Influence of board diversity on the financial performance of commercial banks in Kenya

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INFLUENCE OF BOARD DIVERSITY ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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Submitted In Partial Fulfillment of The Requirement For The Degree Of Master Of Business Administration At Strathmore University

Strathmore Business School
Strathmore University
Nairobi, Kenya

JUNE 2018

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except where due reference is made in the thesis itself.

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April 25th, 2018

Approval

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ACKNOWLEDGEMENT

First and foremost, my gratitude and praise go to God Almighty, without Whom none of this would be possible.

To my loving Dad and Mum, Prof. and Mrs. Wambari, who have always been there for me, and whose example I can only hope to live up to; thank you for your prayers, support and guidance over the years.

To Peter, my wonderful husband and friend, for your love and belief in my abilities, and for supporting and celebrating the successes with me - thank you!

To my siblings, thank you for the love, the encouragement, the unwavering support - you are all amazing!

I am indebted to my supervisor, Dr. David Mathuva, whose expertise, insights, guidance, and attention to detail have helped me get to the finish line. Without your encouragement and timely reviews and responses to my questions, I would not have completed this dissertation in time. Thank you very much.

To all my friends and colleagues who, very patiently supported me through this journey... thank you. I finally made it!

God bless you all.

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LIST OF ABBREVIATIONS AND ACRONYMS

CBK	Central Bank of Kenya
CEO	Chief Executive Officer
EU	European Union
NSE	Nairobi Securities Exchange
ROA	Return on Assets
ROE	Return on Equity
UK	United Kingdom
US	United States of America

ABSTRACT

This study's purpose was to explore the effect of board diversity in leadership on corporate financial performance. Specifically, the study aimed at determining the effect of board diversity on financial performance of commercial banks in Kenya to ascertain whether there is a causal association between the specific board characteristics of gender, age and nationality on the financial performance of commercial banks in Kenya. Thus, the research adopted an exploratory design. All commercial banks formed the primary target in the study. There were forty-two banks in Kenya based on the 2017 Bank Supervision Report by the CBK (Central Bank of Kenya). Pertinent data in the study was sourced from secondary sources. Panel data regression analysis was applied to ascertain the association between board diversity and financial performance of the commercial banks. The study results indicated that board age diversity did not have a significant effect on financial performance measured through ROA and Tobin's Q. Similarly, gender diversity had insignificant effect on financial performance of the commercial banks in Kenya measured through both ROA and Tobin's Q. Further, nationality diversity was not significantly related with financial performance of the commercial banks as measured through both ROA and Tobin's Q. Study results also indicated that board diversity (BD) did not have a significant effect on ROA as well as Tobin's Q of the commercial banks. The recommendations made from these findings is that when selecting boards members, shareholders should consider having a board that is composed of members from different ethnic, cultural, gender and nationalities which is expected to provide a diverse view of managerial and strategic issues. However, diversity should not only be considered for its own sake but should be considered on how well it will enhance the board leadership and control role in the firm. The study also recommends to the shareholders of companies to ensure that demographic diversity is informed by the interests of the companies, and not just for the sake of having a demographically diverse board.

CHAPTER ONE
INTRODUCTION

1.1 Introduction

Does the diversity of the board have an impact on an organization's performance? This question forms a key focus of research in corporate management and governance. The board operates as a bridge between managers and owners; it has the mandate to cushion shareholders' interests. In particular, while taking responsibility for supervising and managing, the board directs managers' behaviours with a focus on shareholders' interests, employs management teams, make important decisions, and oversee the firm's operations to ensure that it abides by the rule of law. Generally, boards are differently structured and have varied impacts on corporate decisions. Often diversity has been associated with variations amongst board members. Therefore, the study aimed at examining the association between firm performance and board diversity of commercial banks in Kenya.

1.2 Background of the study

Board diversity is defined by Langevoort (2016) as having a range of many people that are different from each other in terms of demographic characteristics, professional qualifications, skills and experiences to make the board less homogenous. Various policies, practices and organizations advocated for board diversity as it is projected to have a variety of benefits including better utilization of the talent pool, more effective decision making and enhancement of investor relations and corporate reputation by portraying the organization as a responsible corporate citizen (Raheja, 2015). The United States Conference Board's report (Martino, 1999) crafted with anecdotal evidence from some major corporations like Ford Motor, IBM, Lucent, Nortel, Texaco, Sara Lee, and DuPont cited the concept of board diversity as a vital success factor for business. The report identifies a change in turnout rates, labor market demographics, and productivity gains of diverse teams as a principle promoter for diversity. More so, the report indicates that companies that are truly diversified have incorporated women and minorities in every workforce level including among the board members/directors. In areas of professional codes or regulations, more countries are increasingly paying attention to

boards' diversity. For instance, among public listed corporations, Canada expect boards' constitutions to be engaged in a principled process to establish, based on the risks and opportunities (that is, the environment) affecting the organization, what skills, competencies and personal traits should be put into perspective while selecting new members of the board. This is in order to bring more value to the board and the corporation. More so, corporations are encouraged to actively look beyond traditional sources while seeking women and men who have the right mix of competencies and experience.

In Australia, boards are expected to encompass directors who have appropriate competencies to promote their effectiveness in discharging their mandate. On the other hand, in Singapore, the tradition is that boards should include directors who provide key competencies such as finance or accounting, management or business experience, strategic planning experience, industry knowledge, and customer-based knowledge or experience. In a determined hypothesis that the Sarbanes-Oxley reform did not recognize or establish the importance of the board's diversity in enhancing its functioning, Ramirez (2003) postulates on how other countries like Israel have progressed ahead of the United States of America - in Israel since 1993 it has been a requirement for boards of directors in companies to be selected while considering gender diversity. Similarly, the Norwegian government provided that at least 40% of board member's positions among corporations in the country should be occupied by women by the year 2005. More states are studying how organizations would gain from enhanced diversity in their boards.

While diversity is denoted literally as having differences, Kahn (2002), underlines that it has been altered into a focused strategic course for valuing differences. Differences can be related to gender, age, nationality, physical appearance, job experience or function, culture, personal style, disability, ethnicity, and religion. Strong propositions still linger regarding business and conceptual propositions on diversity. A diverse leadership and workforce within a firm may promote its competitiveness in terms of generating several viewpoints and ideas viable for decision-making, appealing to a larger employees' and

stakeholders' base, and more so, supporting and retaining existing and potentially acquire new consumers from the minorities (Cox, 1993).

The concept of diversity in the board dictates that boards should reflect on societal structures and properly represent ethnicity, gender and professional background in their choice of members of the board. This is necessary to generate diversified viewpoints. Diversity in a board should be morally supported by the stakeholders and shareholders so as to provide the firm with financial gains by obtaining all-inclusive decisions (Daily & Dalton, 2003). Diversity in terms of gender is noted as part of a broader board's conception in diversity and most scholars have indicated that only a few women globally sit at the board. Julizaerma and Sori (2012) in a study in Malaysia noted that compared to men, women directors often possessed competencies in managerial skills especially public relations, legal, communications and human resources as opposed to marketing and operating skills. This hence implied the need to incorporate a mix of both male and female directors in the board so as to have a board with a mix of many professional and technical backgrounds.

This study sought to assess the effect of board diversity on corporate financial performance of commercial banks. The study focused on gender, nationality and age diversity. Ferrero-Ferrero, Fernández-Izquierdo and Muñoz-Torres (2015) established that age diversity measures the extent tow which members from different age groups (mostly young) are incorporated in the board. Gender diversity on other hand, focusses on how well the board has incorporated both male and female members. Additionally, nationality diversity indicates the extent to which the board has members from different countries. Theories that predict a positive effect of board diversity on corporate financial performance include the resource dependence, human capital and group diversity theories. Resource dependence theory by Pfeffer and Salancik (1978) presented the resource dependence theory that posits that age diversity has the potential to enhance board performance, because directors of different ages will, to some extent, have different backgrounds, skills, experiences and social networks. Becker (1964) through the human capital theory argues that if directors are from different genders, it is more likely

that their networks will be different from each other, which will make the firm's total social capital to be high. Cox (1993) developed the group diversity theory which posits that a nationality diverse board is in a better position to effectively meet the diverse needs of the global stakeholders. This implies that a nationality diverse board will lead to enhanced financial performance.

Corporate financial performance can be construed in several ways. Mostly, it has been indicated as the utility benefits that accrue to the company's stakeholders (Rashid, Islam & Anderson 2008). The continuing viability of an organization is contingent on its capacity to net suitable returns from its capital and assets. Decent earnings performance boosts an institution's capacity to support its expansion, increase and replenish its earnings from capital valuation, and maintain its competitiveness in the marketplace. Corporate financial performance heavily relies on the comparison of main profitability measures like return on asset and return on equity to peer groups, past company's performance and industry benchmark.

Financial performance is a measure of how well a firm is using its assets from its primary mode of business to generate revenues and value for the different stakeholders. This term is also used as a general measure of a firm's overall financial health over a given period of time. A number of different measures of firm performance are employed to assess the financial performance of the firm. These measures include accounting-based ratios from balance sheet and income statements such as Return on Assets (ROA), Return on Equity (ROE), return on capital employed (ROCE) and other such measures such as Tobin's Q, which mixes market values with accounting values and finally measures of profit efficiency such as managerial efficiency computed using a profit function (Sadeghian et al., 2012).

ROA shows the percentage of net earnings relative to the company's total assets. The ROA ratio specifically reveals how much after-tax profit a company generates for every shilling worth of assets the company has. ROE expresses the percentage of net income relative to stockholders' equity, or the rate of return on the money that equity investors

have put into the business. The ROE ratio is one that is particularly watched by stock analysts and investors. A favorably high ROE ratio is often cited as a reason to purchase a company's stock. ROCE is a measure of return generated by all providers of capital, including both bondholders and shareholders. It is similar to the ROE ratio, but more all-encompassing in its scope since it includes returns generated from capital supplied by bondholders. Tobin's Q is a ratio of market value of the assets owned by the firm on the book value of assets. This study used ROA and Tobin's Q as the measures of financial performance since these two indicators are all encompassing as they indicate the value provided by utilizing all assets of the firm. Moreover, these measures have been applied in various studies including Weill (2018), Trujillo-Ponce (2017), Vitor and Badu (2016) and Tauseef, Lohan and Khan (2015).

The board of directors is often regarded as an organizations' highest decision-making body. As an important dimension for diversity, the board's structure provides considerable influence on the organization's important dimensions and has the capability to substantially influence the board actions, the firm's corporate governance and ultimately the financial performance of the firm (Carter, et al., 2010; Kim, Burns, & Prescott, 2009). Researchers conceptualize corporate board dimensionally detailing the board as an encompassment of members from diverse groups and also, as an individual entity that validates whether the directors' diversity (director heterogeneity) influences a board's functioning (Ferreira, 2010). Therefore, this research validates previous positions and scrutinizes how diversity in the board is linked to the company's performance. The current study focused on age, gender and nationality only as they are the aspects of diversity which have been consistently established to influence firm performance in various studies across the globe (Julizaerma & Sori, 2012). Moreover, most regulations and advocacy regarding board diversity focus on these aspects.

A study by Kenya Institute of Management (2017) established that 62% of the listed companies had at least one non-Kenyan in their board which compares well with the 74% global average. On board diversity influence on corporate performance, gender diversity when female representation is at least 25% was found to have a positive influence on the

organizations' compounded annual growth rate of assets and revenues. Moreover, Barclays Bank board had a 50% gender representation which made it the most gender diverse of any listed firm in Kenya. Further, the study established that the average entry age into the boardroom was 50 years globally. A significant difference in entry age between the genders was noted with female board members entering at 48 years while their male counterparts had to wait, on average, until 52 years. The study also revealed that there is a lack of millennials in the boardroom. Millennials make up the world's biggest demographic group and are expected to make up 50% of the workforce by 2020. However, most boardrooms lack this age group. The current study hence sought to investigate the effect of board diversity on the financial performance of commercial banks.

1.3 Problem Statement

The attention of scholars, academics, managers, policy makers, shareholders and directors has been drawn towards board diversity as a critical concept in corporate governance (Johansen, 2008). In today's growing global market, the concept of diversity seems to encompass differences in terms of ethnicity, gender, physical abilities, age, as well as perspective, attitudes, and background differences. On corporate boards, several forms of diversity could be identified among directors including gender, age, ethnicity, religion, culture, professional background, constituency representation, knowledge, technical expertise and skills, industry and commercial experience, life and career experience. Theories that support board diversity's positive effect on the firm include resource dependency theory, group diversity theory and human capital theory (Carter et al., 2010).

Diversity within the board increases the chances of having rival factions and conflict, generated based on the diverse interpretations of the organization's goals and policies. However, a proliferation of accounting scandals has enhanced the value of accountability in organizations and hence encouraging organizations to put up structures of good governance to improve accountability. There have been various studies that have been conducted in developed nations relating gender diversity with corporate social reporting

in commercial banks. Moreover, studies abound relating diversity in boards and corporate financial performance in the developed nations. However, it is just recently that the attention has shifted into investigating the role played by board governance and diversity on corporate financial performance in emerging nations.

This study aimed to establish the value derived from board diversity with respect to the financial performance of commercial banks in Kenya. There was a lacuna in literature regarding the relationship between the board's diversity and financial performance of commercial banks in Kenya. Nevertheless, Barako and Brown (2008) identified that boards' diversity in the Kenyan banking industry enhanced corporate social reporting. The subject of board diversity and firm performance had been researched in Kenya by authors such as Ekadah and Mboya (2012). However, the study by Ekadah and Mboya (2012) was conducted with data from 1998 to 2009 and focused on women representation in corporate boards which was very low. Moreover, this study only focused on gender diversity and failed to consider nationality and age and other aspects of diversity.

The Institute of Directors in Kenya (2016) conducted a survey indicating that much improvement had been made after the promulgation of the constitution of Kenya (2010) and Capital Markets Authority (CMA) guidelines on increasing women representation on boards. The study established that boards of professional associations consisted of 26% women up from less than 6% in 2010. Moreover, women representation in boards of insurance companies had increased to 15% from 5%. The survey also established that though banks had the lowest women representation in boards at 12%, it was an improvement from 4% in 2010. Moreover, the survey established that one commercial bank (Standard Chartered Bank) also had a woman as chair of the board. This indicates that a lot of improvement and changes regarding women representation in boards have taken place today compared to when the time of the study by Ekadah and Mboya (2012). Despite the lack of consensus on the effect of board diversity on financial performance, many regulatory authorities are instituting policies that seek to increase diversity in corporate boards. This study sought to establish whether the increased diversity in

corporate boards of commercial banks have brought any significant effects on financial performance.

