

**EFFECT OF BOARD OF DIRECTORS DIVERSITY ON STOCK LIQUIDITY
OF LISTED FIRMS AT THE NAIROBI SECURITIES EXCHANGE, KENYA**

BY

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DECLARATION

Declaration by Candidate

This thesis is my original work and has not been studied for or applied for a Master's degree award at any other higher learning institution to the best of my knowledge. Without prior written permission of the author and/or Moi University, no part of this thesis may be reproduced.

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DEDICATION

This research thesis is dedicated first to God for the strength He gave me to carry on and my family for their assistance and encouragement throughout the period of undertaking it.

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ABSTRACT

Stock liquidity is an important phenomenon since stock price and trading volume influences how the firm is seen by its partners. Nonetheless, the quantities of organizations that experience the ill effects of money related pain have expanded throughout the years. Despite emphasis by regulators that listed firms must practice good corporate governance firms still encounter stock liquidity problems, as business success depend heavily on the ability of financial managers and the stakeholders in the execution of business operations. Thus, this research examined the effect of board diversity on stock liquidity of firms listed at the Nairobi Securities Exchange. The study specific objectives were to determine the effect of board nationality diversity on stock liquidity of listed firms, establish the effect of board age diversity on stock liquidity of listed firms, to establish the effect of board gender diversity on stock liquidity of listed firms and to establish the effect of board education diversity on stock liquidity of listed firms. The study was informed by Agency Theory and Upper Echelons Theory. This study used a combination of explanatory and longitudinal research design. The target population comprised 62 firms listed in Nairobi stock exchange Nairobi Security Exchange. A census approach was used to select the 40 firms for the 10 years listed in NSE Kenya giving 400 firm-yearly data formed the sample size for the period 2008-2018. The data collection instrument used was content/document analysis guide. Both descriptive and inferential statistics were used to analyze data. Inferential statistics are closely tied to the logic of hypothesis testing discussed. Panel data was analyzed using random effects model (REM). Findings showed that board gender diversity ($\beta_3 = 0.136$, p-value = $0.000 < \alpha = 0.000$) and board education diversity ($\beta_4 = 0.102$, p-value = $0.000 < \alpha = 0.000$) have a positive and significant effect on firm stock liquidity. However, board nationality ($\beta_1 = 0.064$, p-value = $0.116 > \alpha = 0.05$) and board age diversity ($\beta_2 = 0.0304$, p-value = $0.136 > \alpha = 0.5$) have no significant effect on stock liquidity. The results showed that board nationality diversity and board age diversity explained 30.65% variation in stock liquidity that ($R\text{-sq}=0.3065$).The study concluded firms with higher board gender diversity and board education diversity increase stock liquidity. Therefore, in order to increase stock liquidity, it is important to include women and men in the board but in an equal proportion, it is also extremely necessary for companies to select directors of different educational levels in equal proportions. Additionally, the inclusion of board members with varying levels of education and experience enhance stock liquidity.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT.....	v
TABLE OF CONTENTS.....	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
OPERATIONAL DEFINITION OF TERMS	xi
ABBREVIATIONS & ACRONYMS.....	xiii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Overview	1
1.2 Background of the Study	1
1.2.1 Nairobi Securities Exchange.....	5
1.3 Statement of the Problem.....	6
1.4 General Objective	7
1.4.1 Specific Objective.....	8
1.5 Research Hypotheses	8
1.6 Significance of the Study	8
1.7 Scope of the Study	10
CHAPTER TWO	11
LITERATURE REVIEW	11
2.1 Introduction.....	11
2.2 Concept of Stock Liquidity	11
2.3 Concept of Board Diversity	12
2.4 Board Nationality Diversity and Stock Liquidity	14
2.5 Board Age Diversity on Stock Liquidity	19
2.6 Board Gender Diversity and Stock Liquidity	21
2.7 Board Education Diversity and Stock Liquidity	26
2.8 Theoretical Framework.....	29
2.8.1 The Principal-Agent Theory	29
2.8.2 Upper Echelons Theory	30
2.9 Conceptual Framework.....	32
CHAPTER THREE	33
RESEARCH DESIGN AND METHODOLOGY	33

3.1 Introduction.....	33
3.2 Research Design.....	33
3.3 Target Population.....	34
3.4 Inclusion and Exclusion Criteria.....	34
3.5 Data Collection Instruments	34
3.6 Measurement of Variables	35
3.7 Data Analysis and Presentation	36
3.7.1 Model specification.....	36
3.8 Assumptions of the Model	38
3.8.1 Multicollinearity	39
3.8.2 Heteroscedasticity	39
3.8.3 Autocorrelation	39
3.8.4 Normality Test	40
3.9 Ethical Issues	40
3.10 Limitations of the Study.....	41
CHAPTER FOUR.....	42
RESULTS AND DISCUSSIONS	42
4.0 Introduction.....	42
4.1 Descriptive Statistics.....	42
4.2 Assumptions.....	43
4.2.1 Heteroschadasticity	44
4.2.2 Unit Root Test.....	44
4.2.3 Autocorrelation	45
4.2.4 Test For Multicollinearity	45
4.2.5 Test for normality	46
4.3 Correlation	47
4.4 Fixed and Random Models	48
4.4.1 Fixed Effect Model	49
4.4.2 Random Effect Model.....	50
4.4.3 Housman test.....	51
4.5 Test of Hypotheses.....	53
CHAPTER FIVE	57
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS OF THE STUDY	57
5.0 Introduction.....	57
5.1 Summary of the Findings.....	57
5.2 Conclusion	58

5.3 Recommendations.....	61
5.4 Suggestions for Future Research	62
REFERENCES	64
APPENDICES	82
Appendix I: Data Collection Sheet	82

LIST OF TABLES

Table 4.1: Descriptive statistics	42
Table 4.2: Test for Heteroscedasticity	44
Table 4.3: Wooldridge test for autocorrelation for autocorrelation	45
Table 4.4: Testing for Collinearity	46
Table 4.5: Jarque-Bera test	47
Table 4.6: Correlation analysis	48
Table 4.7: Fixed model	50
Table 4.8: Random effect	51
Table 4.9: Housman test	52

LIST OF FIGURES

Figure 2.1: Conceptual Framework32

OPERATIONAL DEFINITION OF TERMS

- Age Diversity:** Age diversity according to Dagsson, (2011) and McIntyre *et al.*, (2007) is standard deviation of ages of all the board members. In this study, it will refer to the standard deviation of the ages of all board members, as the study is concerned with the distribution of the ages of directors, rather than the spectrum between the youngest and the oldest.
- Board Diversity:** Cimerovaa, Dodd, and Frijnsa, (2014) defines Diversity of boards as age, ethnicity, gender, religion, culture and religion, education and history of board members in a business. Board diversity in the current study will refer to age, gender, education and nationality diversity of board directors of firms listed in NSE.
- Board of Directors:** A body of elected or designated members jointly overseeing the operations of a company (Carver, 2011).
- Corporate Governance:** defined as the process and structure used to direct and manage business affairs of the company towards enhancing prosperity and corporate accounting with the ultimate objective of realizing shareholder ultimate value while taking into account the interests of other stakeholders

- Educational Diversity:** Could be described as distinct task-related skills, expertise, and skills that team members possess as a function of their background in education (Dahlin, 2005). In this study, it will refer to the standard deviation of the proportion of board directors with a certificate, diploma, degree, masters and Ph.D. degrees.
- Gender Diversity:** The proportion of men and women in a board is gender diversity (Erhardt, 2003; Marinova, 2010; Rose, 2007). In this study, it will refer to the standard deviation of proportion of women and men in the board.
- Nationality Diversity** Is the percentage of international board managers (Randoy, 2006). In this research, it will refer to the board's standard deviation of proportion of local and foreign directors.
- Stock liquidity:** is described as the level to which a security or an asset can be purchased or sold in financial markets, without significantly affecting its price

ABBREVIATIONS & ACRONYMS

CBK	Central Bank of Kenya
CEO	Chief Executive Officer
CG	Corporate Governance
CGQ	Corporate Governance quality
CMA	Capital Markets Authority
FEM	Fixed Effect Model
IRA	Insurance Regulatory Authority
NSE	Nairobi Security Exchange
RBA	Retirement Benefits Authority
REM	Random Effects Model
SASRA	Sacco Societies Regulatory Authority

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter presents the background of the study, the statement of the problem, the objectives of the study, the significance of the study and the scope of the study

1.2 Background of the Study

Stock liquidity is an important phenomenon since stock price and trading volume influences how the firm is seen by its partners. These recognitions will impact their buying, supply, or speculation choices, which at last influence the company's income (Aldamen et al., 2018; Nguyen & Muniandy, 2020); Edmans et al., 2013). Loukil (2015) additionally shows that stock liquidity influences corporate budgetary choices by lessening expense of capital and urging access to more subsidies on the capital markets. Therefore, management can institute efficiency enhancing actions that can reverse an increasing trend in liquid stocks.

Stock liquidity is described as the level to which a security or an asset can be purchased or sold in financial markets, without significantly affecting its price (Switzer & Picard, 2016). Stock liquidity is also defined as the extent of trading of a firm's securities. A company's shares/stocks are liquid to the extent that they can be traded quickly (Gyapong et al., 2016: Amihud & Mendelson, 2012). A liquid market gives financial specialists the capacity to exchange stocks rapidly and at negligible cost (Brogaard *et al.*, 2017). Amihud & Mendelson (2012) further indicate that a firm's securities are liquid to the degree they can be traded fast.

The board of management is responsible for decision-making in daily management. The supervisory board is responsible for supervising corporate policies of the board of

management, with the emphasis on identifying structures that align the interests of managers and stakeholder (Khoo, 2012). The quality of their roles of decision-making and supervision can be affected due to gender composition, dispersion of age or other factors within the board of directors, and affect financial stock liquidity (Guest, 2019). In other words, the composition of boards is of vital importance in corporate governance. Due to the vital importance, many firms are beginning to exemplify that diversity in board of directors leads to higher stock liquidity (Carter *et al.*, 2013)

According to Carter *et al.* (2013) some advantages of board diversity include the promotion of a better understanding of the market place, increased capabilities of effective problem solving, and enhancing creativity and innovation. This statement is supported by Arfken *et al.* (2014), who suggest that diverse boards have more effective relationships in a global sense, and it will increase the independency of boards due to the diverse members asking questions that would not come from directors with more traditional backgrounds. In line with resource dependence theory, Agrawal and Knoeber (2001) argue that outside directors with political and legal backgrounds, are more likely to be on boards of firms that do business with governmental firms or have to deal with governmental regulations. They argue that female directors and ethnic minorities with board positions bring along different benefits and resources.

According to an article from 'The Business Times Singapore' (Khoo, 2012), gender diversity is the most visible diversity characteristic in the boardroom. But the issue of board diversity goes way beyond gender, for example business background, ethnicity or culture, industry expertise and age, and even governance experts. Therefore, boards who strive for diversity need to reflect the whole breadth of their stakeholders and

their business environment. Therefore human capital in diverse boards, that is been brought to the firm, should lead to aberrant and idiosyncratic views and backgrounds. According to Akinsulire, (2016) some of the board diversity variables such as are size of board, gender diversity, CEO duality may have direct impact on stock liquidity.

In Europe studies have been conducted on corporate governance and liquidity for instance a study done in France by Karmani, Ajina & Boussaada (2015) noted that a firm with better corporate governance will tend to have more liquid market for its shares. Chung *et al* (2015) further observed that the corporate governance measure adopted by the firms has an impact on the firms' stock liquidity. In Australia Ali, Liu and Su (2013) noted that better governance of firms in the country has resulted in improvement in stock liquidity.

The researchers further noted that given the monitoring nature of corporate governance through quality reporting and mitigation of information asymmetry between various stakeholders and it plays an important role on a firm's stock liquidity (Ali et al, 2013). This observation was collaborated by a similar research done in Ghana by Toryeko and Wereko (2012) who argued that when an organization adopts corporate governance the end result was improvement in performance and protection of various stakeholders' interest which may ensure liquidity and stability of the organization. While, in South Africa, Nguyen & Muniandy (2020) firms with more female or black directors on corporate boards are associated with a higher level of stock liquidity. However, the interaction effect indicates that the positive impact of ethnic diversity on stock liquidity is attenuated with the greater presence of gender diversity.

