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IMPACT OF GENDER DIVERSITY IN BOARDS ON FIRM VALUE: A STUDY ON KENYAN AND EGYPTIAN LISTED COMPANIES

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DECLARATION

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

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Abstract

The purpose of this paper is to determine (1) whether there is any relationship between gender diversification in boards of listed companies and the firm value and (2) if the relationship varies across industries. Data from two countries, Kenya and Egypt, is used over a period of five years, 2010-2014. The two countries are chosen because of their difference in culture that allows one country to have more women on the boards compared to the other. In this case Kenya has more female representation in boards compared to Egypt. Panel data techniques are used to establish the relationship between gender diversity in boards and firm value. In Kenya gender diversity in boards is found to have a negative impact on firm value. However, industry specific results vary as the relationship is found to be negative in the banking industry, positive in the construction industry and no relationship is found in the commercial services industry.

1 Introduction

1.1 Background

Corporate governance is generally described as the way in which firms are controlled and managed in order to enhance shareholder value. La Porta, Lopez-De-Silanes, Shleifer and Vishny (2000) define corporate governance as a set of mechanisms through which outside investors protect themselves against expropriation by the insider.

The separation of ownership and control of capital in publicly held companies brings about conflicts of interest between principals and agents. Whereas the basic motivation of shareholders is to maximize their wealth by enhancing the value of the firm, the objectives of managers may include enhancement of personal wealth and prestige. This divergence of interests often leads managers to engage in insider dealings where there are no mechanisms for effective monitoring, ratification and sanctioning of managerial decisions.

Corporate governance mechanisms are adopted in order to align the interests of managers with those of the shareholders. To enhance their monitoring role, and ensure capital is applied to its intended purpose, shareholders choose individuals to represent them on the board of directors. The Board is therefore, put in place to safeguard the interests of principals from agents who are bent on extracting private benefits from the organization.

It has been argued that largely governed firms perform better and that good corporate governance is of essence to a firm. Previous studies have provided a connection between the corporate governance mechanisms and firm performance. Bebchuk, Cohen and Ferrell (2009) indicate that well-governed firms have higher firm performance.

According to Leng (2004) the degree of ownership of shares in a company by institutional investors, the level of debts, and the size of the company have a significant impact on the earnings of a firm. It was also determined that several corporate governance variables did not have any significant impact on earnings of

corporations. Such variables included the proportion of non-executive directors in a company, degree of ownership of the firm attributable to largest shareholder, duality of CEO and board chairman and role of chairman of audit committee as non-executive director (Leng, 2004).

A study by Nyamongo & Temesgen (2013) covered a sample of 37 commercial banks in Kenya for a period of five years, 2005-2009 and showed that a large board size tends to negatively impact performance of a bank. In their study it was also determined that the greater the number of independent board directors, the higher the performance of commercial banks. No evidence was found to indicate that CEO duality or otherwise has an impact on the performance of commercial banks in Kenya.

Iraya, Mwangi & Muchoki (2015) in their study on the impact of corporate governance on the earnings of a firm, found that a unit increase in ownership concentration will cause a decrease in earnings management, a unit increase in board size will lead to a decrease in earnings management, a unit increase in board independence will lead to a decrease in earnings management, a unit increase in board activity will lead to an increase in earnings management and a unit increase in CEO duality will further lead to an increase in earnings management.

Elsayed (2010) investigates the relationship between CEO duality and corporate performance for 92 Egyptian firms during the period from 2000 to 2004. The empirical findings reveal no evidence regarding the impact of CEO duality on corporate performance. Omran, Bollbol & Fatheldine (2008) examine the association between ownership concentration as a corporate governance mechanism and corporate performance, using 304 firms as a representative group from the Arab equity markets including Egypt, Jordan, Oman and Tunisia. They conclude that ownership concentration has no significant impact on firm performance. Contrary to the agency theory (CEO non-duality structure) and the stewardship theory (CEO duality structure), Elsayed (2010) demonstrates that the appropriate board leadership structure varies with firm size, age and ownership structure.