This study used current data on board diversity and bank performance and thus provided a concrete indication on whether the improvements in board diversity had led to any changes in financial performance by the commercial banks. It is expected that the knowledge gained from the study may lead to proper conceptualization of those factors which are responsive to policy.

1.4 Study Objectives

1.4.1 General objective

The research aimed to determine the connection between combined measure of board diversity and corporate financial performance of commercial banks in Kenya.

1.4.2 Specific objectives

In particular, the research aimed:

i. To establish the effect of boards' gender diversity on financial performance of commercial banks in Kenya.
ii. To evaluate the effect of boards' nationality diversity on financial performance of commercial banks in Kenya.
iii. To examine what influence board age diversity has on commercial banks in Kenya in terms of financial performance.
iv. To evaluate the effect of combined board diversity (comprising of age, nationality and gender) on financial performance of commercial banks in Kenya.

1.5 Research questions

i. What effect does a boards' gender diversity have on financial performance of commercial banks in Kenya?
ii. What is the effect of the boards' nationality diversity on financial performance of commercial banks in Kenya?

iii. To what level does the boards' age diversity affect financial performance of commercial banks in Kenya?

iv. What is the effect of combined board diversity comprising of age, nationality and gender on financial performance of commercial banks in Kenya?

1.6 Scope of the study

The study focused on all Kenyan commercial banks. These banks were forty-two (42) in number based on the Kenyan Central Bank's Supervision Report of 2015. However, only 38 commercial banks were included in the study as they had full results for five years (2012 – 2016). All these banks were studied since a comprehensive and entire representative analysis was required from the entire banking sector in Kenya. This study focused on commercial banks as the sector had experienced increasing competition in recent years as banks competed to recruit new customers and target new markets (Mokaya & Kipyegon, 2016). This was indicated by the increasing number of banks and the competition from mobile money services. Since the banking sector is the cornerstone of the financial sector and the base upon which the economy and all other industries revolve, the factors that influence their performance need to be investigated to sustain their good financial health. The contributions of commercial banks in economic development have been accelerated with the roll out of innovative banking products such as internet banking, mobile banking and agency banking. The study covered a period of five years 5 years (2012-2016) and the unit of analysis was the commercial bank.

1.6 Significance of the study

The study will be of value as it will provide evidence on the role played by board gender, age and nationality diversity on the financial performance of commercial banks in Kenya. More importantly, the study will establish the role played by the combined board diversity score on financial performance of the commercial banks. This will be of significance to the researcher, shareholders, management and policymakers.

1.6.1 Researcher

The study will provide the researcher with relevant knowledge and experience in research and inform the researcher on whether board diversity has an effect on corporate financial performance of commercial banks in Kenya. As an employee in the banking sector, the researcher will use the findings from the study to advocate for enhanced board governance and diversity considering the empirical findings. Lastly, the research was part of the academic requirements to attain a master's degree. The research will hence enable the researcher to fulfill the academic requirements to attain the master's degree.

1.6.2 Shareholders

The shareholders will be sensitized on the importance of ensuring that the board selected represents all or majority of those characteristics or groups deemed critical in maximizing the value and wealth of the firm. Moreover, the findings may result in changes to the board of directors making them more effective and efficient in their activities that leads to the achievement of objectives such as to deliver value to customers and returns to the shareholders' investment. The boards will become more aware of how their activities affect the return to shareholders' value.

1.6.3 Management and Policy Makers

This study was conducted to establish the effect that board diversity has on corporations' profitability. It was influenced by background evidence from authors such as Gulamhussen and Santa (2010) that suggests gender diversity considerations in boardrooms could enhance value to a company by enabling the board to manage risk, audit and relationships management. Therefore, this research aimed to address such issues by observing boards' diversity among commercial banks in Kenya. Similarly, the research aims to answer questions regarding relationship between corporations' financial performance and the diversity of their boards and whether more benefits exist from the board's diversity in business environment. The findings shall provide insight to policy makers and corporations' management on the value of the board's diversity on corporate performances.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter discusses the empirical and theoretical literature associated with the relationship between the board's structure (in contrast to the board procedures) and the company's performance. The chapter first presents the theories that inform board diversity and how it influences corporate performance. The chapter analyses available literature on the subject in accordance to the study objectives. The literature review provides a foundation for the study on board diversity.

2.2 Theoretical Review

The current study was based on the resource dependence, human capital and group diversity theories. These theories provided the theoretical basis for conceptualizing the influence of board diversity on corporate financial performance. The three theories are discussed hereunder in detail.

2.2.1 Resource Dependence Theory

Pfeffer and Salancik (1978) presented the resource dependence theory, in which a firm is viewed as an open system which depends on contingencies in their external environment (Hillman et al., 2009). To fully understand a firm, one must thus understand the context of the firm. According to this theory, the board of directors is seen as a tool to manage external dependency, reduce environmental uncertainty and reduce transaction costs associated with environmental interdependency by linking the organization with its external environment (Lynall et al., 2003). This theory provides the study with a more appropriate theoretical framework to study diversity on the board of directors and firm performance (Carter et al., 2010). However, the theory does not provide the mechanics and processes that make a more age diverse board to perform better than ales diverse board.

According to the resource dependence theory a board provides four primary benefits for the firm: 1) provision of resources such as information and expertise; 2) creation of

channels of communication with constituents of importance of the firm; 3) provision of commitments of support from important organizations or groups in the external environment; and 4) creation of legitimacy for the firm in the external environment. Boards are important sources for counsel and advise and they enhance the reputation and legitimacy of the firm (Lynall et al., 2003). Interlocks between directors have also been found to be important for the dissemination of information across firms, as well as securing preferential access to critical resources.

An important notion of this theory is that directors bring different resources and linkages to the board, and board composition should therefore be adjusted to the specific needs of the firm. The board composition should be adjusted over time when the needs of the firm changes (Hillman et al., 2009). Small firms and firms in early stages of the lifecycle may also better benefit from the resources the board provides in comparison with larger and more mature firms. Age diversity has the potential to enhance board performance, because directors of different ages will, to some extent, have different backgrounds, skills, experiences and social networks. Carter et al. (2010) state this clearly when they argue that age diversity holds the potential to improve the information provided by the board to managers due to the unique information held by diverse directors.

2.2.2 Human Capital Theory

Human capital theory was developed by Becker in (1964) and includes a person's education, experience and skills that can be used to add value to an organization. Human capital can be either firm specific or general (Singh, 2007). According to human capital theory, gender diversity will affect board performance as a result of a diverse and unique human capital (Carter et al., 2010). The effect on financial performance can, however, be positive as well as negative and the usefulness of an individual's human capital may be dependent on a firm's internal and external circumstances. This theory does not however prescribe the circumstances that diversity in gender can pose negative effects in the firm.

Social capital is created when individuals or organizations interact (Singh, 2007). An example being the knowledge and information communicated in networks of

relationships that facilitates instrumental action. Economic actions are both informed, influenced and enabled by the network of social relations (Lynall et al., 2003). In a relationship network the social actors are interconnected to other social actors in a crisscrossing pattern with varying strengths (Singh, 2007). A network that is extensive and with many areas unconnected will provide better access to more and diverse information. Demographic similarities among directors will reflect the interorganizational network (Lynall et al., 2003). If directors therefore are from different genders, it is more likely that their networks will be different from each other, which will make the firm's total social capital to be high (Singh, 2007). The board's social capital therefore becomes important to the functioning of the board (Murphy and McIntyre, 2007).

2.2.3 Group Diversity Theory

Cox (1993) developed the group diversity theory to inform the concept of cultural diversity in organizations. Cox defined diversity as the inclusion in a group of members with distinctly different cultural significance and group affiliations. Cox, Lobel and McLeod (1991) had earlier observed from field and laboratory settings that diversity within groups had improved the effectiveness of the group. This created the notion of value-in-diversity concept. Cox (1993) then later developed this concept to the group diversity theory. This theory postulates that when a group is made up of individuals from diverse backgrounds, that group becomes more effective than a group made up of individuals from similar backgrounds. The strength of this theory is that it provides the diversity aspects in board nationality that can make a firm to enhance its performance. However, it fails to prescribe how much diversity is good and what diversity may fail to have positive effects.

This study applied this theory to inform how nationality diversity is expected to relate to performance. Board performance is then linked to firm performance. The diversity issues focused on in this study include age, nationality and gender. Nevertheless, Pelled et al. (1999) observed that not all cases of diversity breed effectiveness. Following this debate, Mazur (2010) noted that diversity in the work place is becoming more important with the advent of globalization. This is because organizations are now finding themselves

required to cope with the needs of stakeholders that are more culturally mixed. The global market place is hence underlining the need for workforces of companies, including their board of directors, to be more diverse, since a diverse board is in a better position to effectively meet the diverse needs of the global stakeholders. This implies that a nationality diverse board will lead to enhanced financial performance.

2.3 Empirical Review

2.3.1 Board gender diversity and financial performance

There are conflict views regarding the effect of board gender diversity on financial performance. According to Julizaerma and Sori (2012), board gender diversity is the inclusion of women on a corporations' board of directors. While this area is attracting growing interest for corporate governance research over the recent years, many empirical studies on the topic are restricted to developed nations. Empirical evidence seemingly points to women's presence in the corporate boards as responsible for various positive organizational financial outcomes. The connection between the firm's performance and gender diversity in the corporate boards has evidently been inconclusive, and still requires further empirical enquiry. Some studies (for example Dezso & Ross, 2012; Smith et al., 2006) underlined a significant and positive relationship between firm's performance and gender diversity

Other arguments endorse the proposition of greater gender diversity to be advantageous to the firm for several reasons. Often, women are deliberated to have a "feeling" or cognitive style which focuses on harmony to facilitate information dissemination. Moreover, they are considered "tough" because they must encounter several challenges before holding such seats at the board, that reward them with great prestige at the environment. Diversity in gender also results in increased innovation and creativity (Campbell and Minguez-Vera, 2008).

Mazur (2010) argues that boards that incorporate women directors have less problems of director attendance and as such, they play their monitoring role on the CEOs effectively and hence reducing cases of CEO turnover. Due to this effective monitoring, such firms

usually perform better than their peers who have less or no women in their boards. Further, Mazur (2010) argues that women directors not only have fewer problems of meeting attendance but also, they influence the overall behavior of attendance among directors (plus men) when more women are incorporated in the board. Relevant to this high level of the board's functioning, costs exist to intensify monitoring (Faleye & Hoitash, 2011). Conversely, a research by Aosa (2012) underlining the impact of the board's gender diversity on corporation's financial performance established insignificant relationship.

Carter et al. (2003) elucidated on the relationship between corporate performance and board gender diversity as per the theory of agency and they observed that the board's gender diversity improves its ability to supervise the top management. Additionally, they indicate that by increasing the number of women directors, increases independence of the board since they tend to raise questions which may not be raised by male directors. Moreover, Smith et al. (2006), holds that board's gender diversity improves problem solving since several perspectives arise thus more options are assessed in the process. Moreover, a more gender diversified board could also enhance a company competitive advantage as long as it enhances the firm's image and if this has a positive effect on the customers' actions, hence it, in turn, results in a positive effect on a company's financial performance.

In the US, Dezso and Ross (2012) conducted a research using panel data from 15 years panel on the team of top management among S&P 1,500 companies. The research explored longitudinal data to provide inclusion of corporations' fixed effects on all regressions. The researcher established that female representation in the top management enhances corporations' performance. Julizaerma and Sori, (2012) in Malaysia conducted a study and observed that there is a positive association between a firm's performance and gender diversity (Return on Assets). Similarly, Fan (2012) in Singapore, using up to 390 observations from distinct sectors in the Singaporean Exchange from 2002 – 2004 in gender performance and diversity, noted that the evidence supported a positive linkage between the board's financial performance and diversity. The research used multiple

regressions for simultaneous equations in analyzing control for possible endogeneity problem (Tobin's Q).

Smith et al. (2006) conducted a research in Denmark to assess if more women at the top management impact a firm's performance. Exploring data from about 2,500 of the largest Danish companies from 1993-2001 and applying ordinary least squares regression, the research found that a percentage of women at the top jobs' management tend to demonstrate positive effects on corporate performance, more so, after controlling numerous traits of the company and causality direction. In Spain, Campbell and Minguez-Vera (2007) established that the proportion of women in the board of directors has a significant positive influence on corporations' financial performance (Tobin's Q value).

Similarly, a study by Bart and McQueen (2013) in the US, reported that women directors attained significantly higher scores compared to their male colleagues, on dimensions of complex moral reasoning that essentially entails making decisions that are consistently fair when interests that are competing are at stake. Bart and McQueen, in their study noted that directors are often compelled to make decisions that are based on the interest of their firm while putting into account viewpoints from multiple stakeholders. Therefore, having a significant proportion of women directors in the board with a more developed moral reasoning capacity, could appear as a vital resource in such types of decision-making and hence boosting the sustainability of the firm.

In contrast, other scholars indicate that boards that have high gender diversity could create disadvantages to the company. High gender diversity could increase the likelihood of conflict, slow the process of decision-making and lessen cohesion in relation to risk perception and response to risks that face the corporation (Joshi et al., 2006). Increased gender diversity of the board might also reduce a corporations' performance, by lessening the board's ability to provide leadership and corporate governance. Heterogeneous group members frequently communicate less as they are more likely to hold dissimilar opinions hence resulting in conflicts. Boards with a high gender diversity create more conflicts in

decision-making, hold diverse opinions and hence become less effective and more time consuming. Moreover, Haslam et al. (2010) noted that women in boards lower the value of an organization due to increased absenteeism and higher turnover. Additionally, high gender diversity in the board could also negatively affect a corporation's performance, if the female directors are selected not based on competence but as "token" or just as a way to adhere to policy or regulations (Earley and Mosakowski, 2000). Other studies (such as Bohren & Strom, 2006; Haslam et al., 2010) had similar findings and found a negative relationship between the gender diversity of the board and corporate financial performance.