In Kenya, Outa et al., (2019) showed that independence of directors has no significant influence on stock liquidity of firms listed at the Nairobi securities exchange. However, these studies have ignored issues of board diversity. Thus, this study assessed how board of directors diversity on stock liquidity

In Kenya, Corporate Governance has been defined as the process and structure used to direct and manage business affairs of the company towards enhancing prosperity and corporate accounting with the ultimate objective of realizing shareholder ultimate value while taking into account the interests of other stakeholders (CMA, 2015). Corporate governance in Kenya is mainly informed by the Anglo-US model, which is characterized by ownership by individuals and institutions, as well as, a legal system that defines the rights and responsibilities of stakeholders (Koech, Namusonge, & Mugambi, 2016). The stakeholders in the model include boards of directors, management, shareholders, government agencies (usually regulators), and consultancy firms that provide advice to companies on corporate governance. However, boards of directors, management, and shareholders are the main stakeholders in Kenya. In the banking industry, the Central Bank of Kenya (CBK) and the Capital Markets Authority (CMA) (in the case of publicly traded banks) are also key players since they set and enforce the corporate governance regulations that banks have to adhere to. They also impose disclosure requirements. This includes providing information in the annual bank reports concerning financial performance, composition of the board, and capital structure among others. Corporate governance in Kenya promotes the concept of separation of ownership and control, especially in publicly traded firms. Similarly, CEO duality is not allowed in listed companies (NSE, 2002). Separation of ownership and control often leads to agency costs and conflict of interests between shareholders and management. Thus, boards are usually elected to

act as fiduciaries of shareholders by monitoring and supervising the management. Corporate resolutions that require shareholder approval include, but not limited to appointment of new board members, appointment of external auditors, and raising new capital. Application of these governance strategies, however, varies among private firms. Companies including banks also establish their own internal control mechanisms to mitigate risks and ensure Achievement of corporate objectives such as improvement in firms' stock liquidity.

1.2.1 Nairobi Securities Exchange

In Kenya, the Nairobi Securities Exchange has experienced periods of high and low returns on shareholders investments since it was constituted in 1954. Among other factors such as the prevailing political environments in the economy, the stock market liquidity has been noted to be one of the major causes of variations in stock returns in the NSE. Even though the NSE is in general considered highly liquid market and more active in terms of trades as compared to most of the other markets in East Africa and the sub-Saharan Africa, the low level of securities market liquidity is still considered a huge challenge facing the Kenyan securities market with decreased level of liquidity specifically experienced in the equity and bonds secondary markets (CMA,2015).According to international standards, the Nairobi Securities exchange is smaller in size, has low liquidity levels and high volatility with regards to price and returns. Over the recent years, Kenya's liquidity has been increasing with the bid ask spread decreasing and the trading volumes increasing in the last 10 years (CMA, 2015).

1.3 Statement of the Problem

Liquidity has become a world-wide concern, in particular since the global financial crisis. As such corporate sound financial health is important and good performance is needed to ensure corporate sustainability and growth (Liang & Pathak, 2016). In Kenya, among other factors such as the prevailing political environments in the economy, the stock market liquidity has been noted to be one of the major causes of variations in stock returns in the NSE. Even though the NSE is in general considered highly liquid market and more active in terms of trades as compared to most of the other markets in East Africa and the sub-Saharan Africa, the low level of securities market liquidity is still considered a huge challenge facing the Kenyan securities market with decreased level of liquidity specifically experienced in the equity and bonds secondary markets (CMA, 2015).

According to international standards, the Nairobi Securities exchange is smaller in size, has low liquidity levels and high volatility with regards to price and returns. Over the recent years, Kenya's liquidity has been increasing with the bid ask spread decreasing and the trading volumes increasing in the last 10 years (CMA, 2015). In 2015, the NSE 20 share index recorded a decline of 21.15% from 4,040.75 to close at 3,186.21 points at the closing trading day in December 2016 and 2017, it rose by 16.5% (NSE, 2016; 2017).

This inconsistency in volume traded and 20 share indices is a manifestation that attaining stability in firm value is a challenge in Kenya. The NSE has in the recent past faced severe fluctuation in the market price of shares which has significantly affected the firm value of listed firms which worried investors as the market remained turbulent with stock prices dipping to new levels and as a result, about 13% of

investors exited the market in 2019 leading to a continuous downward trend in the index performance, in 2018, 10 firms issued profit alerts (Wangui, 2019).

Despite emphasis by regulators that listed firms must practice good corporate governance firms still encounter stock liquidity problems, as business success depends heavily on the ability of financial managers and the stakeholders in the execution of business operations (Wamugo *et al.*, 2014).

Locally, various studies have been conducted on stock liquidity; Sitienei (2005) established a positive relationship between stock ownership patterns and stock liquidity on NSE firms for period 2000-2004. Sakwa(2006) the effect of corporate governance practices on stock market liquidity of firms listed at the Nairobi securities exchange. In others studies they evaluated effect of liquidity for instance, Ayako (2005) found out that liquidity had no effects on return while Koech (2012) found a very weak correlation between liquidity and return of stocks listed at the NSE. On the other hand Okanga (2014) found that illiquidity was positively significant to Illiquidity and excess stock return. However, little research has been done on the effect of board of directors' diversity on stock liquidity for firms listed at the NSE. The NSE being an emerging market may have different dynamics as compared to more established markets like the NYSE. This research determined the effect of board diversity on stock liquidity of listed firms in NSE.

1.4 General Objective

The main objective of this study was to establish the effect of board diversity on stock liquidity of listed firms in Nairobi securities exchange.

1.4.1 Specific Objective

- i. To determine the effect of board nationality diversity on stock liquidity of listed firms.
- ii. To determine the effect of board age diversity on stock liquidity of listed firms.
- iii. To establish the effect of board gender diversity on stock liquidity of listed firms.
- iv. To establish the effect of board education diversity on stock liquidity of listed firms

1.5 Research Hypotheses

H₀₁: There is no significant effect of board nationality diversity on stock liquidity of listed firms.

H₀₂: There is no significant effect of board age diversity on stock liquidity of listed firms.

H₀₃: There is no significant effect of board gender diversity on stock liquidity of listed firms.

H₀₂: There is no significant effect of board education diversity on stock liquidity of listed firms.

1.6 Significance of the Study

The study is of great importance to a number of participants, namely; the companies, investors (shareholders), regulators and future researchers and scholars. Firstly, the findings, recommendations and suggestions of this study provides insights on the codes of the best practice that companies listed in the Nairobi Securities Exchange

should develop and implement in order to improve their stock liquidity. The recommendations of the study help improve on their competitive edge; boost reputation and eventually attract investment.

Secondly, the study is also beneficial to the shareholders of the company. This study analyzed the relationship between boards of director's diversity on stock liquidity; hence the findings will help investors to familiarize themselves on best practices that they ought to scrutinize before they make investment decisions.

Thirdly, the study is of great importance to the regulators. Regulators in the context of this study include the Capital Markets Authority (CMA), the Central Bank of Kenya (CBK), Retirement Benefits Authority (RBA), Insurance Regulatory Authority (IRA), Sacco Societies Regulatory Authority (SASRA) and the Nairobi Stock Exchange (NSE). The findings and recommendations of the study enable the regulators to ensure that companies listed in the NSE operate under a regulated framework of boards of director's diversity that is aligned to the international best practices; will identify areas of corporate governance reforms and whether any reforms earlier implemented are working or not.

Fourthly, the recommendations of the study will widely help future researchers and scholars. This study is determining the relationship between the boards of director's diversity and stock liquidity. The study contributes to literature on corporate governance and stock liquidity.

Finally, future scholars benefit from the study since it triggers more research and debate creating a wider avenue for criticism and expansion of knowledge on boards of

director's diversity and stock liquidity in emerging economies particularly in firms listed in the Nairobi Securities Exchange (NSE).

1.7 Scope of the Study

The study only examined the effect of boards of director's diversity on stock liquidity of firms listed at the Nairobi Securities Exchange. The board of director's diversity measures that was investigated in this study includes board nationality diversity, board age diversity, board gender diversity, board education diversity. The study focused on 62 registered firms in Nairobi Securities Exchange between the years 2008 to 2018. The study used secondary data and panel approach as it involved observing a broad cross section of firms over time.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers theoretical literature review, empirical literature review, and conceptual framework of the study.

2.2 Concept of Stock Liquidity

Empirical market microstructure literature suggests alternative ways to measure Stock market liquidity. Chordia and Subrahmanyam (1998) used trading volume to measure liquidity while Datar, Naik and Radcliffe (1998) used turnover. Another widely used measure in recent studies is the “Amihud” liquidity which is defined as the average of daily ratio of volume to absolute return (Upadhyay and Zeng, 2014; Chan et al, 2005). This ratio is proxy for market depth. Gyapong et al., (2016) demonstrated that inverse of this ratio referred as Illiquidity Ratio can be used to measure the price impact. Many of the research studies referred in previous section used bid-ask spread as a measure of liquidity (Kanagaretnam, 2007, Chung, 2010, Chen et.al. 2007).

Stock liquidity is considered as one of the most essential characteristics of market efficiency (Chordia et al., 2008; Atawnah et al., 2018). Hence, stock liquidity has various important implications for firm performance (Fang et al., 2009) and firm innovation (Fang et al., 2014). Given the importance of stock liquidity in the financial markets, it is advantageous to investigate the determinants of stock liquidity after the recent global financial crisis of 2008 (Ahmed and Ali, 2017).

In an order driven market (like India) lack of transaction data do not provide information for measuring bid ask spread. Hence we use the „Illiquidity Ratio“ as proposed by Amihud (2002) and its modified version as proposed by Bortolotti et al.

(2007) to measure the stock liquidity. The stock illiquidity is defined as the average ratio of the daily absolute returns to the (rupee) trading volume of the day. It is the ratio of the return per day to the daily traded volume in rupees. This value is then averaged across the number of trading days in a year to get proxy for stock liquidity. Amihud (2002) says that the ratio is closely related to the Amivest ratio and also follows the Kyle's concept of illiquidity which is the response of price to order flow (Kyle 1985). Marcelo and Quiros, (2006) commented that the Illiquidity Ratio has a strong theoretical appeal and considers it the best proxy for illiquid

Xiong (2016) contends that stock liquidity can handle with data asymmetry by bringing data installed up in stock cost and enhance installment execution affectability and speculation productivity. In this manner, recorded organizations should endeavor to enhance value and capital structure to protect outside investors' advantage and stock liquidity. Tooth et al., (2009) report that securities exchange liquidity improves firm execution because of the input impact. This is on account of exchanging movement influences advertise costs and thus gives criticism from security costs to cash streams (Hirschleifer *et al.*, 2006). Thus, Investors require compensation for holding an illiquid stock that increases the firm's cost of equity, and in turn affects the firm's value (Fang, Noe, & Tice 2016). Given that stock liquidity is crucial for both investors and firms, it is vital to investigate the antecedents of stock liquidity. In particular, this study aimed to assess how board diversity affects stock liquidity.

2.3 Concept of Board Diversity

According to Gompers *et al.*, (2003) good corporate governance influences company's strategic decisions. Kajola (2008) observed that corporate governance is making sure the business is well managed and stakeholder's interest is protected at all

times. There has been a debate with regard to board of directors and governance; a debate that emerged due to changes in corporate governance systems and sheer determination by different scholars to comprehend the diversity of board in shaping the destiny of the firm whether large or small such as stock liquidity . Studies of board diversity build on these insights, positive or negative, and thus take the effects of board diversity on corporate performance to result from changes in board efficacy (Dobbin and Jung, 2011).

