUN 2018

Appendix III: List of Commercial Banks in Kenya

ABC Bank (Kenya)
Bank of Africa Kenya Ltd
Bank of Baroda (k) Ltd
Bank of India
Barclays Bank (Kenya)
Charterhouse Bank Ltd
Chase Bank (K) Ltd
Citibank NA
Commercial Bank of Africa
Consolidated Bank of Kenya
Co-operative Bank of Kenya
Credit Bank Ltd
Development Bank of Kenya Ltd
Diamond Trust Bank Kenya Ltd
Ecobank (K) Ltd
Equity Bank Ltd
Family Bank Ltd
SMB Bank
First Community Bank
Giro Commercial Bank
Guaranty Trust Bank (K) Ltd
Guardian Bank Ltd
Gulf Africa Bank Ltd
DIB Bank
Habib Bank A.G Zurich
I&M Bank Ltd
Imperial Bank Kenya
Jamii Bora Bank Ltd
Kenya Commercial Bank Ltd
Middle East Bank (K) Ltd
M-Oriental Commercial Bank
National Bank of Kenya Ltd
NIC Bank Ltd
Paramount Bank Ltd
Prime Bank Ltd
Sidian Bank Ltd
Spire Bank Ltd
Stanbic Bank (K) Ltd
Standard Chartered Bank (K) Ltd
Trans National Bank Ltd
United Bank for Africa Kenya Ltd
Victoria Commercial Bank
Mayfair Bank Ltd

(Source: CBK 2018)

Appendix IV: Secondary Data Collection Templates

The study obtained secondary data from commercial banks for each of the financial years under study.

Name of the Commercial Bank …….

	Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
independent variables	Board size										
	Board Meetings										
	Female Board										
	Male Board										
	Board Share Ownership										
	Total Shares										
Dependent variables	shareholders Equity										
	Profit after Tax										
moderating variable	Total Assets										

(Source: Central Bank of Kenya, Various Annual Reports)

Appendix V: Annual List of Banks Return on Equity 2009-2018.

id	Year	roe	id	year	roe	id	year	roe
1	2009	0.2852	2	2009	0.2400	3	2009	0.2553
1	2010	0.2763	2	2010	0.2293	3	2010	0.2279
1	2011	0.2504	2	2011	0.2740	3	2011	0.3290
1	2012	0.3112	2	2012	0.2932	3	2012	0.3409
1	2013	0.2955	2	2013	0.2837	3	2013	0.3721
1	2014	0.2842	2	2014	0.2974	3	2014	0.3408
1	2015	0.3099	2	2015	0.2955	3	2015	0.5062
1	2016	0.2898	2	2016	0.2854	3	2016	0.4719
1	2017	0.3517	2	2017	0.3002	3	2017	0.4352
1	2018	0.3087	2	2018	0.2666	3	2018	0.3384
4	2009	0.4105	5	2009	0.2262	6	2009	0.3917
4	2010	0.4834	5	2010	0.2485	6	2010	0.3718
4	2011	0.3778	5	2011	0.3376	6	2011	0.3424
4	2012	0.4011	5	2012	0.3116	6	2012	0.4110
4	2013	0.3764	5	2013	0.3126	6	2013	0.4401
4	2014	0.3696	5	2014	0.2980	6	2014	0.3683
4	2015	0.3535	5	2015	0.2446	6	2015	0.3219
4	2016	0.2193	5	2016	0.2352	6	2016	0.3040
4	2017	0.2907	5	2017	0.2436	6	2017	0.2480
4	2018	0.2133	5	2018	0.1913	6	2018	0.2297
7	2009	0.3419	8	2009	0.1845	9	2009	0.2666
7	2010	0.2799	8	2010	0.1637	9	2010	0.2248
7	2011	0.3490	8	2011	0.2097	9	2011	0.3122
7	2012	0.2953	8	2012	0.3082	9	2012	0.3394
7	2013	0.3391	8	2013	0.2603	9	2013	0.2878
7	2014	0.3246	8	2014	0.3133	9	2014	0.2961
7	2015	0.2532	8	2015	0.2774	9	2015	0.2615
7	2016	0.2745	8	2016	0.2505	9	2016	0.2366
7	2017	0.2762	8	2017	0.2376	9	2017	0.1957
7	2018	0.2277	8	2018	0.1694	9	2018	0.1961
10	2009	0.4162	11	2009	0.2895	12	2009	0.1496
10	2010	0.3478	11	2010	0.2730	12	2010	0.1840
10	2011	0.3853	11	2011	0.2717	12	2011	0.1975
10	2012	0.3395	11	2012	0.2337	12	2012	0.2849
10	2013	0.2893	11	2013	0.1098	12	2013	0.2623
10	2014	0.3308	11	2014	0.1502	12	2014	0.3205
10	2015	0.2730	11	2015	0.1925	12	2015	0.3343
10	2016	0.2204	11	2016	-0.1543	12	2016	0.2971
10	2017	0.2725	11	2017	0.0147	12	2017	0.2155
10	2018	0.2823	11	2018	0.1050	12	2018	0.1379
13	2009	0.3699	14	2009	0.3121	15	2009	0.0556
13	2010	0.1851	14	2010	0.2362	15	2010	0.0862
13	2011	0.1599	14	2011	-0.2526	15	2011	0.1478
13	2012	0.1570	14	2012	0.3259	15	2012	0.0359
13	2013	0.1430	14	2013	0.2783	15	2013	0.1766
13	2014	0.2946	14	2014	0.2905	15	2014	0.2131
13	2015	0.2465	14	2015	0.3552	15	2015	0.2047