Dutta and Bose (2006) conducted a research in Bangladesh and found an inconsistent association between gender diversity of the board of directors and financial performance (Return on Equity and Return on Asset) of commercial banks in Bangladesh. The research applied the Kruskal-Wallis H test, a non-parametric research methodology, to evaluate a sample of 15 banks. This methodology could partially explain why the research provided conflicting results from distinct levels of significance hence no valid conclusion. Other empirical studies (for example Ekadah & Mboya, 2012; Carter et al., 2010) had consistent research findings and found no significant relationship between board gender diversity and financial performance of the firm.

Moreover, there is a series of findings whose evidence supports a significant negative association between a firm's performance and gender diversity. For instance, in the United Kingdom, Haslam et al (2010) investigated the correlation between the presence of women on a company's board and both stock-based and accountancy-based measures of corporation's performance. Multiple regression analysis approach was employed in the study and data from years 2001 to 2005 on financial time stock's index targeting 100 companies (the 100 firms are listed at the London's Stock Exchange with highest market capitalization). Researchers observed a significant negative linkage between the presence of women on boards and organization's performance.

On their part, Bohren and Strom (2006) revealed that boards' gender diversity is negatively associated with financial performance from non-financial firms that are listed at the Oslo's Stock Exchange. Similarly, Haslam et al (2010) described a negative relationship in women being on the boards and the stock-based benchmarking for performance. Adams and Ferreira (2009) in the US tested observations from about 1,939 corporations between the years of 1996 to 2003. With help of an ordinary minimum squares model, their research established that boards that are more gender diversified devote extra effort towards monitoring managers. More so, there exists a negative association between companies' performance and the proportion of women on the board.

Also, there are studies that established a lack of evidence of a relationship between gender diversity in the board and firm's financial performance. For instance, in the US Carter et al. (2010) sampled 2,300 companies' years among the 500 S&P indices over a five-year period between 1998 to 2002 to establish the link between the number of women directors in the board, the board's proportion of ethnic minority, fiscal performance and important board committees. The research established that there existed no major association between the ethnic or gender diversity of the board on financial performance of important board committees.

Based on Denmark and Netherland's evidence, Marinova et al. (2010) sought to assess the effect of the board's gender diversity on corporation's financial performance with a sample size of 186 listed firms (84 Danish and 102 Dutch companies). The study applied a two-stage least-squares estimation method. The findings revealed that the issue of gender diversity had no impact on companies' financial performance. Using cross-sectional time-series models for assessing if female directors' presence in the board could impact a firm's stock and profit performance among US major corporations, Dobbin and Jung (2011) found that firms with more women as board of directors are likely not to experience any decrease or increase in profits. Equally, a study by Haslam et al. (2010) from the United Kingdom indicated no significant association between the presence of women in the boards and financial performance of the companies. The research measured

financial performance using return on equity and return on assets as the financial performance indicators.

Mboya and Ekadah (2012) assessed the influence of board's gender diversity on the corporate financial performance of commercial banks in Kenya using 32 commercial banks as the sample size. With the use of stepwise regression, the authors established no direct effect on financial performance of the board's gender diversity among banks in Kenya. The current study was different from the study by Ekadah and Mboya (2012) in three ways. First, the study by Ekadah and Mboya was conducted using data from 1998 to 2009 when women representation in corporate boards was very low. Currently, women representation in corporate boards stands at 12% compared to 4% and below before 2010. This study therefore has shed more light on the linkage between women representation at the boards and corporate financial performance. Secondly, the study by Ekadah and Mboya applied the less robust stepwise regression model which is less suitable for data in panel form. The current study will apply panel regression model. Lastly, the study by Ekadah and Mboya applied loan to total deposits ratio (LODP), board size (BoS), age of the bank (Bage), bank size (BS), net interest to total asset ratio (NIMTA), loan to asset ratio (LA) and listing status of the bank (Lstatus) as the control variables. This study included bank size and board size as the control variables. These have been indicated in various studies to influence performance. Moreover, the study included age and nationality diversity rather than just focusing on gender diversity.

2.3.2 Board nationality diversity and financial performance

Aosa's (2012) study identified the connection between board's nationality from other board's indicators of diversity and the firm's financial performance with a focus on the firms listed at the NSE. The research recognized no significant effect of the board's nationality diversity on the firms' financial performance of those firms listed at the NSE. Data from the boards' age amongst other characteristics of interest as well as the companies' historical financial performance were acquired from 40 firms using questionnaires that were structured. With use of OLS (Ordinary Least Squares) regression, the findings indicated an insignificant positive relationship between the

corporations' fiscal performance and board's nationality diversity. Generally, the findings indicated a statistically insignificant impact of board's nationality diversity on the firm financial performance. The findings nevertheless, did not correspond with the resource dependency and agency theories of corporate governance.

Randoy (2006) reviewed 500 of the largest companies in Denmark, Sweden, and Norway and established that there was no extensive effect of age diversity on return on assets or stock market performance. Gregory-Smith (2013) in the UK, established no evidence to support the hypothesis that diversity in age improves corporate performance. In Indonesia, Darmadi (2010) investigated the effect of the board's diversity on a company's performance by focusing on firms listed on the Indonesia Stock Exchange (IDX). The study applied three indicators including nationality diversity. A sample of 169 firms was used and data for one year (2009) was applied. This study established that nationality diversity had a significant positive impact on companies' performance.

Salim Darmadi (2011) examined the relationship between board members' diversity and the performance of firms listed on the IDX (Indonesia Stock Exchange). Three demographic traits of board members such as nationality were analyzed as diversity measures. A sample size of 169 listed companies was used. Diversity in nationality was established to have insignificant influence on companies' performances.

Rodrigues (2014) conducted a study on the companies listed on the S&P 500 between the years 2000 and 2012 to assess the association between board nationality diversity and firm performance. The study included 358 firms and applied regression analysis. The study applied data that was collected for every two years on the number of nationalities in the board. In the study, nationality was measured using the number of different nationalities in the board while firm performance was measured using ROA and Tobin's Q. The study findings established that nationality diversity had a significant positive association with both measures of financial performance of the firms (Tobin's Q and ROA).

2.3.3 Board's age diversity and financial performance

Aosa (2012) assessed the association between corporate financial performance and board diversity among companies listed at the NSE. Data regarding the boards' age and other board characteristics and the financial performance of the participating firms was acquired from 40 firms using structured questionnaire. With help of an OLS regression, the findings indicated there was an insignificant positive linkage between financial performance and the board's age diversity. Generally, the findings indicated a statistically insignificant impact of the board's age diversity on financial performance. The findings did not correspond with the resource and agency dependency theories on corporate governance including similar empirical studies.

Research by Salim Darmadi (2011) found that a percentage of young board members is positively linked to market performance, supporting the theory that having youthful people in boardrooms is associated with enhanced financial performance. Similarly, in Indonesia, using a cross-sectional time-series, Prihatiningtias (2012) aimed to find the effect of youthful members' presence in the boardroom on the company's social, financial and environmental performance. His research findings indicated a positive influence of age diversity on fiscal performance. More so, the findings from the qualitative method demonstrated that youthful board members have the capacity to initiate actions with a positive effect on corporations that could then boost the firm's performance in general. Such study results correspond with the Darmadi (2010) findings that established the existence of high proportion of youthful members was extensively and positively linked with financial performance.

There are studies which has established negative association between board age diversity and financial performance. Oxelheim and Randøy (2003) conducted a research to establish the traits of the Turkish banking industry's boards of directors and to assess the impact of board's diversity on banks' performance. The study applied panel data modelling to assess the effect of the board's diversity, as indicated by the percentage of young directors in the board, on the firm's financial performance. The study's findings indicated a negative correlation between financial performance and board age diversity.

Thus, the results do not support the case of having more youthful directors in the board to enhance the economic performance of the firm. The research establishes extra evidence to the limited empirical literature on the association between financial performance and board age diversity in the context of emerging markets. Moreover, most recent studies on the association between corporate financial performance and board age diversity have omitted financial companies from their samples.

2.4 Summary of literature review

The composition of the board subsumes individual director's capability to handle the several tasks (Daily, Johnson and Dalton, 1999) and thus has generally been assessed by analyzing the board's demographic traits (Rindova, 1999). Board size and composition have been regarded for long as vital governance process components for companies in business since it defines each director's affiliation as either outside or inside board member (Lawrence and Stapledon, 1999; Boone et al, 2007; Tricker, 2009). They provide vital support in the firms' performance.

Previous corporate restructuring processes encourage female members' participation in corporate governance undertakings. The objective is to enhance the board's gender diversity. Companies have been coerced by institutional shareholders, investors, and interest groups to nominate directors with distinct gender and ethnic backgrounds and bases of age and expertise differences at their boards (Van der Walt et al., 2006). The prevailing assumption is that extensive diversity would lead to reduced inward-looking decision-making processes with a greater forward-looking capacity (Westphal and Fredrickson, 2001; Bathula, 2008). Similarly, Bilimoria (1994) reasoned that executive women bring well-informed and fresh views related with environment, market and ethical issues that have an effect on the corporation's decision-making process. He also reasoned that boards that have more than one female director deliver a greater positive impact through strategic decisions. Hence, the diversity of the board of directors, either viewed from one or from combined attributes, could indirectly or directly explain corporate financial performance.

Existing literature shows a correlation between corporate governance, mostly corporate performance and board's diversity (Fan, 2012; Haslam et al., 2010; Julizaerma and Sori, 2012). Nevertheless, some research gaps have yet to be sufficiently addressed. It is well argued and documented in literature that board members have the potential to influence organizations' financial performance. However, some researches have been conducted to assess if this could influence non-financial performance measures (such as employees retention, innovation, and customer satisfaction). More so, research on the board's gender diversity is largely drawn and conducted in developed nations that are distinct in their socio-cultural and economic structure from what is the case in developing world. Gender diversity literature in developing nations is scarce and limited. The study's findings among developed countries could not be generalized and applied across international boundaries because of the difference in culture and regulatory environment.

Additionally, the few researches done among developing nations are limited by methodological limitations like the use of few years of secondary data and case studies. More studies should hence be conducted using either panel, primary or survey data to enhance the results and provide an understanding that provides deeper insight on the association between the financial performance of companies and gender diversity. Similarly, most previous researches are only limited to companies listed on the securities exchange, therefore excluding insights into other economic segments that form the bulk of businesses that are formal. This raises sample bias issues. Finally, while there is substantial literature highlighting the influence of board's gender diversity on a firm's financial performance, prevailing literature does not illustrate a definite relationship between the board's firm performance and gender diversity variable.

Empirical evidence regarding the linkage between a firm's performance and board diversity is inconclusive and equivocal with previous research generating conflicting findings. Experimental evidence relating the association between firm performance and board diversity reported conflicting and mixed findings. Moreover, most studies focus on gender diversity and few have focused on age and nationality diversity. Previous studies also observed no relationship (Ekadah & Mboya, 2012; Haslam et al., 2010). Additional

researches underline either a negative (Fan, 2012; Julizaerma and Sori, 2012) or positive relationship (Adams, Almeida, and Ferreira, 2009; Bohren and Strom, 2006; Haslam et al., 2010) between firm performance and board diversity. Hence, the association between corporate financial performance and board diversity is inconclusive and hence still open for more empirical enquiry.

2.5 Combined Indicator of Board Diversity

The study aimed to assess the role of combined board diversity on financial performance of commercial banks in Kenya. This study measured board diversity as a score that combines the three board diversity indicators (age, gender and nationality). Gender diversity was measured in the study using the percentage of female directors in the board (number of women in board/board size). Board size is a measure that indicates the sum number of directors at the board. Age diversity was measured using the proportion of members less than 50 years. This is informed by the fact that most boards include elderly directors who are perceived to have the experience and skills required to steer the company (Darmadi, 2010). Nationality diversity was indicated by the proportion of foreign directors in the board (foreign directors in the board/board size).

The combined indicator of board diversity was a measure that combined the three diversity factors. This therefore provided a single score of the diversity measure of the banks. Combined indicator of board diversity is therefore a joint measure of gender, age and nationality diversity (Gender diversity + Gender diversity + Nationality diversity).

2.6 Research gap

Empirical investigations on the influence of board diversity on corporate financial is inconclusive where the results of the various studies are dependent highly on the methodology applied and the context of the study. The studies reviewed indicate mixed results which can be due to the different time periods used, the differing economic environments, the diversity of countries included in the studies and the different measures used to assess diversity and financial performance. The current study applied the most

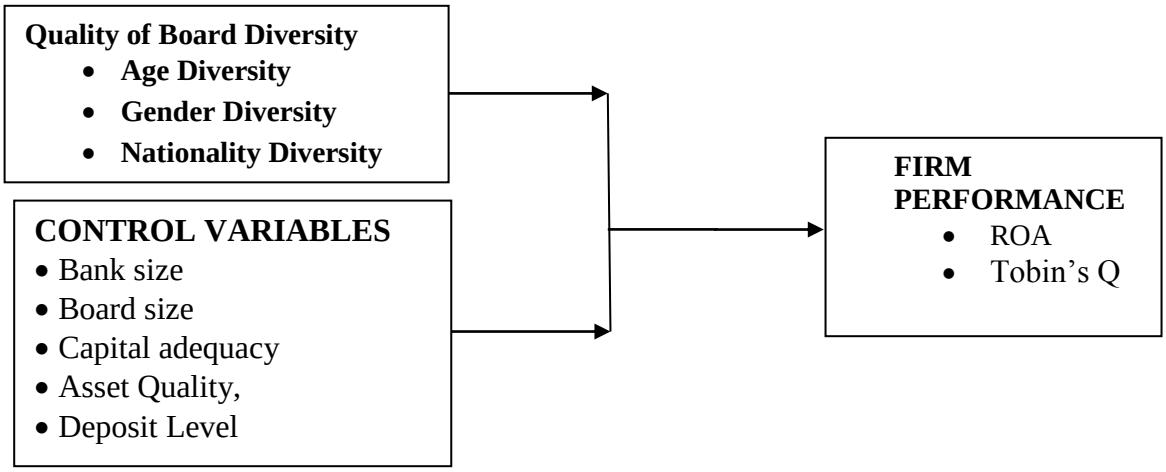
recent data (2012-2016) to incorporate the recent developments in diversity as many banks had recently welcomed the issue of board diversity.