In recent years, one issue that has attracted great attention in corporate governance is board diversity (Davies, 2011; Cartel et al., 2003; Rhode & Packel, 2010). Board diversity is broadly classified as demographic diversity (gender, race etc) and cognitive diversity (education, experience) but gender diversity is the focus of most research studies (Erhardt, Werbel, & Shrader, 2003; Kang et al., 2007) . Board diversity refers to differences between board members and has been categorized between demographic dimensions and cognitive dimensions (Erhardt, 2003; Mahadeo et al.,2012). Demographic dimensions are for example age and ethnicity. An example of a cognitive dimension is the educational level. although UK Corporate Governance Code encourages board diversity, the concern for the issue was heightened by the spate of corporate failure around the globe.

As a result, the UK government constituted a committee chaired by Lord Davies on the issue in 2010 and the committee set a target for gender parity of least 25% in favor of women on FTSE 100 boards by 2015. However, Martin, Warren-Smith, Scott and Roper (2008) cautioned that if the rate of progress achieved between 2003-2005 was not improved upon, it would take UK the year 2225 to achieve gender balance on her corporate boards.

Nevertheless, evidence from Sealy and Vinnicombe (2012) showed that female directors on FTSE firms increased to 15% in 2012 from 12.2% in 2009. What benefits has board diversity on firm's performance? Arguing from the microeconomic perspective, Campbell and Minguez-Vera (2008), Kang et al.(2007) and Ferreira (2010) stated that diversity of board is desirable because it will lead to greater knowledge base, creativity, innovation, increase discussion, cross-fertilization of ideas and enhances problem solving and decision making capacity of the board. They argued further that since women control the global consumer spending, diversity in favor of more women on the board may allow for greater market penetration because of greater access to information on market needs and preference.

From ethical point of view, Brammer, Millington and Pavelin (2007) argued that it is wrong for an individual to be excluded from position, which she is qualified to hold on the ground of gender. Other views in favor of board diversity were also expressed in the work of Cartel et al.(2003) and Marimuthu (2008). However, board diversity is not without cost. In summary, Dobbin and Jung (2011) declared that diversity in race and gender to some extent may cause conflict, hinder communication and interfere with cooperation among board members thereby lower performance.

2.4 Board Nationality Diversity and Stock Liquidity

Diversity has become a basis from which companies are taking what they desire and leaving the rest (Reed, 2011). The partial use of the diversity concept has resulted in the formation of a persistent foreigners ceiling in the world. In fact, board diversity is becoming a key issue, and not just as a reflection of the popular demand for more women on boards. The board is increasingly viewed as a collective body representing

key expertise and backgrounds that the company as a whole needs at board level. Larger companies, for example, have appointed international board members from markets that are vital to the company (Virtanen, 2009). Additionally, there are a many potential advantages of foreign board membership. First, with foreigners on the board, a large stock of qualified candidates would be available for the board (with broader industry experience). Second, because of their different backgrounds, foreign members can add valuable and diverse expertise, which domestic members do not possess. Finally, foreign board members can also help assure foreign minority investors that the company is managing professionally in their best interests. On the other hand, opponents to this view argue that foreign board members may be less informed about domestic affairs and therefore, less effective (Ujinwa et al., 2012).

Importantly, European boards are becoming diverse in other ways than gender one in three board members across Europe is foreigner and this group is still growing. As board sizes shrink and companies become more international, individual board members must bring a wider range of skills and experiences to the table. Having an international member on the board is now almost standard: just 12.2% of the companies in Europe had no foreign members on the board. Women board members are even more likely than men to be foreigners. Of women directors across Europe, 34.4% are foreigners (as opposed to 31.5% across both genders), and in some countries (such as Luxembourg and Ireland) all women directors are also foreign directors (Egon Zehnder International, 2012). In the light of new corporate governance developments, foreigners on board become a field of interest for academics and policy-makers (Gorg & Greenaway, 2004). In general, foreign ownership plays a vital role in company performance, particularly in developing economies.

Aydin, Sayim, and Yalama (2007) have concluded that multinational companies have performed better than the domestically owned firms. It is, therefore, not surprising that the last two decades have witnessed increased levels of Foreign Direct Investments in the developing economies. Two main reasons have been put forward to explain the phenomenon of high performance associated with foreign ownership of firms. The first reason is that foreign owners are more likely to have the ability to monitor managers, and give them performance-based incentives, leading the managers to manage more seriously, and avoid behaviors and activities that undermine the wealth creation motivations of the firm owners. The second reason is the transfer of new technology and globally tested management practices to the firm, which helps to enhance efficiency by reducing operating expenses and generating savings for the firm (Ongore & K'Obonyo, 2011).

Diversity of nationality may increase the likelihood of cross-cultural communication problem and interpersonal conflicts which influence stock liquidity decisions. On the other hand, the presence of foreign nationals on the team are expected to bring competitive advantages to the firm in international context (Luo, 2005), namely international networks, commitment to shareholder rights, and managerial entrenchment avoidance. In emerging markets, which enjoy capital inflows from outside their countries, firms with larger foreign shareholdings may have heterogeneous nationality of their board or management team members. Unfortunately, researchers still very rarely observe the relationship between nationality diversity of the board members and firm's financial performance in the emerging market-case scenario.

Evidence of the association between diversity and financial performance by far mostly comes from emerged economies. Results from the previous empirical evidence are ambiguous. Most of the empirical studies have been based on US and UK data, and only from the largest corporations. The results of those studies show mixed conclusions. Empirical research of the nationality composition of boards in Britain shows even less diversity. Only 7% of directors are not British, with just 1% from ethnic minority groups (Burmajster, 2009). Oxelheim and Randoy (2003) explored the effect of foreign board member diversity on liquidity decisions in Norway and Sweden, and the result suggests a significantly higher liquidity decisions for firms with foreign board membership.

Notwithstanding the evidence of advantages and disadvantages of heterogeneous groups, Dowling & Aribi (2012) reveals that the individual characteristics, like nationality, of just one director can influence corporate decision making, and eventually high liquidity decisions. Van Veen and Elbertsen (2008) examined, with sample data of UK, Germany and the Netherlands, the level of nationality diversity of a corporate board as a dependent factor on the liquidity decisions. As a result of global economic forces, the study shows an increase in the diversity of nationalities on corporate boards. It seems that the nationality diversity within the three countries shows substantial differences. Germany shows the lowest proportion of foreigners in corporate boards, UK an intermediate proportion, and the Netherlands the top position. The data analysis demonstrate differences in pace of absorption of foreigners on the corporate boards.

Many scholars, financial analysts, and investors consider an increase in the diversity of nationalities on corporate boards to be better representatives of shareholder

interests than a less diverse nationality (Carter, *et al.*, 2003) and studies have found their relationship to be stronger with overall liquidity decisions (Perry & Shivdasani, 2005) and larger shareholder returns (Shivdasani & Yermack, 1999). Not surprisingly, an increase in the diversity of nationalities on corporate boards comes immediately after a firm performs poorly and they are associated with improved liquidity decisions during periods of corporate restructuring (Perry & Shivdasani, 2005). An increase in the diversity of nationalities on corporate boards has been shown to strongly resist certain actions that may have benefited corporate executives at the expense of shareholders due to have liquidity decisions.

Some researchers believe that nationality diverse corporate boards are better monitors of financial reporting (Klein, 2003) due to the innovative and creative financial techniques employed. For example, firms with a greater proportion of nationality diverse corporate boards tend to have better liquidity decisions (Ashbaugh-Skaife, Collins, & LaFond, 2006).

As the globalization of business increases, foreign investors have opportunities to buy larger stakes in the firm (Oxelheim and Randøy, 2003). In addition, cultural origins of the management team become increasingly diverse. In emerging markets, which enjoy capital inflows from outside their countries, firms with larger foreign shareholdings may have heterogeneous nationality of their board or management team members. Unfortunately, the relationship between nationality diversity of the board members and firm financial performance in the emerging market case is still very rarely observed by researchers.

2.5 Board Age Diversity on Stock Liquidity

Traditionally, most members of corporate boards are mature, experienced, and by default senior directors (Kang et al., 2007). This can be explained by the inherent nature of company management and career evolution, which results in considering retired executives or executives which had a significant work experience in other companies in the same industry as ideal non-executive board members (Gilpatrick, 2000). Still, age diversity on boards helps the company to benefit from the different perspectives of different age groups, and the value of having the perspectives of younger directors on boards is emerging as an aspect of diversity worthy of attention (Walt and Ingley, 2003).

Age diversity on boards encourages board development and learning, which may affect stock liquidity decisions. Mahadeo et al. (2012) found a significant positive relationship between age diversity on board and firm's stock liquidity. They suggest that with age diversity, a board can consider the various strategic and operational aspects in a more effective way. Kang et al. (2007) argue that diversity in age of directors helps the board to bring different perspectives, and for example high stock liquidity. Then, the best way to represent the interest of customers, and increase the customer-board interaction (Huse and Rindova, 2001), would be to have directors from different age groups.

Kang et al. (2007) found that companies in the consumer services and products industry are more likely to appoint directors in a more diverse age range. They conclude that in order to deal with a wide range of customers' needs and interests, boards have an advantage when their directors reflect this age range. Still an age-diverse board needs a division of labour at board level: the older group provides

experience, network, financial resources, the middle-aged group is in charge of the main executive responsibilities, and a younger group develops its knowledge of the business (Mahadeo et al., 2012). Therefore this wider range on business may generate conflicts between generations, and make age differences more visible and difficult to coexist. There is an expectation that most directors are mainly former managers from various companies who are now in the position to sit on other corporations and enjoy their retirement (Kang, 2007), whereas younger people have the energy and the drive to succeed, and plan ahead for the future (Huse, 2007), this might reveal what the author calls the 'downsides' of diversity: difficulties for maintaining cohesion, for coordination, for building a common understanding. These potential generational conflicts or misunderstandings between different interests or expectations might be especially dangerous for organizational change. Thus organizational innovation, which is more 'people-oriented', is impacted by the confrontation of mental and cognitive processes (Torchia et al., 2011).

According to many studies (Carter et al., 2003; Erhardt et al., 2003) this diversity provides the firm with several advantages such as greater creativity, better understanding of the market, effective problem solving and enhanced capability. Thus, board diversity provides high stock liquidity. Resource dependence theorists have argued that the integration of diverse stakeholders into the board helps the organization to acquire critical resources. The promotion of diverse perspectives can produce a wider range of solutions and criteria for strategic decisions, and reduce narrow-mindedness in board proposals (Kang, 2007). If the directors of a board are of the same age group, the leadership and the innovative decision-making styles of the board might be biased towards a particular age segment of the market. This is because the directors may have similar information and experiences. Appointing directors

from different age groups will help the board to tap information from directors who understand better the need and the sensitivity in creativity of the stakeholders in their age group. The board should reflect society which is, in reality, heterogeneous in composition. Interestingly, Carter et al. (2003) find that younger boards are more likely to include female directors than older boards. Hence, younger directors appear to be more open to new innovative approaches as opposed to old directors who might be interested in maintaining the status quo.

2.6 Board Gender Diversity and Stock Liquidity

Gender issues are critical aspects of diversity in organizations, affecting women and men from all races, ethnicities, ages, and abilities. Sexual harassment and discrimination, the wage gap in pay, and sex segregation are recognized as women's concerns. Indeed, these issues constrain women's progress and opportunities in organizations in myriad ways. Even so, although men are significantly less likely to experience these constraints personally, sex discrimination and other gender-based diversity issues also affect them. All men have mothers, wives, daughters, sisters, or female friends; making women's concerns personal for many men as well as for the women they care about (Bell, 2012). Based on interviews and discussions with 50 women directors, 12 CEOs, and 7 corporate secretaries from Fortune 1000 companies, Erkut, Kramer, and Konrad (2008) show that a critical mass of three or more women can cause a fundamental change in the boardroom and enhance corporate governance. For instance, some empirical evidence suggests that women generally are more financially risk averse than men. For that reason, many commentators have speculated that women's increased participation in corporate financial decision-making could have helped to curb tendencies that caused the most recent financial crisis. A widely

discussed panel at a World Economic Forum in Davos put the question: Would the world be in this financial mess if it had been Lehman Sisters? (Rhode & Packel, 2010).