Wahba (2015) using a sample of 40 Egyptian-listed firms demonstrates that increasing the proportion of non-executive board members under CEO duality negatively affects firm financial performance.

The increased level of participation by institutional investors appeared to lead to a greater monitoring role of these investors ensuring a higher chance of improved financial performance by the firm. Rebleiz and Salameh (2006) established that a critical mass of outside independent directors do improve on the market returns of construction firms, separation of CEO and chairman role also positively impact on market returns. Conversely, the study indicates that the size of the board, the number of meetings held by the board, and the number of independent committees do not significantly impact on the market returns.

Relationships between the corporate governance practices and financial performance of firms in developed and developing countries have been identified using various techniques of regression analysis. Corporate governance generally has been seen to have a positive relationship with the value of the firm. However, contradicting results have been found with respect to the relationship between specific corporate governance practices and the value of the firm.

1.2 Problem statement

A characteristic of effective boards of directors is diversity. Diversity in the board means that there is a variety of skills, experience and perspectives that contribute to the board being effective in its roles. Previous studies have looked at the impact of independent directors on financial performance (Leng, 2004), the impact of CEO duality on financial performance (Boyd, 1995)and (Brickley, Coles, & G, 1997) and even the impact of an independent director being the chairman of the audit commitee (Leng, 2004).

However, little empirical work has been done on the impact of gender diversity of the board on value of firms. Women are now taking up leadership roles in the society and firms are now appointing more women to the Board of Directors. Carter, Simkins and Simpson (2003) find a positive relationship between the value of a firm as measured

by the Tobin's Q and diversity in the board. On the other hand, Campbell, and Minguez-Vera (2008) find no relationship between gender diverse boards and Tobin's Q.

Further, Solakoglu (2013) has shown that the impact of gender diversity of boards on firm value will depend on the industry the company is in. Brammer, Millington and Paveline (2007) also suggest that the demographic composition of consumers in that industry will determine the impact of a gender diverse board on firm value.

As a result of the conflicting findings, this reseach aims to identify the impact of gender diversity of boards on firm value of companies listed on the Nairobi Securities Exchange (NSE) and Egyptian Exchange (EGX) and the difference in the relationship between firm value and gender diversity of listed companies across industries.

1.3 Research objectives

The objective of this paper is to identify the corporate governance practices that significantly influence the value of firms in different industries.

The specific objectives are

(1) To investigate the relationship between firm value and gender diversity of boards of listed companies in kenya.
(2) To determine the difference in the relationship between firm value and gender diversity of listed companies in the banking, commercial services and construction and allied industries in Kenya and Egypt.

1.4 Research Questions

1. What is the relationship between gender diversity of boards of companies listed in kenya and firm value?
2. Does the relationship between gender diversity of boards and firm value differ across industries in Kenya and Egypt?

1.5 Significance of the study

The primary purpose of this study is to identify, and contribute to current knowledge on, corporate governance practices that affect the value of the firm. The parties that will benefit from this study are the Centre for Corporate Governance in Kenya, Capital markets Authority in Kenya and Investors.

The Centre for Corporate governance Kenya will get more information when coming up with corporate governance best practices that companies can adopt. Capital Markets Authority in Kenya will gain more knowledge on how to improve corporate governance practices of listed companies. The Investors will get more insight on factors that affect the firm value of firms they have invested in or firms that are potential investments.

2 Literature review

One role of the board of directors is the monitoring role. It is an important corporate governance control mechanism. Gender composition of the board can affect the quality of this monitoring role and thus the value of the firm. The various arguments on the impact of gender diversity are reflected in this section.

2.1 Agency theory and the link between board diversity and firm value

Given that there is no theoretical framework that gives a clear prediction of how board diversity impacts on the firm value, researchers such as Carter, Simkins and Simpson (2003) have used the agency theory as a theoretical basis for their studies.