Most companies in the world are welcoming the idea that board diversity is critical for corporate governance and firm performance. However, the various studies showing positive effect (Rodrigues, 2014), negative effect (Darmadi, 2010) and neutral effect (Ekadah & Mboya, 2012) of the board's diversity on corporate financial performance raised serious questions regarding the value of board diversity in the firm. However, most of these studies measure board diversity with the many underlying factors such as age, gender, nationality, and ethnicity but do not have a single measure of diversity that incorporates the various diversity aspects. This study provided a single measure of diversity that combined the various diversity measures.

2.5 Conceptual framework

According to Shields and Rangarajan (2013), conceptual framework is an analytical instrument with some variations and contexts used to make distinctions and organize ideas in a meaningful yet simplified way. The conceptual framework thus provides a way of understanding how board diversity impacts the performance of Kenyan commercial banks. The conceptual framework that guided the research is presented in Figure 2.1.

Figure 2.1: Conceptual framework on board diversity



Source: Author (2017)

Combined measure of board diversity (age, nationality and gender diversity) was treated as the independent variable. Combined measure of board diversity was measured as an additive variable that combined age, nationality and gender diversity. This enabled the study to provide a single score of diversity that incorporated many diversity aspects and thus provided more robust findings on how the various diversity measures in the board can jointly influence financial performance.

The control variables in the study were bank size, board size, capital adequacy, asset quality and deposit level. These were included in the study as they had been indicated to be instrumental in influencing bank financial performance. Bank size was measured using the book value of assets owned by the bank. Board size was measured using the number of directors in the board. Capital adequacy is a ratio of Tier I and II capital to the risk weighted assets. Other control variables used include asset quality and deposit level. The dependent variable was the firm's financial performance measured using ROA and Tobin's Q.

2.6 Operationalization of Variables

The variables and their measurement are depicted in Table 2.1. The variables that were included in the study include gender diversity, age diversity, nationality diversity, combined measure of board diversity, ROA and Tobin's Q. How the variables were operationalized is presented in Table 2.1.

Table 2.1: Measurement of Variables

Variable	Type of variable	Measurement scale	Measurement
Gender diversity		Ratio	Number of female members / board size
Age diversity	Independent	Ratio	Number of board members < 50 years / board size
Nationality diversity	Independent	Ratio	Number of foreign nationals in the board / board size
Combined indicator of board diversity	Independent	Ratio	Addition of the three diversity indicators
ROA	Dependent	Ratio	Net profit after tax / value of assets
Tobin's Q	Dependent	Ratio	Market value of assets / Book value of assets

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides an overview for the research data collection methods that were used, the research methodology applied, and the data analysis methods utilized. Moreover, the chapter provides the study population that was used in the study and in generating the findings and conclusions thereof.

3.2 Research Design

This research was causal since it attempted to analyze the relationship between commercial banks' board diversity and financial performance. Additionally, the study was explanatory in nature as it sought to establish whether the characteristics including gender, age and nationality had any effect on financial performance of commercial banks. The effect of banks' diversity on performance was analyzed over a five-year period from 2012 to 2016. The period was selected to enable a long enough period but also to ensure that data collected was current. Because a board typically has a six years' lifespan, it may follow then that the entire board could have been constituted or changed.

3.3 Population and Sampling

The population targeted for this research was all the operational commercial banks in Kenya by December 2016. These banks were forty-two (42) in number based on the CBK (Central Bank of Kenya) 2017 Banking Supervision Report. However, since some banks were in statutory management and others were in receivership, only 38 commercial banks were included in the study. All these banks were studied since a whole and conclusive representative analysis was required.

3.4 Data Collection methods

The relevant data for this research was derived from secondary sources. The operational and financial data for commercial banks is readily available from various secondary sources. The data for this study was derived from secondary sources such as audited annual accounts of the commercial banks and the CBK bank supervision reports.

3.5 Data Analysis

Panel regression analysis was used to establish the correlation between firm's performance and board diversity. Panel regression analysis was also utilized to assess the relationship among variables mostly the extent to which a variable that is dependent is a function of either several or one independent variable (Saunders et al., 2007; Hair et al., 1998). Descriptive statistics were exploited to provide a description of targeted firms' board of directors' characteristics and financial performance.

Panel regression model was used to evaluate quantitative data gathered in this research. It was utilized because it is a common and versatile model exploited by many researchers. Similarly, panel regression was used to explore the relationship among variables, since it not only indicates negative, positive, or no relationship but also underlines the strength of such relationship (Jonson & Kuby, 2007). Moreover, it was used because it was anticipated that there would be some relationship among certain independent variables.

A unit of analysis for bank financial year was applied in examining the influence of the board's diversity on corporation's financial performance. Five bank-year records for each bank were utilized where the panel regression model (random-effects and fixed effects models) was considered to test the study hypotheses. However, the pooled regression model could be viable because it corrects omitted variables' biasness, and the presence of heteroscedasticity and auto-correlation in pooled data. The methodology allows the examiner to assess variations from cross-sectional units simultaneously using variations among individual units from time to time (Bathula, 2008).

A valuable assumption for selecting the random-effect estimation is such that the overlooked heterogeneity shall not be associated with independent variables. Before proceeding with regression analyses, the research variables should be gauged for multi-collinearity in line with established procedure (Hair et al., 1998). The methodology was viable for the research since it entailed the board diversity attributes as an independent variable and the financial performance as a dependent variable.

In this research, the researcher conducted a cross-sectional regression assessment to assess the extent of which the board's diversity impacts on the firm's financial performance. Putting into consideration control and explanatory variables which could affect corporate financial performance. The study adopted two models. The first model was used to analyse data for the first three specific objectives and it was as follows;

$PERF_{it} = GD_{it} + AD_{it}\ ND_{it} + BS_{it} + BdS_{it} + CA_{it} + AQ_{it} + DL_{it} + \alpha_i + u_{it}$ ……. (i)

Where

PERF is fiscal performance that is valued by the ROA and Tobin's Q

GD is gender diversity

AD is age diversity

ND is nationality diversity

BS is the bank's size valued as the log of assets

BdS is board size

CA is Capital adequacy

AQ is Asset Quality,

DL is Deposit Level

α_i (i=1….38) intercept for each entity.

u_{it} is the error term

the second model was used to analyze data for the fourth objective and it was as follows:

$PERF_{it} = BD_{it} + BS_{it} + BdS_{it} + CA_{it} + AQ_{it} + DL_{it} + \alpha_i + u_{it}$ …… (ii)

Where

PERF is fiscal performance that is valued by the ROA and Tobin's Q

BD is board diversity measured as a product of the women's proportion, foreign nationals and board members' proportion less than 50 years

BS is the bank's size valued as the log of assets

BdS is board size

CA is Capital adequacy

AQ is Asset Quality,

DL is Deposit Level

α_i (i=1….38) intercept for each entity.

u_{it} is the error term

ROA was derived from the CBK's supervision reports for banking for 2012 – 2016 that defines it in the company's net income's ratio to its value of assets book value.

3.6 Data Quality

The research conducted was quality as it only considered data from audited and published financial statements from commercial banks and the published reports from CBK. Reliability of the data was checked through comparing data collected from audited financial statements of the commercial banks and the data available from bank supervision reports of the CBK. This ensured that reliable information was included in the study hence providing credibility to the findings.

3.7 Ethical Issues

Based on Mugenda and Mugenda, (2003), considerations of ethics is critical for any study. Ethical concerns were put into consideration plus the proper researcher's conduct and result reliability and authenticity. Since the data collected was available publicly, the only ethical issue of concern was authenticity and truthfulness of the findings. The researcher ensured that the findings reported were as they were generated from the data collected.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS - ANALYSIS AND RESULTS

4.1 Introduction

The chapter presents the steps that were taken in analyzing the data, the results and the discussion of the results. First, the chapter presents the exploratory analysis where visual plots for return on assets which was the dependent variable are provided. Moreover, the chapter also presents the pre-analysis diagnostic tests and the post-test diagnostic tests. The model that was applied in analysis is also presented where the results are interpreted and discussed. The analysis relates to data of the 38 commercial banks that had complete data for the five years. This was done to ensure that the data analysis was performed with a balanced panel.

4.2 Sample Representation

The study was a census of the 42 commercial banks in Kenya. However, 38 commercial banks had complete data for the five years (2012 – 2016). Four commercial banks lacked data for either the entire period or a part of the study period. Charterhouse bank was under statutory management for the entire study period, Chase and Imperial Banks were placed under receivership during the study period, while Mayfair bank was licensed in 2017. The 38 commercial banks had data for the entire five years and this provided the study with a balanced panel. The 38 commercial banks represented 90% of the targeted 42 commercial banks.

4.3 Diagnostic Tests

The study conducted diagnostic tests that are required before model fitting. These diagnostic tests are important before any regression is conducted to ensure that the data fits the regression assumptions. The diagnostic tests started with the test of collinearity among the variables using Variance Inflation Factors (VIF). Results are presented in Table 4.1. These results indicated that there was no multicollinearity as no variable had VIF of above 5. Creswell (2013) notes that when VIF is below 10, that indicates no multicollinearity.

Table 4.1: Variance Inflation Factors

Variable	**VIF**	**1/VIF**
Deposit level	2.79	0.358
Capital Adequacy Ratio	2.79	0.396
Asset Quality	1.19	0.842
Nationality Diversity	1.16	0.863
Gender Diversity	1.14	0.878
Age Diversity	1.04	0.965
Mean VIF	1.64	

To test for serial correlation, the Wooldridge test for autocorrelation in panel data was applied which has the null hypothesis of no first order serial correlation. Results are presented in Table 4.2. The results indicate that there was no first order serial correlation ($F = 1.6870$ $p > 0.05$).

Table 4.2: Test for Serial Correlation

Wooldridge test for autocorrelation in panel data	
Ho: No first order autocorrelation	
F (1, 37)	1.687
Prob > F	0.201

After the selected panel regression model was run post estimation diagnostics were conducted to establish whether the model was a good fit. First, the test of homoscedasticity was conducted using the white test. The results are presented in Table 4.3. The results indicate that the null hypothesis for homoscedasticity could not be rejected (chi square = 15.56; $p > 0.05$). This indicated that the residuals had equal variances.

Table 4.3: Tests for Homoscedasticity

White's test for Ho: Homoscedasticity
against Ha: unrestricted heteroscedasticity

Chi^2 (13) = 15.56
Prob > Chi^2 = 0.744

Cameron & Trivedi decomposition of IM-test

Source	Chi^2	df	p
Heteroscedasticity	15.56	13	0.744
Skewness	3.56	5	0.615
Kurtosis	2.74	1	0.098
Total	21.86	19	0.697

The test for the normality of residuals was graphically tested using the Normality QQ plots for residuals. The results are presented in Figure 4.1 which indicates that the residuals did not deviate significantly from normal distribution.

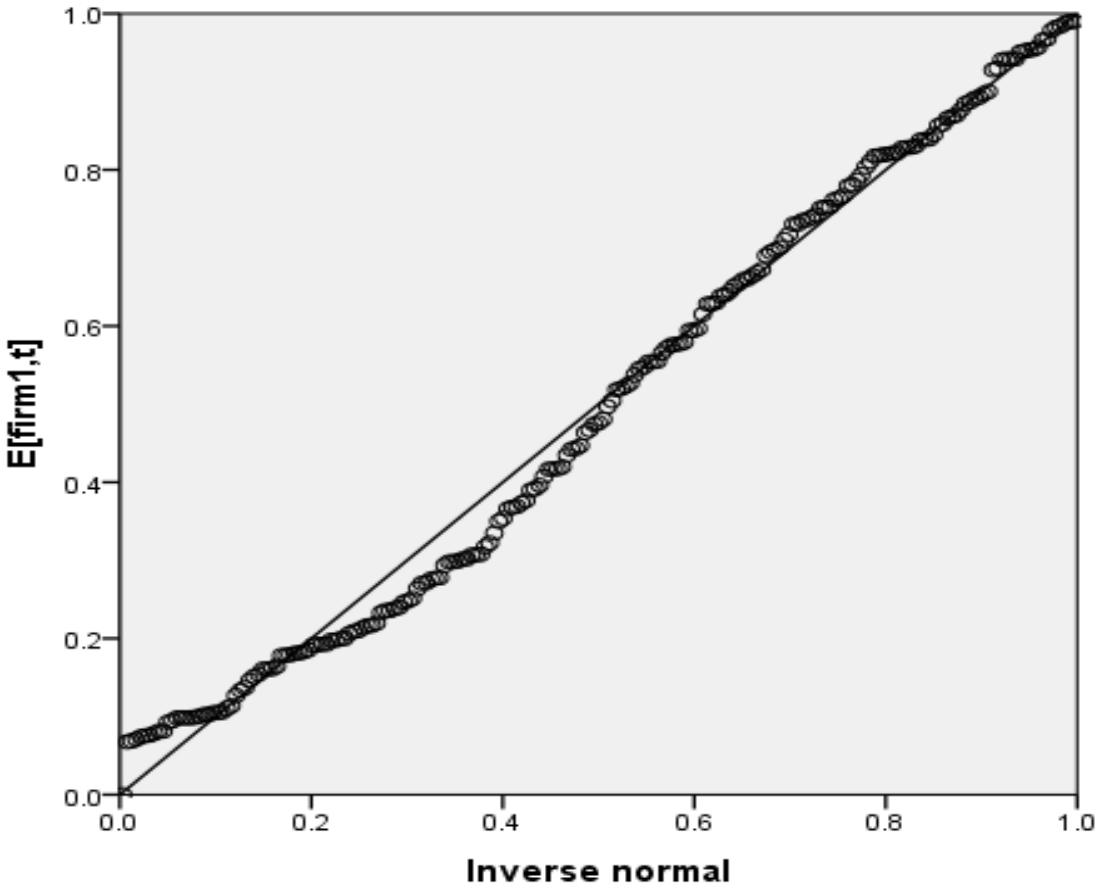


Figure 4.1: Normal QQ plot for residuals

Test of normality of residuals was conducted using the overlay of k density curve over the normal curve. The k density curve is derived from estimating the residuals after running the fixed effects model and then plotting a curve. The results are indicated in Figure 8 which were used to conclude that the residuals were normally distributed as the plot of residuals was a good fit to the normal curve.