Buse et al. (2016) observe that the effect of ethnic diversity on corporate governance practices is weakened in the presence of higher gender diversity. Hassan and Marimuthu (2018) find that the interaction between gender and ethnic diversity on corporate boards has a negative influence on firm performance.

Nguyen & Muniandy (2020) studied impact of the gender and ethnic composition of corporate boards (board of directors and audit committee) on stock liquidity in the context of South Africa. More specifically, we focus on the interaction effects of gender diversity and ethnic diversity on stock liquidity. Using a sample of listed South African firms for the period 2009–2013, they find that firms with more female or black directors on corporate boards are associated with a higher level of stock liquidity. However, the interaction effect indicates that the positive impact of ethnic diversity on stock liquidity is attenuated with the greater presence of gender diversity

Koellinger, Minniti, and Schade (2008) provide some evidence that, *ceteris paribus*, men and women see the world with different eyes, and perceive the existence of opportunities and their ability to exploit them successfully in very different ways. In other words, their results suggest that men and women perceive and interpret information differently and that, as a result, they make different choices. Across all countries in that article, and consistently with previous studies, men tend to be more optimistic, self-confident, and less deterred by fear of failure than women. They also find some evidence that women who are more self-confident and undeterred by fear of failure have a greater probability to start a business than men with similar

characteristics. One of the most frequently cited examples is that of Nike Corporation, which started to produce a new line of shoes made for women because of having women directors (Huse, 2007).

According to Stuart (2012), companies led by women are more likely to have more women directors on their boards: all 20 had at least two (including the CEO herself) and four had as many as five. In S&P 500 companies led by women, 29% of all directors were women; excluding the CEO, the percentage is 22%. In companies with a male CEO, the average was 17%. Because all of that, gender diversity on board become one of the main spices in corporate governance literature. To increase board effectiveness it may not be enough to simply increase the number of female directors on the board; diverse boards may require additional mechanisms to ensure cooperation between directors (Adams & Ferreira, 2004). A more diverse board could add value by bringing new ideas and different perspectives to the table (Puthenpurackal & Upadhyay, 2013).

Therefore, recent proposals for boardroom reform stress the great importance of gender diversity and female participation in the board. The Higgs Report (2003), for example, points out that although approximately 30% of managers in the UK corporate sector are female; women hold only 6% of non-executive director positions. In addition, women currently hold 5.0 percent of Fortune 500 CEO positions and 5.3 percent of Fortune 1000 CEO positions, compared with 2013 when women held 4.2% of Fortune 500 CEO positions and 4.6% of Fortune 1000 CEO positions (Catalyst, 2014). Moreover, regarding women in the boardroom in 2012, women accounted for just over 17% of independent directors, up from 16% in 2007 and 12% in 2002 of S&P 500 board seats. Nine percent of S&P 500 boards had no women, the same as

2011; however, the average number of women on all boards increased slightly from 1.7 to 1.8. Boards without female representation are most likely to be information technology, energy, or industrial companies. Sixty-one percent of S&P 500 companies had two or more women on the board, up from 55% in 2007 and 38% in 2002. Twenty percent had three or more. The number of women serving as CEOs increased to 20 in 2012, representing 4.1% of the 486 companies in the index. The qualified women are available for board roles. In the past year, even in searches in which clients are not specifically looking for a woman for the board, a female candidate was chosen nearly 20% of the time. During the past five years, one-third of the women that have been recruited for board roles have been top corporate executives, including CEOs, COOs, presidents, or chairwomen. Divisional business leaders and general managers represent another significant source of female director talent (30%), as do finance leaders, bankers, and former audit partners (27%). As companies seek greater integration of digital, social media, and e-commerce into their business models, women are proving to be an important source of director talent, representing 27% of our digital placements. Other sources include former government leaders, academicians.

Gender turns out to be probably the most debated diversity issue in board composition (Huse, 2007; Kang, 2007; Mahadeo et al., 2012). Various quota systems have appeared in legislation over the last years to promote gender diversity in board composition, first in Norway in 2005, and then in other countries like France, Spain, Italy, Netherlands. Thus the gender diversity issue is especially relevant within the recent movement of increasing selection of women on boards. In France, for example, a new law adopted in January 2011 decreed that the proportion of female directors should not be lower than 40 % in all major companies by 2017 (20% by 2014).

Women on boards bring specific perspectives, experiences and working styles in comparison with their male counterparts, they bring different knowledge and expertise (Daily and Dalton, 2003; Hillman et al., 2002; Huse, 2007). This broader range of ideas and perspectives helps to identify new liquidity decisions opportunities (Miller and Triana, 2009). Thus, the study can thus expect that the presence of women on boards may contribute positively to firm innovation: women directors bring to the board different values (Selby, 2000) and different expertise that may positively influence the level of innovation (Torchia et al., 2011). This specific expertise and knowledge may contribute to broaden the range of new products and services. Diversity in characteristics such as gender has cognitive consequences: a broader range of ideas, as well as an increased number of ideas.

Gender diversity thus may contribute to stock liquidity, as more diverse ideas, in their number and in their diversity, may increase the likelihood to introduce stock liquidity. In their study of the relationship between employee diversity and stock liquidity, Østergaard et al. (2011), found a positive relationship between gender diversity and the likelihood to have high stock liquidity. This suggests that gender diversity on boards is positively related to firm's product innovation.

According to Kang et al. (2007), women on boards may have a better understanding of consumer behaviour, the customer needs, and opportunities for companies in meeting those needs. Previous research points out that women have an intimate knowledge of consumer markets and customers, and that one main effect of the inclusion of gender diversity on boards was to broaden the spectrum of ideas and perspectives considered to identify opportunities (Hillman et al., 2002; Miller and Triana, 2009). Gender diversity on boards influences stock liquidity. Other

researchers argue that organizational innovation is more appropriate to focus on, when dealing with the contribution of female directors to stock liquidity (Torchia et al., 2011). This suggests that gender diversity influences positively firm's stock liquidity.

As suggested by Miller and Triana (2009), the positive outcomes of board diversity help to relate board diversity to stock liquidity. Torchia et al. (2011) highlight, only a few studies investigated the effect of such gender on stock liquidity. In their study of the relationship between board gender diversity and stock liquidity, Miller and Triana (2009) suggest that innovation takes a mediating role, and they found a positive relationship between gender diversity and innovation. Torchia et al. (2011) found a positive link between gender diversity and stock liquidity

Faccio et al. (2016) and Srinidhi et al. (2011) report the positive effect of gender diversity for earnings quality. In contrast, Ahern and Dittmar (2012) find a negative effect of diversity for firm value. Additionally, Carter et al. (2010) did not find any significant relationship for gender or ethnic diversity on firm performance. The inconclusive findings of prior studies may be because they focus on individual aspects of board diversity without giving consideration to the interaction effects of these features (Lowe et al., 2001).

2.7 Board Education Diversity and Stock Liquidity

Sometimes there is a need for greater diversity at main board level. Undoubtedly, women are underrepresented but the pool to draw from relatively small despite the best efforts of many years of equal numbers of men and women graduating. Those from a noncommercial background, such as the military, academia, and to a lesser extent certain professions, also find it difficult to get on to the non-executive directors' ladder, because of a combination of laziness on the part of the company and

the inappropriate experience of the candidate. However, there is a need for diversity where a board has already made the conventional appointments; a board can often benefit from a trained, curious mind that may view matters differently and thereby help advance the thinking of the board (Waine & Green, 2009).

Research in psychology suggests that educational diversity in problem-solving groups improves performance. Put a bunch of MBAs in a room and you will arrive at inferior solutions, and arrive at them more slowly, than if you mix the MBAs with attorneys, accountants, and engineers (Dobbin & Jung, 2011). Nowadays, firms are a challenge with an ever-dynamic business environment where firm performance is becoming an increasing function of intellectual capital resources (Rampling, 2011). Educational and intellectual attainment in boards, measured by the presence of executives with PhD degrees, is associated with a decrease in risk taking (Berger, Kick, & Schaeck, 2012).

Therefore, educational diversity is an interesting field for many researchers (Bathula, 2008; Coffey & Wang, 1998; Herrmann & Datta, 2005). Consequently, board decisions in liquidity decisions tend to be more moderate because they rely increasingly on appropriate evidence, which prevents excessive risk taking (Berger et al., 2012). Some scholars found that number of board members with PhD level education is negatively related with liquidity decisions (Bathula, 2008), while Fidanoski et al. (2014) suggest no significant relationship between educational ratio and liquidity decisions. However, qualified board members with PhD titles can be considered as the most valuable strategic resource of companies (Ingley & van der Walt, 2001; Westphal & Milton, 2000). Board members with PhD would ensure an effective board with high levels of intellectual ability, experience, soundness of

judgment, and integrity (Hilmer, 1998). Better qualifications of board members will increase liquidity decisions through professional expertise and advice (Boyatzis, 1982; Carpenter & Westphal, 2001; Carver, 2002; Dunphy, Turner, & Crawford, 1997; Haniffa & Cooke, 2002; Hunt, 2000).

Several studies associate education with innovative behavior in household money matters. Grable (2000) demonstrate that higher educational attainment increases individuals' propensity to take innovative risk in everyday financial decisions, and Christiansen, Schröter Joensen, and Rangvid (2008) show that higher education also increases participation in stock market investments.

Evidence on the effect of inside, for example executive directors' educational background on bank liquidity decisions is presented by Graham and Harvey (2001). Their survey evidence underscores executives with MBA degrees more frequently use innovative project valuation techniques and tend to rely more on the CAPM for estimating cost of capital than executives without such degrees. Intuitively, the use of more innovative techniques should reduce firm risk. However, Bertrand and Schoar (2003) report that executives with MBAs tend to be more aggressive, and run more levered firms, suggesting MBA graduates engage in more innovative firm policies.

Boards with high education background among a board's independent directors arguably have high liquidity decisions (Harris and Raviv 2008). Taken together, these findings indicate that high board education background is associated with more innovative risk taking that potentially benefits investors before the financial crisis but turn out to be detrimental during the crisis. These results are consistent with Beltratti and Stulz (2010) who study an international panel of large banks and find that pro-shareholder boards are associated with higher lower performance prior to the crisis,

potentially reflecting decisions that were thought to maximize shareholder value but did not perform as expected when the crisis hit. There is a dual effect of directors' educational background on liquidity decisions. The survey by Graham & Harvey (2001) showed that directors holding an MBA degree employ innovative valuation techniques more than directors without such a degree. As a result, sophisticated valuation methods should reduce risk for a firm. Second, directors with MBA are also shown to be more aggressive and employ riskier firm policies (Bertrand & Schoar, 2003).

2.8 Theoretical Framework

2.8.1 The Principal-Agent Theory

The principal-agent theory serves as an appropriate approach for board diversity and its effects on business performance in one-tier and two-tier systems (Berle & Means, 1932; Jensen & Meckling, 1976). The board of directors or the management board and supervisory board within listed public companies represent the agents of the shareholders (principals) because they adopt and execute business management and monitoring on behalf of the shareholders (Yermack, 1996; Daily et al., 2003). The major problems of the agency theory are information asymmetries due to hidden characteristics, hidden information, hidden action and hidden transfer. Therefore, the risks of adverse selection and moral hazard increase (Berle & Means, 1932; Jensen & Meckling, 1976). Furthermore, conflicts of interests between the corporate administration and the capital market arise. The corporate administration ideally operates in the investors' interests by considering the shareholder value-policy. Through monitoring and bonding, which also causes agency costs, hidden actions are supposed to be reduced. Agency Theory represents a system in which oversight and

executive management roles are clearly stated and separated (Jensen and Meckling (1976).