According to Fama and Jensen (1983), the role of the board in an agency framework is to resolve agency problems between managers and shareholders by setting compensation and replacing managers that do not create value for the shareholders. A key element of an agency view of the board is that outside board members will not collude with inside directors to work against shareholder interests because directors have incentives to build reputations as expert monitors. Therefore, in order to meet the interests of shareholders, board independence is critical.

Carter Simkins and Simpson (2003) proposes that a diverse board is a better monitor and is less likely to act against the interests of shareholders. This implies that diversity increases the independence of a board. It is argued that diversity increases board independence because people with a different gender, ethnicity, or cultural background might ask questions that would not come from directors with more traditional back-grounds. However, a different perspective may not necessarily result in more effective monitoring because diverse board members may be marginalized. There is, however, no prior evidence that supports these views.

2.2 Case for positive relationship between board diversity and firm value

In their study on impact of board diversity and firm value for the Fortune 1000 firms, Carter Simkins and Simpson (2003) found that there is a positive relationship between the presence of women and minority on the board and firm value as measured by

Tobin's Q. This is consistent with Smith, Smith and Verner (2006) who suggest that gender diversity enhances problem solving due to a variety of perspectives hence more alternatives are presented for evaluation.

A study in the U.S by Erhardt, Werbel and Shrader (2003) indicated that women and minority groups have a positive impact on the operating performance of the firm as measured by return on assets and return on investments. Carter et al (2003) further suggest that having more women on the board increases the independence of the board as women are likely to ask questions which men will not.

Through their intuitive reasoning, Robinson and Dechant (1997) came up with five propositions as to why diversity in the board improves the performance of a firm. First, corporate diversity promotes a better understanding of the marketplace. Markets are becoming more diverse and matching the diversity of a company to the diversity of the company's potential customers and suppliers increases the ability to penetrate markets. Second, diversity increases innovation and creativity. The attitudes, beliefs and cognitive functioning of the population varies with demographic factors such as age, gender, and race.

Third, diversity produces more effective problem-solving. Though, heterogeneity may initially produce more conflict in the decision making process, as a result of having a variety of perspectives, decision makers have more alternatives to evaluate and they are forced to more carefully explore the consequences of these alternatives.

Fourth, diversity enhances the effectiveness of corporate leadership. Homogeneity in the top management of a company is believed to result in a narrow perspective while diverse top managers take a broader view. With a diverse top management there is a better understanding of the complexities of the environment. Fifth, diversity promotes more effective global relationships. Cultural sensitivity is critical in the international environment and ethno-cultural diversity makes corporate leaders more sensitive to cultures not in their regions.

Solakoglu (2013) reports that gender diversity in the board improves performance for above average performing firms. He used data from Turkish firms over a one year

period, 2005-2006 and used Return on Assets, Return on Equity and monthly return divided by monthly standard deviation of returns as measures of firm performance.

It has been argued that greater board diversity increases a firm's competitive advantage which consequently increases the firm value. Robinson and Dechant (1997) based this argument on intuitive reasoning. They defined diversity in terms of age, race and gender. They argued that greater diversity promotes better understanding of market place as the diversity of potential customers is matched by diversity of directors in the board, thereby, increasing the ability to penetrate the market.

2.3 Case for negative relationship between board diversity and firm value

While some researchers have identified a positive relationship between the board gender composition and firm value, others have found evidence to refute those findings. Earley and Mosakowski (2000) state that homogeneous groups tend to communicate more frequently as it is likely that they share the same opinions. The frequency of communication and the similarity of opinions show some sense of agreement in homogeneous groups, hence, less conflict.

Likewise William and O'Reilly (1998) argue that homogeneous groups are more comparative and experience few emotional conflicts. It has been argued that greater diversity among board members generates more conflicts causing the decision making process time consuming and less effective. Carter et al (2003) explicitly states that even though board diversity positively influences a firm's value, if decision making takes too much time due to diversity, operating performance of firms may decrease in industries that are dynamic and need a quick response to market changes.