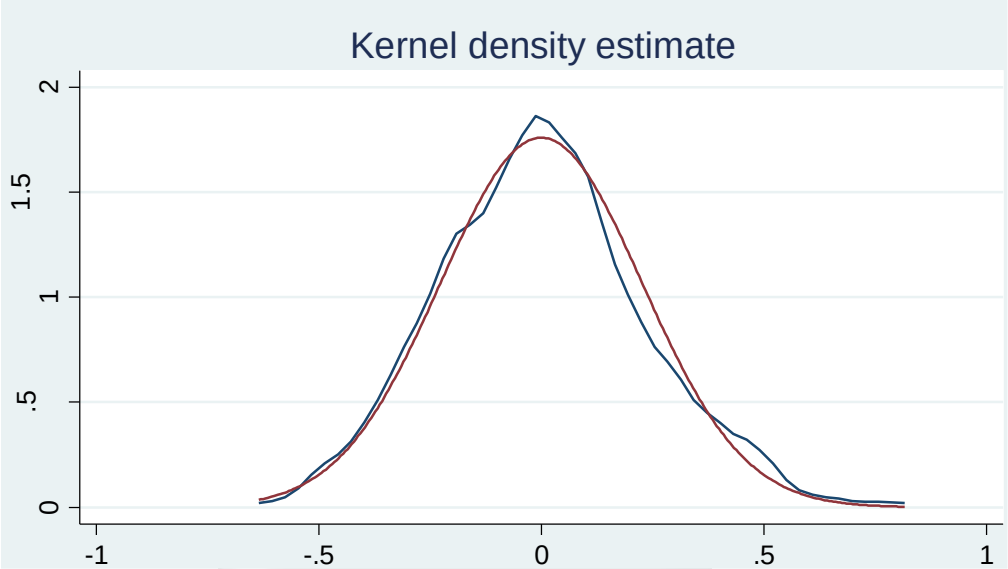


Figure 4.2: Test of Normality of Residuals

After the post tests, it was established that the panel regression model could be fitted. A Hausman test was conducted to establish the right panel data model (fixed or random) to fit to the data. The results presented in Table 4.4 indicate that the chi square was 5.13 and was not significant at 5% ($p = 0.528$). This hence implies that a random effects model is appropriate for the data.

Table 4.4: Hausman Test

Hausman fixed random				
	Coefficients			
	Fixed (b)	Random (B)	Difference (b-B)	Sqrt(diag(V_b-V_B) SE
Asset quality	-3.304	-3.022	-0.282	0.120
Capital Adequacy	3.681	3.259	0.423	-
Deposit level	0.006	0.008	-0.002	-
Board Size	-0.667	-0.604	-0.063	0.008
Bank size	0.805	-0.2242	1.047	0.746
Board Diversity	1.642	-0.368	2.010	1.613
b = consistent under Ho and Ha; obtained from xtreg B = inconsistent under Ha, efficient under Ho; obtained from xtreg Test: Ho: difference in coefficients not systematic Chi^2 = (b-B) [(v_b – v_B) ^ (-1)] (b-B) = 5.13 Prob > Chi^2 = 0.528				

4.4 Descriptive Analysis

The study conducted exploratory data analysis with the aim of comparing the trends of ROA and Tobin's Q for all the commercial banks that were included in the study. The exploratory analysis was important to establish whether there were significant differences between the commercial within the five-year period. This output helps determine whether to use POLS or panel data models. The results for the growth plots of ROA are presented in Appendix III. These results revealed that there were not many variations in the commercial banks except in bank 14, 15, 25, 26, 28, 36 and 37. The other commercial banks showed ROA that was not changing much over the five years. This data showed that though there were no major differences amongst the banks based on the ROA, there were some uniqueness in the ROAs.

Further, growth plots for Tobin's Q were plotted and the results are presented in Appendix IV. The results revealed that there were not many variations based on the Tobin's Q of the commercial banks except in bank 8, 9, 10 and 14. The other commercial banks showed Tobin's Q which did not fluctuate much over the study period of five years.

The study also provided the overlain plots for all the commercial banks that showed the differences among the commercial banks in terms of the two dependent variables (ROA and Tobin's Q). The results are presented in Figure 4.2 and 4.3. Results in Figure 4.2 present the overlain plots for ROA. This indicated that the intercepts for the different commercial banks may not be materially different apart from two commercial banks which indicated significant differences from the others. Since the basic model assumes that the intercept is the same for all firms, this was indicated to apply for this data. The overlain plot in Figure 4.3 also indicated that there seemed to be no time related fixed effects as most of the plots seemed to move in the same direction. Moreover, most commercial banks seemed to have an increase in ROA in 2013.

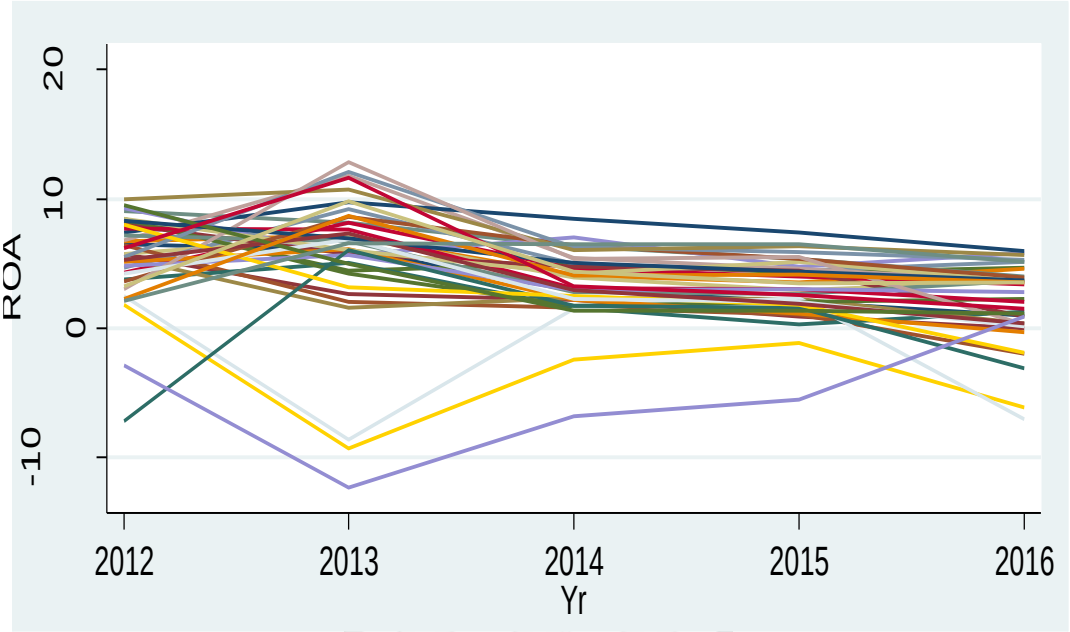


Figure 4.2: Overlain Plots of ROA

The overlain plots for Tobin's Q was also plotted. Figure 4.3 indicates that there was a general rise in Tobin's Q for the banks from 2012 to 2015. However, these seemed to be a disruption in in the year 2016 that seemed most banks have a decrease in their Tobin's Q.

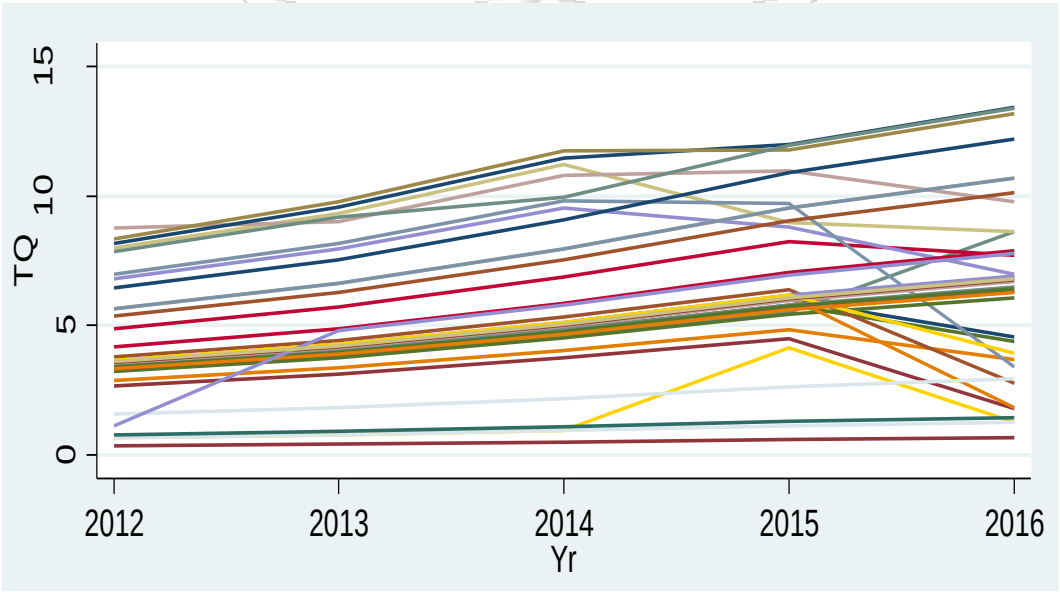


Figure 4.3: Overlain Plots of Tobin's Q

The study further generated descriptive statistics for the panel data and the results are as presented in Table 4.5. Study results provided the mean of the independent, control and dependent variables. The mean of board diversity measure was 0.57. This indicated very low diversity as this was a combined measure of three different indicators of diversity (age, gender and nationality. Mean of board size was 9.11 indicating that most boards of commercial banks had an average of approximately nine members. Mean of Tobin's Q was 6.399 which implied that the commercial banks had enabled to increase their market value of assets to more than six times their book value. Mean of capital adequacy was 0.144 indicating that the commercial banks had higher capital adequacy than the statutory 8 percent. Further, the mean for ROA was 3.925% indicating that on average, the commercial banks had reported good financial performance over the five-year period.

Table 4.5: Descriptive Statistics

Variable	Mean
Board diversity	0.565
Board size	9.111
Nationality diversity	0.115
Age diversity	0.241
Tobin's Q	6.400
Deposit level	7.146
Capital Adequacy ratio	0.144
Asset quality	0.098
Bank size	7.318
ROA	3.925

4.5 Bivariate analysis

The study also conducted a test to investigate the relationship between the variables under study. A correlation matrix is presented in Table 4.6 where the results indicate that there was a strong relationship between capital adequacy ratio and deposit level (r = 0.743). Results also indicate that there was moderate linear association between capital

adequacy ratio and gender diversity (r = 0.311), between asset quality and deposit level (r = 0.328). The other variables had weak relationships between them. Negative association was established between age diversity and nationality diversity (r = -0.082) though the relationship was very weak.

Table 4.6: Correlation Matrix

	1	2	3	4	5	6
1. Gender Diversity	1.000					
2. Nationality Diversity	0.168	1.000				
3. Age diversity	0.119	-0.082	1.000			
4. Deposit level	0.236	0.312	0.018	1.000		
5. Capital Adequacy ratio	0.311	0.158	0.099	0.743	1.000	
6. Asset quality	0.071	0.193	0.018	0.328	0.104	1.000

4.6 Panel Regression

The results of the developed random effects model are then presented in Table 4.6. In the model the independent variables were age diversity, gender diversity and nationality diversity. The control variables were bank's size, board size, capital adequacy, asset quality and deposit level. Study results in Table 4.7 indicated that the model was statistically significant ($\chi^2 = 38.81$; $p < 0.05$). This indicates that the board diversity and the control variables that had been included in the model could provide important predictive power on financial performance of the commercial banks. The within r squared of the model was 23.78 percent indicating that the model explained 23.78% of the variation in financial performance within the 38 commercial banks. This r squared was justifiably low because there were various other factors which significantly influence financial performance including management efficiency, working capital management, employee efficiency and use of technology. The between r-squared was 1.2 percent while

the overall r squared was 9.1 percent. This indicates that the model was better at explaining the variations within the commercial banks than if the data was pooled.

Table 4.7: Random Effects Model on ROA

Random effects GLS regression				Number of observations =	190	
Group variable: Bank				Number of groups =	38	
R-Sq Within = 0.238				Observations per group =	5	
Between = 0.012				Wald Chi^2 (8) =	38.81	
Overall = 0.091						
Corr (u_i, x) = 0 (assumed)				Prob > Chi^2 =	0.000	
Return on assets	Coefficient	Std. Error	z	p > z	95% Confidence Interval	
Gender diversity	1.326	2.737	0.48	0.628	-4.039	6.690
Nationality diversity	-5.072	3.009	-1.69	0.092	-10.969	0.825
Age diversity	1.539	2.481	0.62	0.535	-3.324	6.401
Bank size	0.245	0.241	0.93	0.351	-0.697	0.247
Board size	-0.615	0.221	-2.78	0.005	-1.048	-0.182
Capital adequacy	3.514	0.915	3.84	0.000	1.721	5.307
Asset Quality	-3.039	1.269	-2.39	0.017	-5.526	-0.552
Deposit level	0.003	0.079	0.04	0.969	-0.152	0.159
Constant	9.453	2.500	3.78	0.000	4.552	14.354

The first objective of the study was to establish the effect of gender diversity on financial performance of commercial banks in Kenya. Study results in Table 4.7 indicate that gender diversity ($\beta = 1.326$; $p = 0.628$) did not have any significant effect on financial performance of commercial banks.

The second objective of the study was to establish the effect of nationality diversity on financial performance of commercial banks in Kenya. Study results in Table 4.7 indicate that nationality diversity ($\beta = -5.072$; $p = 0.092$) did not have any significant effect on financial performance of commercial banks.

The third objective of the study was to establish the effect of age diversity on financial performance of commercial banks in Kenya. Study results in Table 4.7 indicate that age diversity ($\beta = 1.539$; $p = 0.535$) did not have any significant effect on financial performance of commercial banks.

Similarly, bank size ($\beta = 0.225$; $p = 0.351$), and deposit level ($\beta = 0.0031$; $p = 0.969$) did not have a significant effect on financial performance. However, capital adequacy ($\beta = 3.514$; $p = 0.000$) had a positive effect on ROA. Further, board size ($\beta = -0.615$; $p = 0.005$) and asset quality ($\beta = -3.039$; $p = 0.017$) had a significant negative effect on financial performance (ROA) of commercial banks.