It foresees a fundamental problem arising from the anticipation of hidden knowledge arising from information asymmetry and hidden action by the self –interested agents (Schillemans, 2012) and suggests that principals should adopt a sensitive combination of instruments to keep their self – interested agents in check. Problems that result from asymmetric information and divergences of interest between the two parties include a limited ability to select a reliable agent and to monitor and censure his or her performance (Breton and Miller, 2009). Davis et, al. (1997), Berger and di Patti (2002) concur that the separation of ownership and control in a professionally managed firm may result in managers exerting insufficient work effort, choosing inputs or outputs that suit their own preferences or otherwise failing to maximize the value

2.8.2 Upper Echelons Theory

The upper echelons perspective has developed since Hambrick and Mason's 1984 introduction. The theory has its roots in the behaviour theory of the firm (March & Simon, 1958; Cyert & March, 1963). According to this theory, decision makers are often unable to make economically rational decisions because they are bound by rationality and must act in a social context of multiple and conflicting goals. Hambrick and Mason (1984) extended these ideas in their upper-echelons perspective. Hambrick and Mason (1984) formalized the upper echelons perspective, "proposing that senior executives make strategic choices on the basis of their cognitions and values and that the organisation becomes a reflection of its top managers" (Finkelstein

and Hambrick, 1996). Finkelstein and Hambrick further formalized the upper echelons perspective as strategic leadership theory.

The theory links these observable demographic characteristics of the TMT to organizational processes and outcomes (Finkelstein & Hambrick, 1996; Knight et. al., 1999). Further, the "theory states that organizational outcomes can be partially predicted from managerial backgrounds" (Hambrick & Mason, 1984) and executives will make decisions as a team that is consistent with their cognitive base of executive orientation (Knight et. al., 1999). The cognitive base consists of two elements: psychological characteristics and observable experiences. A fundamental principle of upper echelons theory is that observable experiences (i.e., demographic measures) are systematically related to the psychological and cognitive elements of executive orientation. Upper echelons research employs the use of observable demographic characteristics as proxy measures of executive orientation (Knight et. al., 1999).

Upper-echelons theory emphasizes on the effects of executives on corporate strategy, but it neglects the governance context in which corporate elites are situated. Upper-echelon theorists generally do not place emphasis on governance differences and combine the CEO and other executives into the top management team unit of analysis (e.g. Hambrick and Mason, 1984), or even suggest combining the top management team with the nonexecutive directors into a supra-TMT (Hambrick and Finkelstein, 1996). The study drew on both the theoretical support derived from Upper Echelons Theory, which argues that board diversity (such as gender) can be used as proxies for their models of knowledge and decision making, which can have relationship between with liquidity decisions.

2.9 Conceptual Framework

The study presented a diagrammatical presentation of independent variables and dependent variables. The independent variables are age diversity, gender diversity, education diversity and nationality diversity. The dependent variable is stock liquidity.

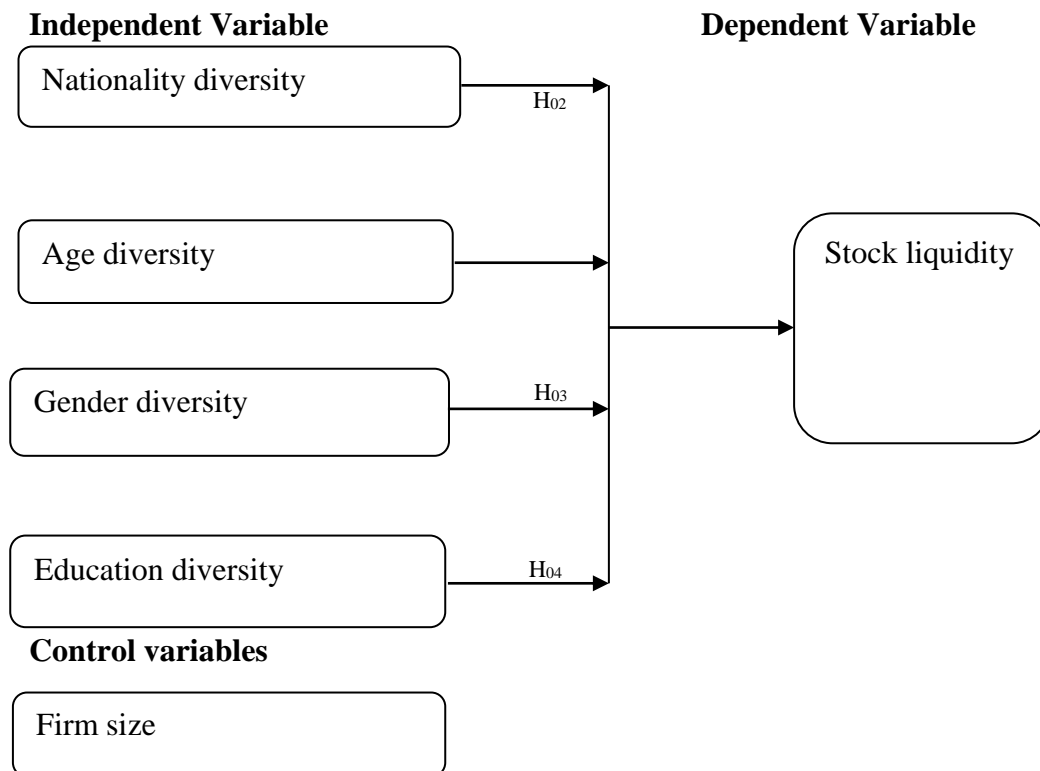


Figure 2.1: Conceptual Framework
Source; (researcher, 2020)

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter explains the research study information. It highlights the following elements: the study area, research design, target population, sampling design and sample size, data collection, Validity and Reliability of Research test, data processing, data analysis and presentation, limitations of the study and ethical considerations.

3.2 Research Design

Research design is the general plan of how one goes about answering the research questions. It is important to highlight the two main methods when investigating and collecting data quantitative and qualitative data. A quantitative approach is strongly linked to deductive testing of theories through hypotheses, while a qualitative approach to research generally is concerned with inductive testing (Saunders *et al.*, 2003). The main focus of this study is quantitative.

This study used a combination of explanatory and longitudinal research design. Kumar (2005), states that explanatory is used to refer to a research in which the researcher, rather than creating the treatment, examines the effect of a naturally occurring treatment after it has occurred. In other words, it is a study that attempts to discover the pre-existing causal conditions between groups. On the other hand, it tries to verify formulated hypotheses that refer to the present situation in order to elucidate it (Bechhofer and Paterson, 2008).

This study adopted longitudinal design, a correlation study repeated observations of the same items over long periods of time (Sekaran, 1992). It involves tracking changes over time on a broad range of population members. Since the given study is

largely descriptive (concerned with finding out “by how much”) sample statistics are used to make generalization about population parameters. This study focused on the board diversity of different companies at NSE as well as the movement of their stock liquidity to determine whether there was any evidence of the overreaction hypothesis.

3.3 Target Population

The target population comprised 62 firms listed in Nairobi stock exchange Nairobi Security Exchange, (see Appendix I) (NSE, 2018). The period of the empirical analysis was from 2008 to 2018.

3.4 Inclusion and Exclusion Criteria

A census of 62 firms was done from 2008-2018. However, the study included only firms which have been trading consistently from 2008 to 2018. Firms with missing data were excluded from the study. Ultimately, 400 firm-year data of 40 firms listed in NSE was included in the sample.

3.5 Data Collection Instruments

The data collection instrument used in this study was content/document analysis guide. The study was conducted using secondary sources which were achieved by analyzing the content of financial reports of 62 firms quoted in NSE. This was suitable for this study because all the audited information about the companies was readily available for the public as required by the company law of Kenya Act. According to Oso and Onen (2009), document analysis is an instrument for collecting secondary information. Document analysis was used because data being collected is secondary in nature. Corbetta (2003) identified a number of advantages of the documents over other research methods. It is a non-reactive technique where the information given in a document is not subject to a possible distortion as a result of

the interaction between the researcher and the respondent. However, documents may have some limitations in terms of the accuracy and completeness of the data (Patton, 2002).

3.6 Measurement of Variables

Dependent variable

The dependent variable used in the empirical analysis is stock liquidity. Following several studies such as; Chordia et al. (2001), this study employ's one proxies of this variable: No. of Shares Traded (NST): is defined as the natural log of the total number of shares traded during the year.

Independent variables

Indices such as Blau, Shannon-Weaver entropy and Herfindahl, have been used to measure diversity in most studies (Tarus & Aime, 2014; Ostergaard, 2011, Fernandez, 2015; Ferrero –Ferrero, 2015). For categorical independent variables, (Gender, Education and nationality), Herfindal index was used. First, frequencies were used to summarize the variables then determine Herfindahl heterogeneity index of board demographic characteristics. Here, the minimum value of the Herfindahl coefficient of variation indices equals (0) for all the diversity measures and maximum value equals (1). Herfindahl index is computed as follows:

$$H = 1 - \sum (P_i)^2$$

Where:

H is the diversity measure

P_i is the percentage of board members in each category

Age which are non-categorical, are usually estimated using either standard deviation of age (Richter et al, 2011) or coefficient of variation (Tarus & Aime, 2014) though

the latter was employed in this study. The variables are first measured using number of years then subjected to coefficient of variation.

3.7 Data Analysis and Presentation

Data processing starts with data preparation, coding, editing and cleaning. Both descriptive and inferential statistics was used to analyze data. Descriptive statistics was used to examine location of data, for example, where data tend to fall as measured by the mean and variability of data, for instance, how spread out data are, as measured by the standard deviation. Inferential statistics are closely tied to the logic of hypothesis testing discussed. Inferential statistics will include Pearson Correlation and multiple regression analysis. Pearson correlation assumes the data is linear, and shows the relationship/association between the dependent variable and independent variable whereas mediated regression shows the extent of the effect of the independent variables on dependent variable. This data will first be analyzed for correlation using coefficient of correlation r for association and coefficient of determination R^2 to establish the extent to which ownership structure accounts for changes in divided policy.

3.7.1 Model specification

A panel data framework is used to test the hypotheses. Panel data, as noted by Hsiao (1986), has several distinct advantages: it provides more degrees of freedom, increases variations in the data and thereby reduces the chances of multicollinearity, and makes it possible to control for fixed effects, panel data have the strength of accommodating more observations hence increases the degrees of freedom. In addition, it reduces the problem of collinearity of regressors and modelling flexibility of behaviour differences within and between countries and/or groups or institutions

(Biwott, 2011; Hsiao, 2007). Panel data was analyzed using fixed effect model (FEM) and random effects model (REM). Fixed effects model is used when controlling for omitted variables that differ between individuals but are constant over time. If some omitted variables might be constant over time but vary between individuals, and others might be fixed between individuals but vary over time, then random effects model was of help in taking the two types into account. The random effects model would be appropriate if data are representative of a sample rather than the entire population, because the individual effect term can be a random outcome rather than a fixed parameter.

According to Lee (2008) in order to compare the usefulness of these models, three tests was run. First, fixed effects was tested by F test and the null hypothesis all individual effects terms except one are zero was rejected at 0.1% significance level. This suggests that the fixed effects model is better than the pooled OLS model. Second, random effects was examined by the Lagrange multiplier (LM) test and the null hypothesis cross-sectional variance components are zero was rejected at 0.1% significance level. This argues in favor of the random effects model against the pooled data model. Finally, Hausman test was used to compare fixed effects and random effects and the null hypothesis-- there is no significant correlation between the individual effects and the regressors is rejected at 0.1% significance level in this test. This confirms the argument in favor of the fixed effects model against the random effects model. In sum, the test results will confirm that the fixed effect model is superior to any other models in dealing with the data

The model testing direct effects of corporate governance and stock liquidity are as follows:

$$SL = \beta_{0it} + \beta_1 FS_{it} + \beta_2 ND_{it} + \beta_3 AD_{it} + \beta_4 GD_{it} + \beta_5 ED_{it} + \rho_{it} \dots \dots (i)$$

Where;

SL is the measure of stock liquidity

β_0 is the constant of equation (represents the changes in stock liquidity that cannot be explained by independent variables in the model)

FS = firm size

ND is the measure of nationality diversity

ED is the measure of education diversity

AD is the measure of age diversity

GD is the measure of gender diversity

ρ is error term

i represent the firm

t is the measure of time

3.8 Assumptions of the Model

Some econometric problems have the potential to make the regression results biased and spurious if they are not found and consequently dealt with. Various econometric tests are carried out to diagnose these potential econometric problems and eventually necessary measures are taken for fixing them. Typically there are multiple ways of dealing with econometric problems once they are detected or suspected. While, given

the similar nature of our regression procedures it is expected the same potential econometric problems for all hypotheses. For the sake of simplicity and brevity a general discussion on major econometric issues was discussed.