Jianakopolis and Bernasek (1998) look at gender diversity from a risk point of view. They conclude that women are more risk averse than men. Women therefore make decisions that involve less risk. Based on the risk return trade off, greater returns are achieved when more risk is taken. Therefore, the low risk decisions made by women yield low returns consequently lowering the value of the firm.

However, in his study on Turkish firms, Solakoglu (2013) factored in risk characteristics of males and females, as suggested by Jianakopolis and Bernasek

(1998), and still found a positive relationship between gender diversity of the board and firm performance.

Cox and Blake (1991) describe women as being a cost to the firm. They suggest that women increase the costs of the firm and they attribute this increase to higher turnover and absenteeism of women who are dissatisfied with their careers and prospects for advancement. This applies to firms that do a poor job of integrating their diverse workforce. Therefore, it is expected that firms that deal with diversity related issues should have cost advantages over firms that do not (Cox & Blake, 1991).

Gender diverse boards encourage stronger identification, by directors, with the opinions expressed by other directors of the same gender hence increasing the likelihood of conflict. This can be problematic if a firm is operating in a highly competitive environment where the ability to react quickly to market changes is important (Cox & Blake, 1991).

Bohren and strom (2007) studied Norwegian non-financial firms listed on the Oslo Stock Exchange over the period 1989-2002 and established that higher board diversity produced by larger board size, stronger gender mix, and more employee directors are all negatively related to performance as measured by Tobin's Q as diversity reduces the board's effectiveness as a decision maker.

Shrader, Blackburn, and Iles (1997) investigate the relationship between the percentage of female board members and Return on Assets and Return on Equity for a sample of approximately 200 Fortune 500 firms. They find a significant negative relationship between the percentage of women on the board and the accounting measure of firm performance.

2.4 Other views on the relationship between board diversity and firm value

Farrel and Hersh (2005) and Campbell and Minguez-Vera (2008) find no relationship between gender in the board and firm value. Rose (2007) conducts a study on Danish firms and finds no significant link between female representation on Danish boards and the Tobin's Q measure of firm performance.

It is important to note that the results of Rose (2007) are different from those of Smith, smith and Verner (2006) who also conducted a study on 2500 Danish firms as well. Female representation in the board was found to have a positive impact on firm performance (Smith, Smith, & Verner, 2006). While the performance measure in Rose (2007) is Tobin's Q, Smith, smith and Verner (2006) used gross value added to net turnover, profit on ordinary operations to net turnover, ordinary results to net assets and net result after tax to net assets as measures of performance. This could explain the different results.

Randoy, Thomsen and Oxelheim (2006) conducted a study on 500 large companies from three Scandinavian Countries, Denmark, Norway and Sweden. They found no significant relationship between board gender diversity and the Return on assets and Stock market performance in the 500 companies.

In their study Farrel and Hersch (2005) attribute the increase in female board appointment in the U.S to greater calls for diversity as did Brammer, Millington and Paveline (2007) who looked at female representation from an ethical point of view. Female representation is not a means to an end but rather an end in itself (Brammer, millington, & Paveline, 2007).

Ethical arguments for equality of opportunity argue that it is wrong for individuals to be excluded from upper tiers of business because of their race or gender, regardless of their ability (Burke, 1997). Firms are encouraged to increase diversity of boards on the grounds that it achieves for society an outcome that is more equitable and fair.

Burke (1997) proposes that economic benefits from equality of opportunity in the selection of directors arises from the fact that systematic, non-selection of able candidates has the effect of damaging the financial performance of the firm. This is because the firm will forgo access to some range of resources by excluding some of the groups from decision making roles, if a variety of valuable abilities are not evenly distributed across demographic groups.

Singh, Vinnicombe and Johnson(2001) who conducted a large survey of women on top U.K boards emphasizes that there is need for a better understanding of how

women directors contribute to their boards' performance emphasizing that the theory linking board diversity to firm performance is not well developed.