id	Year	roe	id	year	roe	id	year	roe
13	2016	0.2417	14	2016	0.3195	15	2016	0.1911
13	2017	0.0502	14	2017	0.2763	15	2017	0.1478
13	2018	-0.1181	14	2018	0.2146	15	2018	0.0394
16	2009	0.0384	17	2009	0.0560	18	2009	0.0780
16	2010	-0.5358	17	2010	0.1075	18	2010	0.0858
16	2011	0.0376	17	2011	0.1643	18	2011	0.1117
16	2012	0.0701	17	2012	0.1072	18	2012	0.2018
16	2013	-0.7674	17	2013	0.1118	18	2013	0.1390
16	2014	-0.3236	17	2014	0.1428	18	2014	0.0678
16	2015	-0.0639	17	2015	0.0257	18	2015	0.0959
16	2016	0.0123	17	2016	-0.1688	18	2016	0.0692
16	2017	-0.3954	17	2017	-0.0020	18	2017	0.0788
16	2018	-0.2227	17	2018	0.0041	18	2018	0.0280
19	2009	-0.3001	20	2009	0.2228	21	2009	0.2022
19	2010	-0.1409	20	2010	0.2310	21	2010	0.0776
19	2011	-0.0458	20	2011	0.2838	21	2011	0.2798
19	2012	0.1175	20	2012	0.2636	21	2012	0.3020
19	2013	0.2394	20	2013	0.2372	21	2013	0.2637
19	2014	0.1482	20	2014	0.2290	21	2014	0.2359
19	2015	0.1954	20	2015	0.2208	21	2015	0.1212
19	2016	0.2822	20	2016	0.1928	21	2016	0.1251
19	2017	0.1724	20	2017	0.1573	21	2017	0.0783
19	2018	0.0575	20	2018	0.1513	21	2018	0.0642
22	2009	-0.4376	23	2009	0.3127	24	2009	-0.3961
22	2010	-0.2611	23	2010	0.2985	24	2010	-0.2293
22	2011	0.0959	23	2011	0.2218	24	2011	-0.2832
22	2012	0.1923	23	2012	0.1977	24	2012	0.1338
22	2013	0.2004	23	2013	0.2693	24	2013	0.2727
22	2014	0.2978	23	2014	0.2572	24	2014	0.1736
22	2015	0.2995	23	2015	0.2862	24	2015	0.0435
22	2016	0.1355	23	2016	0.1982	24	2016	0.0068
22	2017	0.0160	23	2017	0.2094	24	2017	-0.0270
22	2018	-0.1836	23	2018	0.1439	24	2018	0.1264
25	2009	0.1201	26	2009	-0.0093	27	2009	0.0720
25	2010	0.1264	26	2010	-0.0222	27	2010	0.0336
25	2011	0.0359	26	2011	-0.0863	27	2011	0.1608
25	2012	-0.0428	26	2012	-0.0498	27	2012	0.1481
25	2013	-0.0187	26	2013	0.0248	27	2013	0.0801
25	2014	0.0590	26	2014	0.0400	27	2014	0.0380
25	2015	-0.0790	26	2015	0.0309	27	2015	0.0526
25	2016	-0.1286	26	2016	0.0114	27	2016	0.0183
25	2017	0.0642	26	2017	-0.1368	27	2017	0.0123
25	2018	0.0672	26	2018	-0.2206	27	2018	0.0383
28	2009	0.0980	29	2009	0.1005	30	2009	0.1037
28	2010	0.0808	29	2010	0.1316	30	2010	0.0797
28	2011	0.1032	29	2011	0.1747	30	2011	0.4140
28	2012	0.1681	29	2012	0.1721	30	2012	0.1101
28	2013	0.1756	29	2013	0.1118	30	2013	0.0792
28	2014	0.1209	29	2014	-0.7874	30	2014	0.0805

id	Year	roe	id	year	roe	id	year	roe
28	2015	0.1003	29	2015	-0.1550	30	2015	0.0994
28	2016	0.1235	29	2016	0.0297	30	2016	0.1100
28	2017	0.0771	29	2017	-0.1974	30	2017	-0.0774
28	2018	0.0253	29	2018	-0.4110	30	2018	0.0545
31	2009	-0.0148	32	2009	-0.3913	33	2009	0.0342
31	2010	0.1019	32	2010	-0.2139	33	2010	0.0487
31	2011	-0.0375	32	2011	-0.1552	33	2011	0.2006
31	2012	0.0573	32	2012	-0.2830	33	2012	0.0836
31	2013	-0.9238	32	2013	-0.3257	33	2013	0.0409
31	2014	0.0956	32	2014	-0.2625	33	2014	0.0689
31	2015	-0.3991	32	2015	-0.2906	33	2015	0.0616
31	2016	-0.3166	32	2016	-0.2717	33	2016	0.0332
31	2017	-0.5327	32	2017	0.0233	33	2017	-0.0839
31	2018	-1.3266	32	2018	0.0065	33	2018	-0.0353
34	2009	0.0527						
34	2010	0.1306						
34	2011	0.1181						
34	2012	0.1596						
34	2013	0.1829						
34	2014	0.2564						
34	2015	0.2154						
34	2016	0.1658						
34	2017	0.1363						
34	2018	0.0960						