3.8.1 Multicollinearity

The problem of multicollinearity occurs when the relative movements of two or more independent variables match. In this, the standard OLS estimates become unable to distinguish between the variables. Given that many other independent variables in this study may have a priori suspect of multicollinearity, Variance Inflation Factors (VIF) was tested after each standard OLS regression to examine the level of correlation between the variables.

3.8.2 Heteroscedasticity

The problem of heteroscedasticity occurs when the residuals of the regression are heteroskedastic. That is, the variance of residuals is not constant for all observations. In such a case the standard OLS estimators no longer produce minimum variance. The standard error of the coefficients gives inaccurate estimates. In the presence of heteroscedasticity the estimated parameters may remain consistent but inefficient. In order to test for heteroscedasticity I performed Breusch Pagan/Cook-Weisberg (1979) test. The said test is the Lagrange Multiplier (LM) test that bases on the assumption that residuals are normally distributed with K degree of freedom. The null hypothesis states that variance of the disturbance terms are homoscedastic. In other words, variance of the error terms is constant.

3.8.3 Autocorrelation

One of the fundamental assumptions of Linear Regression Model (LRM) is that the covariance between the error terms over the time is equal to zero, or the error terms

are not correlated with each other (Brooks, 2010). If however the error terms are correlated it creates the problem of autocorrelation or serial correlation, which leads to make the standard error biased. Hence, the standard OLS estimators no longer remain the minimum variance ones. This follows that a diagnostic test is required to check for the presence of serial correlation after each standard OLS regression of my analysis. With the analysis of a long time series of 10 year, we may have a priori suspect of autocorrelation. The graphical method is commonly used as a first hand method to judge the presence of autocorrelation. But to confirm the presence of autocorrelation a formal statistical test is required to apply. Tests such as Durbin-Watson (DW) and Breusch-Godfrey (BG) are the simplest and commonly used tests in time series analysis in order to detect autocorrelation.

3.8.4 Normality Test

The study performed the Jarque-Bera test for normality. Additionally, skewness and kurtosis was used as proposed by Jarque and Bera (1987) for omnibus test. Improved Jarque-Bera tests have been discussed by many authors. The Jarque-Bera statistic follows the chi-squares distribution with two degrees of freedom. Under the null hypothesis of normality, the expected value of the statistic is two.

3.9 Ethical Issues

The study ensured that any references made are attributed to the actual author, and by indicating the name of the author, and the year his/her work was published. Detailed information of any reference used was indicated under references at the appendix. A letter stating the purpose of the study and how the researcher intended to maintain privacy, confidentiality and anonymity was attached to the data collection schedule.

3.10 Limitations of the Study

The study used 40 firms which have been listed in the NSE between the years 2008 to 2018. All the firms which either had missing data or were suspended during the years 2008 and 2018 were excluded from the study. Secondly, the study used secondary sources that were generated from the company's primary information sources such as primary information sources such as financial reports. Any error in the primary sources was considered to have an inconsequential effect on the results of the study. Thirdly, the study was limited to the study period 2008 to 2018 and thus the results reflect the time period stated.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter presents the findings and the discussion with reference to existing literature concerning the data that was collected in line with the specific objectives. The analysis of the data was conducted using descriptive statistics such as means and standard deviations. The findings were presented in such a manner as to address and test the stated hypotheses. This section first begins with presenting the descriptive statistics and finally, the inferential findings of the study.

4.1 Descriptive Statistics

In panel data of 40 firms for a period of 10 years (2008-2018) , descriptive statistics are a collection of measurements of two things: location and variability. In this case, location tells the central value of the variable (where the mean is the most common measure). Variability refers to the spread of the data from the center value (that is, variance, standard deviation, in this case the standard deviation is inferred). Consequently, the study sought to determine the descriptive statistics of the panel data especially the mean, standard deviation and maximum and minimum values. The findings were summarized and presented in Table 4.1.

Table 4.1: Descriptive statistics

Variable	N	Mean	Std. Dev.	Min	Max
Board age	380	53.683	6.515	40.18	69.27
Board nationality diversity	380	.336	.210	0.00	.81
Board education diversity	380	2.686	0.914	1.00	6.00
Board gender	380	.284	.162	0.00	.46
Firm size	380	6.478	1.349	0.00	8.89
Stock liquidity	380	.502	.376	0.00	.91

Source: (Field Data, 2020)

The findings presented in Table 4.1 show a mean of 53.683 for board age (std. dev. = 6.515) implying maximum board age of 69.27 and a minimum of 40.18. This shows that in terms of board age, majority of the firms narrow down on the experience of the board member.

With regard to board nationality diversity, the mean was .336 (std. dev. = .210) with a maximum of .81 and minimum of 0 indicating that 33.6% of board members in firms listed in NSE are foreigners meaning some companies were diversified in terms of the nationality of its board members, there were some who were not ethnically diversified.

The mean for board education diversity was 2.686 in years (std. dev. = 0.914) with a maximum education of 6 and a minimum of 1 in years which indicated that majority of the firms had a board education diversity of approximately 3 years. Board gender had a mean of .284 (std. dev. = .162) with a maximum of .46 and a minimum of 0 showing that there were companies that were inadequately diversified in terms of gender while some were not.

Firm size has a mean of 6.478 (std. dev. = 1.349) with a maximum of 8.89 and a minimum of 0. Finally, in terms of stock liquidity, the mean was .502 (std. dev. = 4.376) indicating average stock liquidity in firms listed in Nairobi stock exchange.

4.2 Assumptions

The study also carried out other diagnostic tests on the data as well as the random effects model.

4.2.1 Heteroschadasticity

According to Williams (2015), if error terms do not have constant variance, they are said to be Heteroscedasticity, on the other side, when the variance of the error term is constant, it is called homoscedasticity. The study used Breusch and Pagan Lagrangian Multiplier test to identify the presence of Heteroscedasticity. The null hypothesis for the test is homoscedasticity and alternative hypothesis suggest Heteroscedasticity. The p values are 0.72, we accept the null hypothesis. Thus, the model does not suffer from the problem of Heteroscedasticity.

Table 4: Test for Heteroscedasticity

	chi2(1)	Prob > chi2
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	0.13	0.72
White's test for Ho: homoskedasticity against Ha: unrestricted heteroskedasticity	48.25	0.07

Source: (Field Data, 2020)

4.2.2 Unit Root Test

By inserting non-stationary data into an OLS equation, not only obtaining consistent estimators is unfeasible, but also the basic causal effect among variables is dubious (Wooldridge, 2004). The Augmented Dickey-Fuller fisher test for unit root indicates that for all the testing criteria, the panel has not unit root, p-value <0.05.

Table 4 Fisher-type root test based on augmented D-F tests

	BAD		BED		BND		BGD		SL	
	Statistic	p-value	Statistic	p-value	Statistic	p-value	Statistic	p-value	Statistic	p-value
Inverse chi-squared (22) P	28.3	0.0	5.0	0.0	-0.1	0.0	22.2	0.0	396.9	0.0
Inverse normal Z	0.4	0.0	4.7	0.0	0.0	0.0	0.3	0.0	-14.2	0.0
Inverse logit t(59) L*	0.6	0.0	5.1	0.0	-1.1	0.0	0.2	0.0	-18.7	0.0
Modified inv. Chi-squared pm	0.9	0.0	-2.6	0.0	0.3	0.0	0.0	0.0	27.6	0.0

Source: (Field Data, 2020)

<i>BND</i>	=	<i>Board Nationality Diversity</i>
<i>BAD</i>	=	<i>Board Age Diversity</i>
<i>BGD</i>	=	<i>Board Gender Diversity</i>
<i>BED</i>	=	<i>Board Education Diversity</i>
<i>SL</i>	=	<i>stock Liquidity</i>

4.2.3 Autocorrelation

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 4.4. The results indicate that there was no first order serial correlation ($F = 17.047$ $p > 0.05$).

Table 4.2: Wooldridge test for autocorrelation for autocorrelation

Wooldridge test for autocorrelation in panel data	
F (1, 10)	17.047
Prob > F	0.052

H_0 : No first order autocorrelation

Source: (Field Data, 2020)

4.2.4 Test For Multicollinearity

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 4.5. 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 4.3: Testing for Collinearity

Variable	VIF	Sqrt VIF	Tolerance	R-squared
Board age diversity	2.0900	1.4500	0.4787	0.5213
Board education diversity	3.7200	1.9300	0.2689	0.7311
Board nationality diversity	4.9800	2.2300	0.2008	0.7992
Board gender diversity	1.0700	1.0400	0.9310	0.0690
Mean VIF	2.3400			

Source: (Field Data, 2020)

4.2.5 Test for normality

In order to determine normality of research variables, Jarque-Bera test normality test was utilized. In this test, if significance level is lower than 5% (Sig < 5%), the null hypothesis is rejected at confidence level 95%. Test assumptions are as follows:

H0: Data distribution is normal.

H1: Data distribution is not normal.

For the Jarque-Bera Test, if the p-value is lower than the Chi (2) value then the null hypothesis cannot be rejected. It can therefore be concluded that the residuals are normally distributed. The chi (2) is 0.065 which is greater than 0.05 meaning that the null hypothesis cannot be rejected. The implication is that there is no violation of the normal distribution assumption of error terms as the residuals are coming out to be normal.

Table 4.4: Jarque-Bera test

Jarque-Bera	test for Ho: normality:	
	normality test	5.467
	Chi(2)	0.065

Source: (Field Data, 2020)

4.3 Correlation

Correlation analysis is normally conducted to establish the level to which two variables converge or diverge together depending on the case so as to determine the significance of the relationship. Normally, the Pearson's Product Moment Correlation Coefficient is used to make inference about the existing relationship between two variables.

As a result, a positive value of the correlation coefficient shows that the two variables move together in the same trend, and when there is a negative value, it shows that the variables move in opposite direction or trend. Essentially, correlation analysis depicts to a given degree, the aspect of how one factor influences another. However, correlations do not imply or infer a cause-effect relationship. Consequently, a correlation analysis of the independent factors and the dependent factor (stock liquidity) was conducted and the findings were summarized and presented in Table 4.7 in which pairwise correlation method was used

The findings in Table 4.7 showed that board age has a positive and significant relationship with stock liquidity ($r = 0.3005$, $p\text{-value} = 0.000$) implying that there is a 30.05% chance that stock liquidity will increase with increase in board age which essentially implies the experience of the board members. Furthermore, board nationality diversity has a negative and significant relationship with stock liquidity (r

= -0.1496, p-value = 0.0033) which indicates that there is a probability of 0.1496 that stock liquidity will decrease with increase in board nationality diversity.

In addition, board education diversity has a positive and significant relationship with stock liquidity ($r = 0.3658$, p-value = 0.000) which means that there is a probability of 0.3658 that stock liquidity will increase with increase in board education diversity.

The findings also show that board gender has a positive and significant relationship with stock liquidity ($r = 0.4507$, p-value = 0.000) which shows that there is a probability of 0.4507 that stock liquidity will increase with increase in board gender diversification. Finally, firm size does not have a significant relationship with stock liquidity ($r = -0.0974$, p-value = 0.0561). In addition, there were significant inter-factor relationships between board education diversity and board age ($r = 0.1747$), between board gender and board age ($r = -0.1834$), between board gender and board education diversity ($r = 0.1362$), between firm size and board age (-0.1767) and between firm size and board nationality diversity ($r = 0.1232$).

Table 4.5: Correlation analysis

	Stock liquidity	Board age	Board nationality diversity	Board education diversity	Board gender
Stock liquidity	1				
Board age	0.3005*	1			
Board nationality diversity	-0.1496*	-0.0044	1		
Board education diversity	0.3658*	0.1747*	-0.0532	1	
Board gender	0.4507*	-0.1834*	-0.0209	0.1362*	1
Firm size	-0.0974	-0.1767*	0.1232*	-0.0021	0.0688

* Correlation is significant at the 0.05 level (2-tailed).