The study conducted a random effects panel regression of the independent variables without the control variables. The findings presented in Table 4.8 indicate that neither gender diversity ($\beta = 0.918$; $p = 0.942$), nationality diversity ($\beta = -4.16$; $p = 0.185$) nor age diversity ($\beta = -0.058$; $p = 0.982$) had a significant effect on financial performance of commercial banks.

Table 4.8: Random Effects Model Without Control Variables

Random effects GLS regression				Number of observations =		190
Group variable: Bank				Number of groups =		38
R-Sq Within = 0.0001 Between = 0.0668 Overall = 0.0328				Observations per group =		5
				Wald Chi^2 (8) =		1.77
Corr (u_i, x) = 0 (assumed)				Prob > Chi^2 =		0.6215
Return on assets	Coefficient	Std. Error	z	p > z	95% Confidence Interval	
Gender diversity	0.198	2.733	0.07	0.942	-5.158	5.555
Nationality diversity	-4.160	3.137	-1.33	0.185	-10.308	1.989
Age diversity	-0.058	2.618	-0.02	0.982	-5.189	5.072
Constant	4.377	1.025	4.27	0.000	2.369	6.385

The study also run a model with Tobin's Q as the dependent variable. Study results in Table 4.8 indicated that the model was statistically significant ($\chi^2 = 90.80$; $p < 0.000$). This indicates that the board diversity and the control variables that had been included in the model could provide important explanatory power towards financial performance of the commercial banks. The within r squared of the model was 37.17 percent indicating that the model explained 37.17% of the variation in financial performance within the 38 commercial banks. The between r-squared was 13.38 percent while the overall r squared was 16.37 percent. This indicates that the panel model was better in explaining the variations within the commercial banks than the pooled OLS model.

Moreover, the study results presented in Table 4.9 indicate that gender diversity ($\beta = 1.297$; $p = 0.628$) did not have any significant effect on financial performance of commercial banks.

Nationality diversity (β = -1.277; p = 0.576) did not have any significant effect on financial performance of commercial banks.

Age diversity (β = 0.964; p = 0.466) did not have any significant effect on financial performance of commercial banks.

Similarly, bank size (β = 0.2278; p = 0.272) and deposit level (β = 0.0153; p = 0.676) did not have a significant effect on financial performance. However, capital adequacy (β = 3.6960; p = 0.000) had a significant positive effect while board size (β = -0.251; p = 0.015) had a significant negative effect on financial performance (Tobin's Q) of commercial banks. Further, asset quality (β = -1.412; p = 0.018) had a significant negative effect on financial performance (Tobin's Q).

Table 4.9: Random Effects Model on Tobin's Q

Random effects GLS regression				Number of observations = 190		
Group variable: Bank				Number of groups = 38		
R-Sq Within = 0.372				Observations per group = 5		
Between = 0.134				Wald Chi^2 (8) = 90.80		
Overall = 0.164						
Corr (u_i, x) = 0 (assumed)				Prob > Chi^2 = 0.000		
Tobin's Q	Coefficient	Std. Error	z	p > z	95% Confidence Interval	
Gender diversity	1.297	1.506	0.86	0.389	-1.654	4.248
Nationality diversity	-1.257	2.248	-0.56	0.576	-5.664	3.149
Age diversity	0.964	1.322	0.73	0.466	-1.627	3.555
Bank size	0.223	0.203	1.10	0.272	-0.620	0.175
Board size	-0.251	0.104	-2.42	0.015	-0.454	-0.048
Capital adequacy	3.696	0.417	8.86	0.000	1.454	5.307
Asset Quality	-1.412	0.595	-2.38	0.018	-4.281	-2.878
Deposit level	0.015	0.037	0.42	0.676	-0.056	0.087
Constant	6.847	1.925	3.56	0.000	3.075	10.620

Further, the study sought to establish the effect of the combined board diversity on financial performance of commercial banks. First, the model was run with ROA as the dependent variable. The results are presented in Table 4.10. The study findings indicate that board diversity (β = -.368; p = 0.825) had no significant effect on financial performance (ROA) of commercial banks.

Table 4.10: Random Effects Model of Board Diversity on ROA

Random effects GLS regression				Number of observations =	190	
Group variable: Bank				Number of groups =	38	
R-Sq Within = 0.219				Observations per group =	5	
Between = 0.000				Wald Chi^2 (6) =	34.22	
Overall = 0.073						
Corr (u_i, x) = 0 (assumed)				Prob > Chi^2 =	0.000	
Return on assets	Coefficient	Std. Error	z	p > z	95% Confidence Interval	
Board diversity	-1.368	1.663	-0.22	0.825	-3.627	6.690
Bank size	0.242	0.235	1.03	0.304	0.703	2.329
Board size	-0.604	0.223	-2.71	0.007	-1.041	-0.168
Capital adequacy	3.259	0.915	3.56	0.000	1.465	5.052
Asset Quality	-3.022	1.276	-2.37	0.018	-5.522	-0.522
Deposit level	0.008	0.080	0.10	0.923	-0.149	0.165
Constant	9.904	2.471	4.01	0.000	5.061	14.747

Lastly, the study assessed the effect of combined board diversity on finance performance of commercial banks measured through Tobin's. Study findings in Table 4.10 indicate that board diversity (BD) did not have a significant effect on Tobin's Q of the commercial banks (β = 0.703; p = 0.473).

Table 4.10: Random Effects Model of Board Diversity on Tobin's Q

Random effects GLS regression	Number of observations =	190
Group variable: Bank	Number of groups =	38
R-Sq Within = 0.371	Observations per group =	5

Between = 0.107 Overall = 0.146 Corr (u_i, x) = 0 (assumed)				Wald Chi^2 (6) = 89.84 Prob > Chi^2 = 0.000		
Tobin's Q	Coefficient	Std. Error	z	p > z	95% Confidence Interval	
Board diversity	0.703	0.980	0.72	0.473	-1.217	2.623
Bank size	0.253	0.198	1.28	0.201	-0.641	1.134
Board size	-0.244	0.103	-2.36	0.018	-0.441	-0.041
Capital adequacy	3.761	0.410	9.17	0.000	1.362	4.329
Asset Quality	-1.444	0.591	-2.44	0.015	-3.871	1.212
Deposit level	0.014	0.037	0.39	0.697	-2.176	0.324
Constant	7.054	1.894	3.73	0.000	3.342	10.765

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Presented in this chapter is a summary of the research findings, discussion of the results, conclusion and the recommendations that are made in the study. The summary of the findings provides the major results that were derived from the study and offers a discussion of these key findings. The discussion is also provided in relation to the theories and previous empirical studies on board diversity and financial performance.

5.2 Discussion of Findings

5.2.1 Age Diversity and Financial Performance

The study results indicated that board age diversity (AD) did not have a significant effect on financial performance measured through ROA ($\beta = 1.539$; $p = 0.535$) and Tobin's Q ($\beta = 0.964$; $p = 0.466$). These results indicated that the mix between young and elderly directors in the board does not have any significance on performance. These results support the findings by Bhatt and Bhattacharya (2015) and Gaur et al. (2015) that found insignificant positive relationship between age diversity and financial performance while the findings by Kumar and Singh (2013) established insignificant negative relationship between age diversity of the board and financial performance.

The results of the insignificant effect of age diversity on financial performance negate the proposition of the group diversity theory by Cox (1993). This theory advocates that inclusion of members with distinctly different age, cultural significance and group affiliations can enhance the group's effectiveness. Similarly, this theory postulates that

when a group is made up of individuals from diverse backgrounds, that group becomes more effective than a group made up of individuals from similar backgrounds. This study established that having a board that is diverse in terms of age did not influence financial performance. The study results also concur with a study by Chen et al. (2015) in UK that there is no relationship between board age diversity and financial performance. The study results also support the findings by Marinova et al. (2010), Horvath and Spirollari (2013), and Ekadah and Mboya (2012) which all found insignificant effect of age diversity on financial performance.

The study results on the insignificant effect of age diversity on financial performance however contradicted findings by Nakano and Nguyen (2014) which established that board age had a significant negative effect on performance of the firm. The findings also contradict the findings by Abdullah and Ismail (2013) which established that age diversity was negatively associated with ROA.

5.2.2 Gender Diversity and Financial Performance

The study results indicated that gender diversity had insignificant effect on financial performance of the commercial banks in Kenya measured through both ROA ($\beta = 1.326$; $p = 0.628$) and Tobin's Q ($\beta = 1.297$; $p = 0.628$). These findings indicate that having a board that is more diverse in relation to gender does not provide any short term observable financial performance benefits. These results supported the results from a study by Letting et al. (2012) which established that there was no significant effect between board gender diversity and financial performance. However, these results contradict the findings by Fan (2012) which indicated that financial performance of the

firms was induced by diversity of the boards in relation to factors such as gender, ethnicity and age.

5.2.3 Nationality Diversity and Financial Performance

The study results also indicated that nationality diversity was not significantly related with financial performance of the commercial banks as measured through both ROA (β = -5.072; p = 0.092) and Tobin's Q (β = -1.277; p = 0.576). These results contradict the group diversity theory that implies that when the board has many nationalities, it will approach issues using different perspectives which may be beneficial for the firm. These findings agree with the findings by Kiel and Nicholson (2013) that there was no significant effect of nationality diversity in the board and performance of the organization. This was explained by Merendino (2014) to imply that when a company is working in a certain region, having board members from a different region rarely helps the firm since even global firms need to have localized perspectives. The finding also supports the findings by Salim Darmadi (2011) who examined the relationship between board members' nationality diversity and the performance of firms listed in the IDX (Indonesia Stock Exchange). Three demographic traits of board members including nationality were analyzed as diversity proxies. A 169-sample size was used from 169 listed companies and the findings established that diversity in nationality had insignificant influence on companies' performances.

5.2.4 Combined Board Diversity and Financial Performance

Lastly, the study results revealed that board diversity (BD) did not have a significant effect on ROA (β = -.368; p = 0.825) as well as Tobin's Q of the commercial banks (β = 0.703; p = 0.825). The combined measure of board diversity focussed on age, gender and nationalities of the board members of the commercial bank. The findings imply that having a more diverse board in terms of age, gender and nationalities provides the firm no financial performance benefits. This finding supports the findings by Prihatiningtias (2012) which indicated that having more women, youthful members and foreign members in the board did not enable a firm to perform better than firms which had less diversified boards. This was explained to imply that though diversity can have beneficial aspects, it can also bring disadvantage to the board by increasing conflicts that are fuelled by the fundamental differences among the board members. For the board to harness its diversity as an asset, there needs to be strong leadership for the board to tap the different beneficial aspects from its individual members. This implies that diversity in itself does not bring benefits but there must be constructive effort to tap into the diversity dividend.

5.3 Conclusion

The study assessed the influence of board diversity on financial performance of commercial banks in Kenya. Board gender diversity, age diversity and nationality diversity size, and combined diversity score were the independent variables in the study while the dependent variable was financial performance which was measured using ROA and Tobin's Q. The study findings led to the following conclusions. First, board age diversity did not have a significant effect on financial performance of commercial banks.

Secondly, gender diversity was not a significant factor in influencing financial performance in the commercial banks, while board nationality diversity did not also have a significant influence on financial performance of commercial banks. Lastly, the study concludes that combined board diversity did not have a significant effect on financial performance of commercial banks.

5.4 Recommendations

5.4.2 Policy Recommendations

The study recommends to regulators and policy makers to consider the influence such recommendations would have on the overall financial performance and sustainability of the firm in passing any policy or regulations regarding board diversity. Further, they should ensure that any policy passed on board diversity has long-term sustainability and performance considerations for the firm. As it is portrayed by the findings in this study, there is no evidence in the Kenyan context that board diversity has any effect on financial performance. Though financial performance is not the only objective of the firm, it is the primary objective and hence should be carefully considered in any policy making.

Policymakers should also engage in funding research in the field of board diversity and financial performance to ensure that when passing policy in the subject area of board diversity, they use evidence. Further, policy makers should investigate various studies on board diversity to establish the benefits and costs of board diversity to firms so that they can make informed policy and regulations.

5.4.2 Managerial Implications

The recommendations made from these findings is that when selecting boards members, shareholders should consider having a board that is composed of members from different ethnic, cultural, gender and nationalities which is expected to provide a diverse view of issues. However, diversity should not only be considered for its own sake but should be considered on how well it will enhance the board leadership and control role in the firm.

The study also recommends to the shareholders of companies to ensure that demographic diversity is informed by the interests of the companies not just for the sake of having a demographically diverse board. On size, firms should ensure a board of optimum size to enable it to effectively carry out its mandate. This can only be arrived at after careful consideration on what the activities of the boards in the commercial bank are.

5.5 Limitations of the Study

This study applied panel data regression to establish whether age, gender and nationality diversity has significant effect on financial performance of commercial banks. Moreover, the study showed originality by computing a combined score of board diversity by combining the three diversity measures into a single score. The study however, established that neither gender, nationality nor the combined diversity score had any significant effect on financial performance. However, the study findings may have the following limitations.

First, though the study applied various control variables to reduce the effect of extraneous variables, there might be some other extraneous variables such as

management efficiency, liquidity levels, financial leverage and other such variables which were not controlled in the study.

The study also noted that there was very little diversity on gender, age and nationality. Most of the commercial banks had less than 20% female representation in the board. This trend was also reflected in the low inclusion of young directors and directors from other nationalities other than Kenya. The lack of diversity in the boards of the commercial banks may hence not reflect in the financial performance as most of them had similar low levels of diversity.

5.6 Suggestions for Further Research

This study investigated the effect of gender, nationality and age diversity on the financial performance of commercial banks in Kenya. The study related board diversity in each year with financial performance of the same year. However, board diversity may have a lagged effect on financial performance such that the financial performance implications of a diverse board in the current year may be felt in two or three years. This is because some of the investments and strategies that a board implements may have returns not necessarily in the current year but in two or more years in the future. For future studies, a recommendation is provided that for future studies, lagged effect of board diversity on financial performance should be explored. Moreover, such future studies should also apply data for more than five years to provide more observations for credible and valid findings. Lastly, the study recommendations other studies to be conducted in the non-financial sector firms.