Source: (Field Data, 2020)

4.4 Fixed and Random Models

To test the hypothesis both fixed and random effect were used and Housman tests was used to determine which model test the hypothesis.

4.4.1 Fixed Effect Model

In the fixed effect specification, r squared was 0.0603 implying that board diversity contributes to 6.03% of stock liquidity. Findings from Table 4.8 showed that board nationality diversity showed a positive and significant effect on firm stock liquidity ($\beta=0.134$, $\rho<0.05$). Specifically, an increase in board nationality diversity by 0.134 units, leads to an increase in firm stock liquidity by the same unit. Moreover, board age diversity showed insignificant effect on firm stock liquidity ($\beta= 0.20$, $\rho>0.05$).

Furthermore, board gender diversity showed a positive and significant effect on firm stock liquidity ($\beta= .084$, $\rho<0.05$). Specifically, an increase in board gender diversity by 0.84 units, leads to an increase in firm stock liquidity by the same unit. The t-value = 2.90 which implies that it is less than the standard error.

Further, board education diversity showed a positive and significant effect on firm stock liquidity ($\beta= .103$, $\rho<0.05$). Specifically, an increase in board education diversity by 0.103 units, leads to an increase in firm stock liquidity by the same unit. The t-value = 2.90 which implies that it is less than the standard error.

However, firm size ($\beta= -461$, $\rho>0.05$) had no significant effect on firm stock liquidity. Therefore, there is no change in firm stock liquidity with increase in firm size and industry.

Table 4.6: Fixed model

Fixed-effects (within) regression	Number of obs =	380
Group variable: firm	Number of groups =	38
R-sq: within = 0.1475	Obs per group: min =	10
R-sq: between = 0.0417	avg =	10.0
R-sq: overall = 0.0603	max =	10
Corr(u _i , Xb) = -0.0430	F(8,520) =	11.25
	Prob > F =	0.0000

SL	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Constant	.9415317	.3244437	2.90	0.004	.3041502	1.578913
BND	.1349683	.0422113	3.20	0.001	.0520427	.2178939
BGD	.020228	.0200501	1.01	0.314	-.0191613	.0596172
BED	.0838386	.0300701	2.79	0.005	.0247649	.1429123
BAD	.1035613	.0237505	4.36	0.000	.0569025	.1502201
Firm size	-.4612783	.3325098	-1.39	0.166	-	.1919493
					1.114506	
sigma_u	.86065821					
sigma_e	.39884283					
Rho	.82321165	(fraction of variance due to u _i)				

F test that all u _i =0:	F(47, 520) =	24.79	Prob > F =	0.0000
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Source: (Field Data, 2020)

4.4.2 Random Effect Model

The study used random effect to find effect of board diversity on stock liquidity. In a random effects model, the unobserved variables are assumed to be uncorrelated with (or, more strongly, statistically independent of) all the observed variables. That assumption will often be wrong but, for the reasons given above (e.g. standard errors may be very high with fixed effects, RE lets you estimate effects for time- invariant variables), an RE model may still be desirable under some circumstances. RE models can be estimated via Generalized Least Squares (GLS). From the RE model, R Squared was 0.3065 which indicate that the four components of board diversity (board nationality diversity, board age diversity, board gender diversity and board education diversity) explains 30.65% variation in stock liquidity of Kenyan listed firms. As the model reveals the remaining 59 % of variability is not explained in this

model. An Walds chi-square results indicates $\text{prob} > \chi^2 = 0.000$ that model is significant

Findings showed that board nationality ($\beta_1 = 0.064$, $p=.116>0.05$) and board age ($\beta_4 = 0.030$, $p=.136>0.05$) has insignificant effect on stock liquidity of listed firms in NSE. Further findings showed that board gender and board education ($\beta_2 = 0.137$, $p<0.05$) and board education diversity ($\beta_3 = 0.102$, $p<0.05$) had significant effect on firm stock liquidity. This suggested that there was up to 0.137 unit increase in firm stock liquidity for each unit increase in board gender diversity and there was up to 0.102 unit increases in firm stock liquidity for each unit increase in board education diversity. Regarding, the findings on control effect showed that firm size ($\beta = -0.186$, $p>0.05$) had no significant effect on firm stock liquidity.

Table 4.7: Random effect

Random-effects GLS regression				Number of obs = 380		
Group variable: firm				Number of groups = 38		
R-sq: within = 0.1332				Obs per group: min = 10		
R-sq: between = 0.3470				avg = 12.0		
R-sq: overall = 0.3065				max = 12		
corr(u_i, X) = 0 (assumed)				Wald $\chi^2(9) = 111.97$		
				Prob > $\chi^2 = 0.0000$		
SL	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Constant	1.046697	.3527195	2.97	0.003	.3553793	1.738015
BND	.0645668	.0411294	1.57	0.116	-.0160453	.145179
BAD	.0304559	.0204509	1.49	0.136	-.0096273	.070539
BGD	.1369476	.0294213	4.65	0.000	.0792828	.1946123
BED	.1023792	.02415	4.24	0.000	.0550462	.1497123
Firm size	-.1864135	.3375723	-0.55	0.581	-.848043	.4752161
sigma_u	.5503982					
sigma_e	.39884283					
rho	.65569079 (fraction of variance due to u_i)					

Source: (Field Data, 2020)

4.4.3 Housman test

To decide between fixed or random effects one can run a Hausman test where the null hypothesis is that the preferred model is random effects compared to the alternative

the fixed effects (see Green, 2008). It basically tests whether the unique errors (u_i) are correlated with the regressors; the null hypothesis is that they are not. As indicated by Piratheepan and Banda (2016), the Baltagi (2005) suggested that the Hausman test has two restrictions, it requires strict ergogeneity of error term and assumes that both idiosyncratic error and unobserved effects have constant variances. The Hausman test is used to assess the uniqueness of the error term that whether they are correlated with the response variable or not. Therefore, it can be formulated

H₀ hypothesis claims that random effect exists

H₁ hypothesis states that random effect does not exist.

With the evidence of result from Hausman test $\text{Prob} > \text{Chi}^2 = 0.000$. H₀ hypothesis is rejected for null hypothesis model with the 1% of significance level. Table 4.10 shows summarized results for the choice of the model.

Table 4.8: Housman test

	(b) fe	(B) re	(b-B) Difference	$\text{sqrt}(\text{diag}(V_b - V_B))$ S.E.
BND	0.134968	0.064567	0.070402	0.003
BGD	0.020228	0.136948	-0.11672	0.122
BED	0.083839	0.102379	-0.01854	0.002
BAD	0.103561	0.030456	0.073105	0.007
Firm size	0.03206	-0.18641	0.218473	0.014
$\text{chi}^2(7) = (b-B)'[(V_b - V_B)^{-1}](b-B)$		8.52		
$\text{Prob} > \text{chi}^2$		0.2893		

Source: (Field Data, 2020)

From the findings presented in Table 4.10, column labeled (b) represents the fixed effects model estimated coefficients while the one labeled (B) represents the random effects model estimated coefficients. From the Hausman test Table 4.11 which shows summary of the results, the conclusion is that, there is a failure to reject the null hypothesis of “difference in coefficients not systematic” to determinants of stock liquidity. This is because the chi-square value of 8.52 was not significant, p-value = 0.2893. Therefore, this implies that, effect of hypotheses are tested using the random

effects model. This means that the most appropriate model is the random effects. Random effects models have an important advantage over fixed-effects models because they take into account the variation between observations in addition to the variation within observations of individuals.

4.5 Test of Hypotheses

Based on the findings in the Housman test, the study used random effect to test hypotheses 1 to 4. Random effects regressions are a weighted average of between and within effects. Fixed-effects models have the advantage of being consistent, but random effects models are more efficient. However, random effects models have the disadvantage that they may be inconsistent if the between and fixed estimates of the parameter values in a model are not the same – i.e., if the model is unspecified.

Hypothesis 1(H₀₁) stated that board nationality has no significant effect on stock liquidity of listed firms in NSE. Findings showed that board nationality had coefficients of estimate which was insignificant basing on $\beta_1 = 0.064$ (p-value = 0.116 which is more than $\alpha = 0.05$). The null hypothesis was thus accepted and it was concluded that board nationality diversity has no significant effect on stock liquidity of listed firms in NSE. This suggested that firm stock liquidity may not increase due to increase in board nationality diversity. Findings, these findings show that although some empirical findings have showed that nationality diversity results in greater knowledge, creativity and innovation and thus, organizations tend to become more competitive, there are other investigations that have revealed that, in fact, heterogeneity and national diversity tends to lead to conflicts and negatively affect the effectiveness of communication in top management and thereby negatively affecting the performance of the firm. The findings are contrary to Eisenhardt *et al.*,

(2008), Smith *et al.*, (2004), Carpenter (2002), Greening and Johnson (2006) and Siciliano (2006) argues that board nationality diversity offers positive results in performance.

These findings are quite consistent with our earlier study (Maran & Indraah, 2009). Research shows that increasing national diversity on boards of directors would be beneficial to organization in terms of gaining critical resources (Pfeffer & Salancik, 2008) and where corporate governance is concerned, benefits at strategic level are positively related to diverse top management (Eisendarth & Bougeois, 2008) nationality diversity among board members is also positively related to performance in the context of social obligation (Siciliano, 2006)

Hypothesis 2(H₀₂) stated that board age diversity has no significant effect on stock liquidity of listed firms in NSE. Findings showed that board age diversity had coefficients of estimate which was insignificant basing on $\beta_2 = 0.0304$ (p-value = 0.136 which is more than $\alpha = 0.5$ hence it was concluded that board age diversity had no significant effect on firm stock liquidity. According Mahadeo et al., (2012) resistance to change may be more present when the members are older and the decisions taken could be more conservative and the members could be more risk adverse. On the other hand, younger members may be more risk averse and have a higher education. This means that there was competition of ideas between the fresh, young and more agile versus the experienced. In this sense, age diversity is meant to stimulate changes because of increased variety of perspectives. In addition, a firm that invests in ensuring age diversity especially in the board assures higher staff morale, higher productivity and access to a bigger customer base. Also, a firm that is conscious of age diversity within its ranks ensures an appeal to the clientele that are or

might be concerned with gender related issues hence placing the business at a vantage point compared to their competitors (Torchia et al., 2011).

Hypothesis 3(H₀₃) stated that board gender diversity has no significant effect on stock liquidity of listed firms in NSE. Findings showed that board gender diversity had coefficients of estimate which was significant basing on $\beta_3 = 0.136$ (p-value = 0.000 which is less than $\alpha = 0.000$ hence board gender diversity has a positive and significant effect on firm stock liquidity. This suggested that there was up to 0.136 unit decline in firm stock liquidity for each unit increase in board gender diversity. The findings agrees Nguyen & Muniandy (2020) that board gender had positive effect on stock liquidity. Participation of women in the labor market is lower compared to males because of the skewed access to business opportunities. Such a board leads to better understanding of the market by enabling a complete understanding of the customer diversity hence promoting innovation in the firm that is tailored to meet specific customer needs and allowing the firm to grow its market and influence in the market in relation to its competition (Marimuthu, 2018). Furthermore, a gender diverse board enhances the board's level of autonomy from the management thereby placing them in a better position to articulate the needs of the shareholders. It also enhances problem solving by providing different perspectives within a given process (Ahern and Dittmar, 2012)

Nonetheless, if greater board gender diversity generates more conflicting opinions, decision-making becomes time consuming and less effective and in fact, conflicts in the boardroom may be determined by the degree of humanity inherent in male and female conduct. Based on the findings of earlier studies (e.g., Adler2001; Catalyst 2004), Stephenson (2004) discusses the reasons why women, in particular, should be

on boards. First, research evidence shows that boards that have more women directors pay more attention to audit and risk oversight and control. Second, women directors would help companies attract and retain valuable female employees as well as promote positive attitudes among female employees. Third, women directors not only focus on financial performance measures, but also place an emphasis on non-financial performance measures such as innovation and social responsibilities. In addition, Daily and Dalton (2003) argue that “Women’s communication styles tend to be more participative and process-oriented.