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APPENDICES

Appendix I: Data collection Sheet

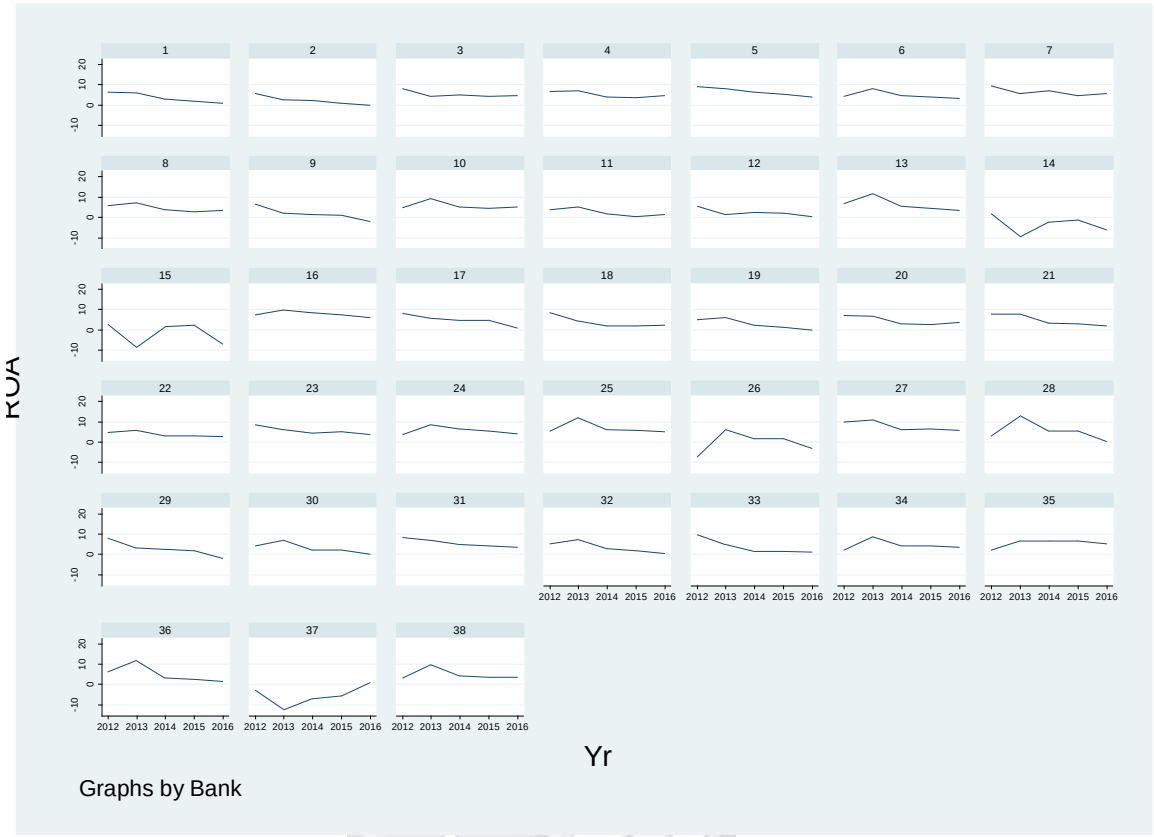
Yr	Women in board	Board size	Members aged less than 50	Foreign members	Value of assets	Total loans	NPLs	Total deposits	Total capital	Market value of assets at year end
2012										
2013										
2014										
2015										
2016										

Appendix II: List of Commercial Banks in Kenya

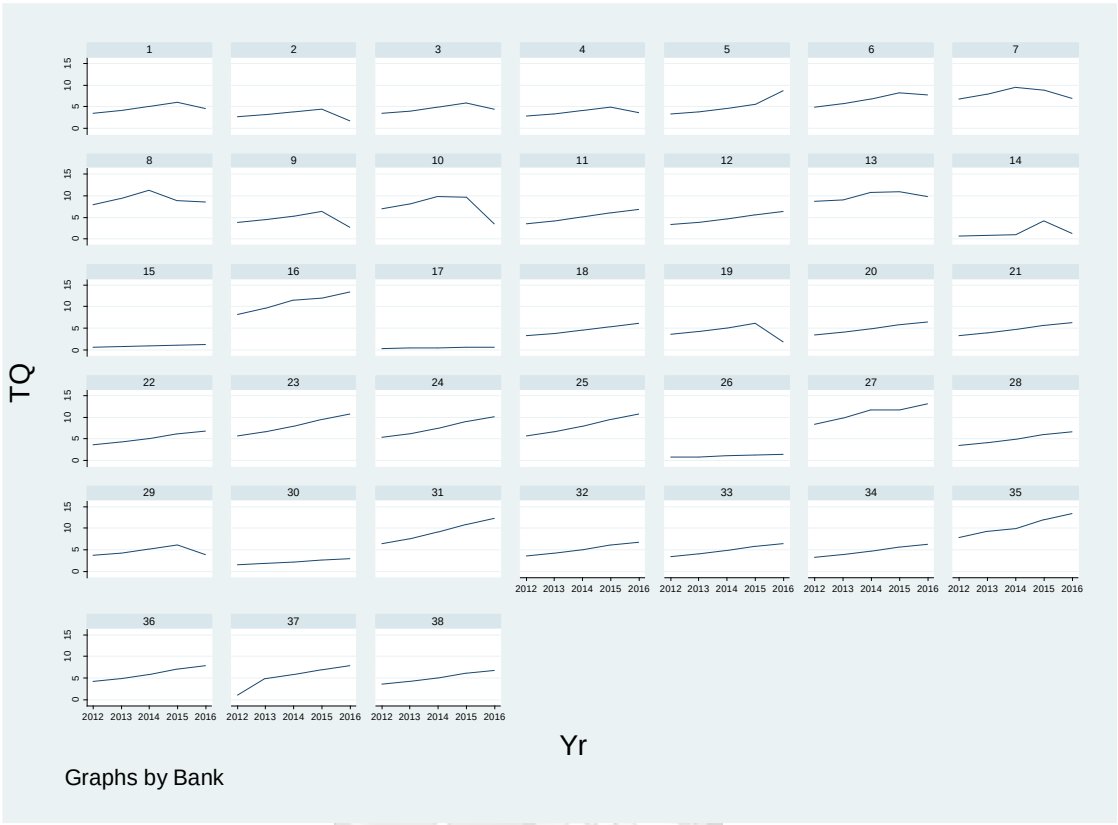
1. ABC Bank Kenya
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank of Kenya
6. Citibank
7. Commercial Bank of Africa
8. Consolidated Bank of Kenya
9. Cooperative Bank of Kenya
10. Credit Bank
11. Development Bank of Kenya
12. Diamond Trust Bank
13. Ecobank Kenya
14. Equity Bank
15. Family Bank
16. Fidelity Commercial Bank Limited
17. First Community Bank
18. Giro Commercial Bank
19. Guaranty Trust Bank Kenya
20. Guardian Bank
21. Gulf African Bank
22. Habib Bank
23. Habib Bank AG Zurich
24. Housing Finance Company of Kenya
25. I&M Bank
26. Jamii Bora Bank
27. Kenya Commercial Bank
28. Middle East Bank Kenya
29. National Bank of Kenya
30. NIC Bank
31. Oriental Commercial Bank
32. Paramount Universal Bank
33. Prime Bank (Kenya)
34. Sidian Bank
35. Spire Bank
36. Stanbic Bank Kenya
37. Standard Chartered Kenya
38. Trans National Bank Kenya
39. United Bank for Africa
40. Victoria Commercial Bank

Source: CBK (2017)

Appendix III: Growth Plot of Each Commercial Bank's ROA



Appendix IV: Growth Plot of Each Commercial Bank's Tobin's Q



Appendix V: Secondary data used in the Study

Bank	Year	Board Size	Nonexec	Female	Nonkenyan	Below50	Tobin's Q	LogDeposits	CAR	Asset Quality	Logassets	ROA
1	2012	8	7	2	2	3	6.37414	7.09783	0.141648	0.070978	7.28492	0.922799
1	2013	8	7	2	2	3	6.39867	7.32236	0.142193	0.071224	7.30945	1.9964
1	2014	8	7	3	2	3	6.51543	7.73912	0.144787	0.072391	7.42621	3.00543
1	2015	8	7	1	2	3	6.573	7.59669	0.146067	0.072967	7.48378	6.07396
1	2016	8	7	2	1	2	6.69675	7.42044	0.148817	0.074204	7.60752	6.48582
2	2012	11	9	5	3	4	7.53412	8.25781	0.167425	0.082578	8.4449	-0.03723
2	2013	11	9	5	2	4	7.64592	8.36961	0.169909	0.083696	8.55669	0.905347
2	2014	11	9	5	2	4	7.70556	8.42925	0.271235	0.084293	8.61634	2.20783
2	2015	11	9	6	1	3	7.74046	8.96415	0.27201	0.084641	8.65123	2.65998
2	2016	11	9	6	2	3	7.75616	8.47985	0.172359	0.084798	8.66693	5.72672
3	2012	8	6	1	0	2	6.67825	7.40194	0.148405	0.074019	7.58902	4.678234
3	2013	8	6	0	0	2	6.83271	7.5564	0.151838	0.075564	7.74348	4.27927
3	2014	8	6	0	0	2	6.84271	7.5664	0.15206	0.075664	7.75349	4.95283
3	2015	8	6	1	0	2	6.8702	7.59389	0.192671	0.075939	7.78098	4.44976
3	2016	8	6	1	0	1	6.88831	7.612	0.153074	0.07612	7.79909	8.27081
4	2012	9	8	3	1	3	7.16174	7.18543	0.15915	0.072167	8.07251	4.57824
4	2013	9	8	2	1	2	7.2062	7.92989	0.180138	0.072574	8.11698	3.54097
4	2014	9	8	1	2	2	7.24926	7.97295	0.161095	0.072968	8.16003	4.08362
4	2015	9	8	2	2	2	7.28566	8.00935	0.161904	0.073302	8.19644	7.16817
4	2016	9	8	2	2	2	7.35104	8.07473	0.163356	0.0739	8.26182	6.70367
5	2012	7	6	0	0	3	6.72482	7.44851	0.14944	0.068169	7.63559	4.02823
5	2013	7	6	0	0	2	6.83173	7.25542	0.151816	0.069147	7.7425	5.33389
5	2014	7	6	1	0	2	6.91773	7.64142	0.153727	0.069934	7.82851	6.34963
5	2015	7	6	1	0	1	6.99069	7.71438	0.155349	0.135927	7.90146	8.13535
5	2016	7	6	1	0	1	7.11637	7.84006	0.118142	0.138142	8.02715	9.03852
6	2012	6	5	0	0	1	6.24161	6.8653	0.138702	0.122729	7.15239	3.37452
6	2013	6	5	0	0	1	6.35302	7.07671	0.141178	0.124692	7.2638	4.00324
6	2014	6	5	0	0	0	6.4297	7.45339	0.122882	0.126043	7.34047	4.6035
6	2015	6	5	0	0	0	6.52113	7.24482	0.144914	0.127654	7.43191	8.15554
6	2016	6	5	0	0	0	6.5745	7.29819	0.1461	0.128594	7.48528	4.33406
7	2012	10	7	1	1	2	6.2569	6.98059	0.119042	0.122998	7.16768	5.849243
7	2013	10	7	1	2	2	6.3243	7.04799	0.14054	0.124186	7.23508	4.75128
7	2014	10	8	2	2	1	6.39564	7.11933	0.142125	0.125443	7.30642	6.9962
7	2015	10	8	2	2	1	6.45144	7.17513	0.113365	0.126426	7.36221	5.65299
7	2016	8	6	2	1	2	6.54079	7.46448	0.145351	0.128	7.45157	9.31098
8	2012	10	8	2	0	4	5.32282	6.04651	0.118285	0.10654	6.2336	3.025636
8	2013	10	8	2	0	4	5.33913	6.06282	0.178647	0.106827	6.24991	2.93284
8	2014	11	9	2	0	4	5.3881	6.11179	0.119735	0.10769	6.29887	3.89237
8	2015	11	9	3	0	4	5.75245	6.37614	0.127832	0.11411	6.66323	7.08093
8	2016	11	9	3	0	4	5.69172	6.41541	0.156483	0.113039	6.6025	5.73137
9	2012	10	9	0	0	3	5.25495	5.97864	0.116777	0.105344	6.16573	-1.99092