Hypothesis 4(H₀₄) stated that board education diversity has no significant effect on stock liquidity of listed firms in NSE. Findings showed that board education diversity had coefficients of estimate which was significant basing on $\beta_4 = 0.102$ (p-value = 0.000 which is less than $\alpha = 0.000$ hence it was concluded that board education diversity had a positive and significant effect on firm stock liquidity. This suggested that there was up to 0.102 unit increase in firm stock liquidity for each unit increase in board education diversity. The findings contradict Fidanoski et al. (2014) results that there is no significant relationship between board education diversity and liquidity decisions. However, Ingley & van der Walt (2001) showed that board education diversity can be considered as the most valuable strategic resource of companies. Similarly, Carver (2002) better qualifications of board members will increase liquidity decisions through professional expertise and advice. Grable (2000) demonstrate that higher educational attainment increases individuals’ propensity to take innovative risk in everyday financial decisions, and Christiansen, Schröter Joensen, and Rangvid (2008) show that higher education also increases participation in stock market investments.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS OF THE STUDY

5.0 Introduction

This section presents the summary of the findings, the conclusion, recommendations based on the findings as well as suggestions for future research on the phenomenon. The conclusion shows the study's focus to contribute to existing information while the recommendations propose what should be most ideal in regards to the area of study especially with regard to the gaps or challenges identified in the investigation.

5.1 Summary of the Findings

The first specific objective of the study was to determine the effect of board nationality diversity on stock liquidity. The findings showed that board nationality has insignificant effect on stock liquidity ($\beta_1 = 0.064$). This means that board nationality has no significant effect of board on stock liquidity was accept null hypothesis.

The second objective of this study was to establish the effect of board age diversity on stock liquidity. This was aimed at testing the hypothesis that there is no significant effect of board age diversity on stock liquidity. The findings have showed that board age has no significant effect on stock liquidity ($\beta_2 = 0.030$). This implies that with a unit increase in board age, stock liquidity will increase by 0.253 units. This means that the null hypothesis stating that there is no significant effect of board age diversity on stock liquidity is accepted and it is concluded that board age diversity enhances the level of stock liquidity.

The third specific objective of this study was to establish the effect of board gender diversity on stock liquidity. This objective was aimed at testing the hypothesis that there is no significant effect of board gender diversity on stock liquidity. The findings

have showed that board gender diversity has a positive and significant effect on stock liquidity ($\beta_3 = 0.136$).

The fourth specific objective of this study was to establish the effect of board education diversity on stock liquidity. This objective was aimed at providing a means of testing the hypothesis that there is no significant effect of board education diversity on stock liquidity. The findings have showed that board tenure has a positive and significant effect on stock liquidity ($\beta_4 = .102$). This means that with each unit increase in board tenure, there is .102-unit increase in stock liquidity. This also means that the hypothesis that there is no significant effect of board education diversity on stock liquidity is not accepted and the conclusion is that board education diversity enhances stock liquidity.

5.2 Conclusion

The primary objective of this study was to establish the effect of board diversity on stock liquidity. Specifically, the study sought to: To determine the effect of board nationality diversity on stock liquidity, to establish the effect of board Age diversity on stock liquidity, to establish the effect of board gender diversity on stock liquidity, to establish the effect of board education diversity on stock liquidity.

The first hypothesis revealed that board nationality diversity does not affect stock liquidity. To a great extent this means that within the firms' have board members with equal nationality will neither improve or decrease stock liquidity, however it should be added here that heterogeneity in boards of directors would further enhance the quality of corporate decisions as the members on the boards are directly involved in issuing, restructuring, takeover exercises, introducing measures to enhance regulatory,

transparency, accountability and independence. Though women's role was not felt in boards of directors, again it could be argued that the effect was only for a short run.

Second hypothesis showed that board age diversity does not affect stock liquidity. This can be through the gelling of young and old, experienced and inexperienced so that there is a pool of diverse ideas that can be positively harnessed towards a specific objective and in this case, stock liquidity. This also means that there are different approaches to situations, for instance, based on the risk averseness of the old compared to the young members of the board. In addition, staff morale would increase with increase diversity of age because the employees would look at the board and see themselves being represented in terms of age hence the feeling of having one of their own to push for their agenda in the firm. In particular, it would seem that age diversity is most helpful when the task at hand is of complex character. In a study performed by Wegge et al. (2008), the effect of age diversity upon performance was examined. Reviewing previous studies on age and gender diversity, they found the familiar mixed results. Based upon this they theorized that the complexity of the task could have a moderating effect upon the influence of diversity. Various theoretical frameworks from work psychology give reasons why diversity could have negative as well as positive influences - the similarity-attraction and social identification models (the desire of the individual to emulate and become part of the group) both predict negative effects of diversity while the model for decision making in teams make the opposite predictions

The findings have also showed that board gender diversity enhances stock liquidity. This means that the more gender balanced a board is, especially in terms of membership of female members, the more the board is expected to be a source of

great and diverse ideas that address diverse sets of customers, the more the firm is positively viewed externally and to its customers, the more the firm increases its market base thereby diversifying its products and services. In addition, this would also mean enhanced competitiveness in relation to competitors. On the other hand, there is also risk of conflict in opinion which would result in time consuming decision process as well as the presence of male-female superiority behavior that can have a negative outcome. These findings are consistent with that of Darmadi (2012) on top female executives in Indonesia but inconsistent with those of Marimuthu and Kolandaisamy (2009) and Shukeri et al. (2001). Both of the latter studies find no association between gender diversity and stock liquidity in Malaysia.

The representation of women on the board results in lower performance, a finding consistent with studies carried outside the US and other developed countries (Zahra & Stanton 1988; Shrader et al. 1997; Adams & Ferreira 2009). However, the evidence is inconsistent with the evidence in some other studies of the situation in the US (Carter et al. 2003, 2010; Erhardt et al. 2003; Keys et al. 2003). Mixed results are documented for ethnic and age diversity. While the market performance is unaffected by ethnic and gender diversity, the accounting-based performance does increase, which is consistent with Shukeri et al. (2012). However, the evidence is not consistent with Carter et al. (2010) who find that minorities on the board is neither associated with the roA nor tobin's q. As for age diversity, the market appears to be indifferent as to the issue of age diversity. However, the accounting return suffers if the directors of the board tend to be young. In other words, the accounting performance of a firm is better if its board is dominated by old directors

With regard to board education diversity, the findings have showed that board tenure enhances the performance of the firm. Given that this is about the time of service on the board, a mix in terms of experience goes a long way in diversifying ideas and approaches to certain challenges. This provides a means of having diverse perspectives given the experience of the members and also is a basis of enhancing the skills of the members by learning from each other. The younger members are expected to be more risk averse and innovation focused while the experience of the old members ensures quality of the decisions made.

5.3 Recommendations

In light of the findings, there are a few implications for academic and practitioners.

There is evidence that the high diversity of gender in the board has a positive impact on stock liquidity. Therefore, in order to increase stock liquidity, it is important to include women and men in the board but in an equal proportion. Similarly, this is because gender diversity affects stock liquidity positively. Even though the Government has come up with a policy on women appointment to the board, but it is the firms themselves which need to reap the benefits from having women on the board.

Women need to equip themselves and be ready to assume the directors' roles. The women who are already holding the top posts need to promote those women who are currently in the middle level to be ready for top posts. While it is essential to have a gender diverse board, it is also important to put in place policies that would guide the running of such a board in order to ensure that despite the diversity, the level of effectiveness of the board is above board. This also means that any superiority undertakings would be curtailed. This would also ensure that respect is entrenched in

the decision making process that every time decisions are made; the goal of the firm provides the basis for the making of important decisions despite the gender of the board member.

The study has shown that the education diversity of the board of directors is positively correlated with stock liquidity. For this reason, it is extremely necessary for companies to select directors of different educational levels in equal proportions. Additionally, the inclusion of board members with varying levels of education and experience enhance stock liquidity. As such, having an education diversified board members should be a key priority for firms as it affects stock liquidity positively.

The study found no relationship between board national diversity and stock liquidity. Therefore, the study recommends that the boards of firms should be made up of both the local and foreign directors and in equal proportion. Nationality diversity should be encouraged because the stakeholders, and more importantly the consumers, are from various national groups. In terms of national diversity of the board in the firm, caution should be taken through balancing the level of diversity because there can be other factors at play such as regional balance and location of the firm. This is because the level of diversity can result in communication breakdown in the board.

5.4 Suggestions for Future Research

The main objective of this study was to establish the effect of board diversity on stock liquidity. The findings have revealed significant effects of board nationality diversity, board gender diversity, board education diversity and board age diversity. Firm size as a control, did not have a significant effect on stock liquidity. However, there is need to investigate further basing on the control on firm age and industry in order to enrich the findings of this study. Furthermore, further investigation of these factors and stock

liquidity especially how the type of sector of the firm influences stock liquidity would provide a firm-level perspective of board diversity. This sectoral analysis would also aid in the development of policies that can be used in assessment of stock liquidity while at the same time assuring maximum benefit for the shareholders. A mix between primary data and secondary data and their analysis would provide a foundation of triangulation of the outcomes with the purpose of capturing diverse perspectives of the same phenomenon. This would call for a different research design approach.

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APPENDICES

Appendix I: Data Collection Sheet

This data collection sheet was used to guide this study while analyzing company's documents.

Firms Name	Gender diversity	Education diversity	National diversity	Age diversity	Firm size	Stock liquidity
Listed Firms in Nairobi Securities Exchange						
Agricultural						
Eaagads AIMS						
Kapchorua Tea AIMS						
Kakuzi Ltd						
Limuru Tea AIMS						
Sasini Ltd						
Williamson Tea AIMS						
COMMERCIAL						
Atlas Development & Support Services Ltd GEMS						
Deacons (East Africa) Plc AIMS						
Eveready EA						
Express (K) AIMS						
Hutchings Biemer KQ						
Longhorn Publishers AIMS						
Nairobi Business Ventures GEMS						
Nation Media						
Standard Grp						
TPS EA						
Uchumi						
WPP Scangroup						
TELECOMMUNICATION AND TECHNOLOGY						
Safaricom Ltd						
AUTOMOBILES AND ACCESSORIES						
Car and Gen						
Sameer						
BANKING						
Barclays						
CFC Stanbic Holdings Ltd						
I&M Holdings Ltd						
Diamond Trust Bank (K)						
Housing Finance Co Ltd						

Kenya Commercial Bank Ltd						
National Bank of Kenya Ltd						
NIC Bank Ltd Ord						
Standard Chartered Bank Ltd						
Equity Group Holdings Ltd						
The Co-operative Bank of Kenya Ltd						
INSURANCE						
Jubilee Holdings Ltd						
Pan Africa Insurance Holdings Ltd						
Kenya Re						
Liberty Kenya						
Britam Holdings						
CIC Insurance Group Ltd						
Sanlam						
INVESTMENT						
Centum Investment						
Home Africa Gems						
Kurwitu Ventures Ltd GEMS						
Olympia						
Trans-Century AIMS						
INVESTMENTS SERVICES						
Nairobi Securities Exchange						
MANUFACTURING AND ALLIED						
A. Baumann AIMS						
Carbacid						
BOC Gases						
British American Tobacco Kenya Ltd						
EABL						
Mumias Sugar Co. Ltd						
Unga Group Ltd						
Flame Tree Group Holdings GEMS						
K Orchards AIMS						
CONSTRUCTION AND ALLIED						
ARM Cement ltd						
Bamburi Cement Ltd						

Crown Berger						
EA Cables						
E.A. Portland Cement ltd						
ENERGY AND PETROLEUM						
KenolKobil						
Total Kenya Ltd						
KenGen						
Kenya Power						
Umeme						
REAL ESTATE INVESTMENT TRUST						
STANLIB FAHARI I- REIT						