9	2013	10	9	0	0	4	5.24363	5.96732	0.126525	0.059673	6.1544	1.05282
9	2014	10	9	0	0	4	5.34627	6.06996	0.118806	0.0607	6.25705	1.57591
9	2015	10	9	0	0	4	5.38672	6.21041	0.119705	0.061104	6.2975	2.03508
9	2016	10	9	0	0	3	5.41809	6.14178	0.120402	0.061418	6.32887	6.43796
10	2012	9	6	1	1	2	5.83211	6.7558	0.129603	0.065558	6.74289	5.15092
10	2013	9	6	1	1	2	5.91872	6.64241	0.141527	0.066424	6.8295	4.4654
10	2014	9	6	2	1	1	5.97887	6.70256	0.132864	0.067026	6.88965	5.0153
10	2015	9	6	2	1	1	6.04441	6.7681	0.13432	0.067681	6.95519	9.18018
10	2016	9	6	3	0	0	6.10289	6.82658	0.13562	0.068266	7.01367	4.70509
11	2012	12	9	3	0	2	6.70014	7.52383	0.168892	0.074238	7.61092	1.39254
11	2013	12	9	3	2	2	6.72673	7.45042	0.149483	0.0736	7.6375	0.293593
11	2014	13	10	4	2	3	6.77504	7.49873	0.150556	0.074078	7.68582	1.60992
11	2015	13	10	4	2	3	6.82867	7.55237	0.151748	0.074608	7.73945	5.0436
11	2016	13	10	4	2	3	6.86743	7.59112	0.162609	0.07499	7.7782	3.80285
12	2012	5	4	1	0	1	4.83061	5.7543	0.147347	0.054869	5.74138	0.309248
12	2013	5	4	1	0	1	4.87983	5.60352	0.118441	0.055355	5.7906	2.26426
12	2014	5	4	1	0	1	4.92904	5.85273	0.129534	0.055842	5.83982	2.3155
12	2015	5	4	0	0	2	4.97826	5.70195	0.110628	0.056328	5.88904	1.56301
12	2016	5	4	0	0	2	5.02748	5.75117	0.131722	0.056814	5.93826	5.46512
13	2012	10	7	4	0	4	6.73049	7.55418	0.149566	0.073638	7.64126	3.092364
13	2013	10	7	4	0	4	6.77722	7.50091	0.160605	0.120015	7.688	4.56408
13	2014	10	7	3	0	4	6.78426	7.40795	0.150761	0.120127	7.69503	5.40439
13	2015	10	7	3	0	3	6.82519	7.54888	0.151671	0.120782	7.73596	11.7633
13	2016	10	7	3	0	3	6.85549	7.57918	0.152344	0.121267	7.76627	6.77762
14	2012	12	11	4	1	4	6.29873	7.32242	0.139972	0.112359	7.20951	-6.09231
14	2013	12	11	4	1	4	6.39029	7.11398	0.152006	0.113824	7.30106	-1.13605
14	2014	12	11	4	1	4	6.40923	7.13292	0.142427	0.114127	7.32001	-2.46743
14	2015	11	10	5	1	3	6.48298	7.30667	0.144066	0.115307	7.39375	-9.31035
14	2016	11	10	5	0	3	6.56593	7.28962	0.159096	0.116634	7.47671	1.78461
15	2012	12	11	4	3	2	6.06272	6.88641	0.134727	0.108583	6.9735	-7.01091
15	2013	12	11	4	4	2	6.08924	6.81293	0.135316	0.096744	7.00002	2.33179
15	2014	12	11	3	4	2	6.161	6.88469	0.136911	0.097763	7.07178	1.53744
15	2015	12	11	3	5	1	6.10962	6.93331	0.135769	0.097033	7.0204	-8.59806
15	2016	12	11	4	5	1	6.15101	6.8747	0.136689	0.097621	7.06179	2.45937
16	2012	8	7	3	3	1	7.53152	8.25521	0.167367	0.117224	8.4423	6.05628
16	2013	8	7	2	3	1	7.61383	8.33752	0.169196	0.118393	8.5246	7.40022
16	2014	8	7	2	2	2	7.70351	8.4272	0.171189	0.119666	8.61429	8.42526
16	2015	8	7	2	2	2	7.72231	8.546	0.171607	0.119933	8.63309	9.76353
16	2016	8	7	2	3	2	7.74317	8.46686	0.17207	0.120229	8.65395	7.36633
17	2012	8	6	1	0	1	5.46587	6.18956	0.121464	0.087892	6.37665	0.90921
17	2013	8	6	1	0	1	5.87895	6.60264	0.130643	0.093757	6.78973	4.46698
17	2014	8	6	1	0	1	5.79552	6.51921	0.128789	0.12204	6.7063	4.78097
17	2015	8	6	2	0	1	5.80003	6.52372	0.12889	0.122124	6.71081	5.72979
17	2016	8	6	2	0	2	5.74155	6.46524	0.12759	0.121029	6.65233	8.03892
18	2012	12	10	3	4	3	5.54798	6.27167	0.123289	0.117406	6.45876	2.29813

18	2013	12	10	3	4	3	5.96106	6.68475	0.132468	0.125139	6.87184	2.03895
18	2014	12	10	2	4	2	5.90467	6.62836	0.131215	0.124083	6.81544	1.73964
18	2015	12	10	2	4	2	5.90917	6.73286	0.131315	0.124167	6.81995	4.22763
18	2016	12	10	2	4	1	5.8507	6.57439	0.130015	0.123072	6.76147	8.48862
19	2012	10	6	2	2	4	5.49683	6.22052	0.122152	0.116448	6.40761	-0.21658
19	2013	10	6	3	3	4	5.90991	6.6336	0.131331	0.124181	6.82069	1.0991
19	2014	10	6	2	3	3	5.85351	6.6772	0.130078	0.123125	6.76429	2.14595
19	2015	10	6	2	3	3	5.87367	6.59736	0.130526	0.123503	6.78445	6.09058
19	2016	10	6	2	2	2	5.81519	6.53888	0.129227	0.122408	6.72597	5.10887
20	2012	8	6	3	0	1	5.88966	6.61335	0.130881	0.075392	6.80044	3.0827
20	2013	8	6	3	0	1	5.93542	6.45911	0.131898	0.075914	6.8462	2.65191
20	2014	8	6	2	0	0	5.98118	6.70487	0.132915	0.076435	6.89195	2.75955
20	2015	8	6	2	0	0	6.0305	6.75419	0.134011	0.076998	6.94128	6.73864
20	2016	8	6	2	0	1	6.08741	6.8111	0.135276	0.077646	6.99818	7.14039
21	2012	12	11	5	2	1	6.45488	7.17857	0.143442	0.081836	7.36566	2.00915
21	2013	12	11	5	2	3	6.50064	7.22433	0.144459	0.082357	7.41142	3.02569
21	2014	12	11	6	3	3	6.5464	7.27009	0.145476	0.082879	7.45718	3.10285
21	2015	12	11	6	3	3	6.59216	7.31585	0.146492	0.083401	7.50293	7.60773
21	2016	12	11	6	3	3	6.63791	7.3616	0.147509	0.083922	7.54869	7.68378
22	2012	12	11	4	1	4	5.79437	6.21806	0.128764	0.074306	6.70514	2.77688
22	2013	11	10	4	1	4	5.92192	6.64561	0.131598	0.07576	6.83269	3.02781
22	2014	10	9	4	0	3	5.98573	6.70942	0.133016	0.076487	6.89651	2.97199
22	2015	12	11	4	1	3	6.10864	6.83233	0.135748	0.077889	7.01942	5.66313
22	2016	11	10	4	1	3	6.26149	6.58518	0.139144	0.079631	7.17226	4.81223
23	2012	9	7	2	0	1	5.72735	6.45104	0.127274	0.080638	6.63812	3.66565
23	2013	8	6	1	0	1	5.86756	6.59125	0.13039	0.082391	6.77834	5.10395
23	2014	9	7	1	0	1	5.89921	6.6229	0.131094	0.082786	6.80999	4.26188
23	2015	9	7	1	0	2	5.9931	6.81679	0.13318	0.08396	6.90387	6.01063
23	2016	9	7	1	0	2	6.0587	6.78239	0.134638	0.08478	6.96947	8.49566
24	2012	8	6	1	0	2	5.823	6.54669	0.1294	0.081834	6.73378	3.90024
24	2013	8	6	1	0	2	5.9624	6.48609	0.132498	0.083576	6.87318	5.36827
24	2014	8	6	1	0	3	6.13008	6.85377	0.136224	0.085672	7.04086	6.39925
24	2015	8	6	0	0	3	6.17711	6.9008	0.137269	0.08626	7.08789	8.62133
24	2016	8	6	0	0	3	6.30813	7.03182	0.140181	0.087898	7.2189	3.63409
25	2012	9	7	3	2	1	6.14979	6.87348	0.136662	0.085919	7.06057	5.98127
25	2013	9	7	3	2	1	6.31396	7.03765	0.14031	0.087971	7.22473	5.86372
25	2014	9	7	3	2	1	6.3785	7.30219	0.141744	0.088777	7.28928	6.24347
25	2015	9	7	3	2	2	6.43392	7.15761	0.142976	0.08947	7.3447	12.0763
25	2016	9	7	2	2	3	6.52596	7.24965	0.145021	0.090621	7.43674	5.47764
26	2012	10	9	3	3	4	6.42947	7.15316	0.142877	0.089415	7.34025	-3.10912
26	2013	10	9	3	3	4	6.47869	7.40238	0.143971	0.09003	7.38947	1.58684
26	2014	10	9	4	3	4	6.52791	7.2516	0.145065	0.090645	7.43868	1.74414
26	2015	10	9	3	3	5	6.57713	7.30082	0.146158	0.09126	7.4879	6.06267
26	2016	10	9	2	3	4	6.62634	7.65003	0.147252	0.091875	7.53712	-7.15591
27	2012	8	7	2	0	3	6.47523	7.19892	0.143894	0.089986	7.38601	5.19864

27	2013	8	7	1	0	3	6.52445	7.24814	0.144988	0.090602	7.43522	6.33936
27	2014	8	7	1	0	4	6.57366	7.79735	0.146081	0.091217	7.48444	6.0403
27	2015	8	7	1	0	4	6.62288	7.34657	0.147175	0.091832	7.53366	10.7238
27	2016	8	7	1	0	4	6.6721	7.39579	0.148269	0.092447	7.58288	9.93938
28	2012	8	7	1	0	1	6.73221	7.4559	0.149605	0.093199	7.64298	0.6513
28	2013	9	7	1	0	1	6.80115	7.52484	0.151137	0.094061	7.71193	5.54252
28	2014	9	7	2	0	1	6.83581	7.5595	0.151907	0.094494	7.74659	5.35282
28	2015	9	7	1	0	2	6.95578	7.67947	0.154573	0.095993	7.86656	12.8309
28	2016	9	7	1	0	1	6.96842	7.69211	0.154854	0.096151	7.8792	2.98615
29	2012	7	5	0	2	0	7.04055	7.76424	0.156457	0.097053	7.95132	-1.90913
29	2013	7	5	0	2	0	7.09339	7.81708	0.157631	0.097713	8.00416	1.77734
29	2014	7	5	0	2	0	7.18775	7.81144	0.159728	0.098893	8.09852	2.52128
29	2015	7	5	1	2	1	7.22757	7.95126	0.160613	0.099391	8.13834	3.18387
29	2016	7	5	1	2	1	7.26896	7.99265	0.161532	0.149463	8.17974	7.97213
30	2012	10	8	3	0	4	6.29829	7.02198	0.139962	0.131311	7.20907	0.17614
30	2013	10	8	3	0	4	6.39299	7.11668	0.142066	0.133082	7.30377	2.04287
30	2014	10	8	3	0	4	6.53594	7.25963	0.145243	0.135755	7.44672	2.23485
30	2015	10	8	2	0	4	6.627	7.35069	0.147267	0.137458	7.53778	6.83441
30	2016	10	8	3	0	5	6.75391	7.7776	0.150087	0.139831	7.66469	4.23647
31	2012	12	11	4	0	3	6.7173	7.44099	0.149273	0.139146	7.62807	3.66
31	2013	12	11	3	0	4	6.78	7.50369	0.150667	0.140319	7.69077	4.36186
31	2014	12	11	4	0	4	6.87458	7.59827	0.152769	0.142088	7.78536	5.048
31	2015	12	11	4	0	4	6.8866	7.61029	0.153036	0.142312	7.79738	6.94361
31	2016	12	11	4	0	3	7.0325	7.75619	0.156278	0.145041	7.94328	8.26878
32	2012	8	7	1	3	2	7.47321	8.47041	0.166071	0.158397	8.6575	0.309126
32	2013	8	7	1	3	2	7.50042	8.49762	0.166676	0.158905	8.6847	1.89197
32	2014	8	7	1	3	2	7.54134	8.53854	0.167585	0.159671	8.72562	2.9692
32	2015	8	7	1	3	3	7.5974	8.5946	0.168831	0.160719	8.78169	7.30339
32	2016	8	7	2	3	3	7.64642	8.64362	0.169921	0.161636	8.83071	5.28434
33	2012	11	8	2	1	3	5.57246	6.29615	0.123832	0.117738	6.48323	1.11091
33	2013	11	8	2	1	3	5.85097	6.57466	0.130022	0.122946	6.76175	1.34965
33	2014	11	8	2	2	2	5.91485	6.63854	0.131441	0.124141	6.82563	1.36088
33	2015	11	8	2	2	2	6.06567	6.78936	0.134793	0.126961	6.97644	4.95286
33	2016	11	8	2	2	2	6.16473	6.88842	0.136994	0.128813	7.0755	9.54477
34	2012	6	5	1	0	1	5.76756	6.49125	0.128168	0.121386	6.67834	3.87657
34	2013	6	5	1	0	1	5.95724	6.68093	0.132383	0.065473	6.86802	4.17828
34	2014	6	5	1	0	1	6.02091	6.7446	0.133798	0.066097	6.93169	4.10743
34	2015	6	5	2	0	0	6.13112	6.85481	0.136247	0.067177	7.0419	8.68187
34	2016	6	5	2	0	0	6.22807	6.95176	0.138401	0.068127	7.13884	2.28593
35	2012	6	4	1	0	2	5.99891	6.7226	0.133309	0.065882	6.90969	5.9011
35	2013	6	4	1	0	2	6.15542	6.87911	0.136787	0.067415	7.0662	6.47119
35	2014	6	4	1	0	1	6.27198	6.99568	0.139377	0.068558	7.18276	6.48607
35	2015	6	4	0	0	1	6.3908	7.11449	0.142018	0.069722	7.30158	6.56827
35	2016	6	4	0	0	0	6.42406	7.14775	0.142757	0.070048	7.33484	2.10174
36	2012	9	8	0	2	3	5.70906	6.43275	0.126868	0.063041	6.61984	1.52093

36	2013	9	8	0	2	3	5.84846	6.57215	0.129966	0.064407	6.75924	2.5732
36	2014	9	8	0	3	2	6.01614	6.73983	0.133692	0.06605	6.92691	3.23712
36	2015	9	8	0	3	2	6.06317	6.78686	0.134737	0.066511	6.97394	11.6365
36	2016	9	8	0	3	1	6.18033	6.90402	0.137341	0.084737	7.0911	6.18948
37	2012	8	7	1	1	1	6.27626	6.99995	0.139472	0.115499	7.18704	0.85649
37	2013	8	7	1	1	2	6.28582	7.00951	0.139685	0.115657	7.1966	-5.53582
37	2014	8	7	1	1	1	6.36137	7.08506	0.141364	0.116904	7.27215	-6.83618
37	2015	8	7	2	2	1	6.44157	7.16526	0.143146	0.118227	7.35234	-12.3043
37	2016	8	7	2	2	0	6.57433	7.29802	0.146096	0.120417	7.4851	-2.8814
38	2012	8	6	2	0	2	6.67307	7.39676	0.14829	0.122047	7.58385	3.51765
38	2013	8	6	1	0	3	6.71883	7.44252	0.149307	0.122802	7.62961	3.43957
38	2014	8	6	1	0	3	6.85952	7.58321	0.152434	0.125123	7.7703	4.37641
38	2015	8	6	2	0	2	6.90837	7.63206	0.153519	0.125929	7.81915	9.85282
38	2016	8	6	2	0	1	7.02454	7.74823	0.156101	0.127846	7.93532	3.24928