Robinson and Dechant (1997) suggested that greater diversity promotes better understanding of market place as the diversity of potential customers is matched by diversity of directors in the board. In addition to their ethical point of view, Brammer, Millington and Paveline (2007) furthered this argument by showing that female directors are associated with retailing, banking, media and utilities sectors which are associated with proximity to consumers. On the other hands, producer oriented sectors such as engineering and business activities that are characterized by isolation from final consumers have fewer female directors. . Therefore implying that board composition will vary across industries according to demographic composition of consumers in that industry.

Part of the conclusion by Solakoglu (2013) was that firms in the manufacturing sector that do not require quick decision making respond positively to gender diversity while firms in non-manufacturing sectors either show no response or a negative response. This implies that the type of industry is important for the sign and significance of the impact of gender diversity on performance.

2.5 Summary

Shrader, Blackburn and Iles (1997) find a significant negative relationship between the performance of a firm and the gender diversity of the boards. Carter et al (2003) find a significant positive relationship between Tobin's q and the proportion of women on boards of Fortune 1000 firms after controlling for size, industry and other corporate governance variables.

Erhardt, Werbel and Shrader (2003) report that the percentage of women on large U.S firms is positively associated with two accounting measures, ROA and ROI. Farrel and Hersh (2005) report an insignificant stock market reaction to announcements of female additions to boards of fortune 500 companies and conclude that the increase in females to U.S company boards is in response to calls for greater diversity and not as a response to business case for female directors.

For the non U.S cases, Smith et al (2006), in their study of Danish firms, find a positive link between female board representation and accounting measures. Rose (2007) who conducts a study on Danish firms as well finds no significant relationship between female board representation and Tobin's Q. Bohren and Strom (2007) reports a significant negative relationship between the proportion of women on the boards of Norwegian firms and Tobin's Q. Randoy, Thomsen and Oxelheim (2006) find that gender diversity has no impact on the ROA and stock market performance of the largest 500 Scandinavian firms from Denmark, Norway and Sweden.

The varying results are attributed to the studies relating to different countries both developed and developing as well as different time periods. Gender diversity may be dependent on timing and the laws at the time. Also, different estimation methods have been used whereby some researchers controlled for endogeneity while others did not.

As a result of the varying conclusions, this study focusses on Kenya and Egypt. Panel data is used so as to provide more reliable information than would otherwise be generated using a cross sectional analysis.

3 Methodology

3.1 Research Design

This study has a correlational research design as it seeks to identify a relationship between gender diversity in boards and the firm value as measured by market capitalization. The primary purpose of this study is to examine the relationship between gender diversity in boards and the market capitalization by looking at two countries, Kenya and Egypt, one with more female representation in boards than the other. Therefore, a correlational research design is appropriate.

3.2 Population and sampling

The population of this study includes 291 listed companies 66 of which are listed in the NSE and 225 are listed in the EGX. 27 of the 66 listed in the NSE do not have complete information and therefore, 39 are used in this study. Only 12 of the 225 companies listed in the EGX have complete information that is written in English. Therefore, the sample in this study consists of 51 listed companies. 39 are listed in the NSE and 12 are listed in the EGX. The sample size is not significantly different from other studies. (Leng, 2004) used 77 Malaysian companies over a four year period from 1996-1999. The sample includes companies in eight different industries.

The period of study is from 2010-2014. This is similar to (Campbell & Minguez-Vera, 2008) who used a five year period, 1995-2000, (Rose, 2007) and (Leng, 2004) who used a four year period from 1998-2001 and 1996-1999 respectively.

3.3 Data and data collection

Panel data is used in this research due to its superiority to cross sectional data. Panel data offers a solution to the problem of bias caused by unobserved heterogeneity which is a common problem in fitting of models with cross-sectional data sets. Panel data sets also reveal dynamics that are difficult to detect with cross-sectional data and has a large number of observations (Dougherty, 2007).

Data will be obtained from secondary sources which are the annual reports of the listed companies and the NSE and EGX websites. Therefore, the data collection

instruments used in this study are records which include the company annual reports and NSE and EGX websites

3.4 Data analysis

Previous studies have used regression analysis to test the impact of corporate governance practices on firm value Campbell and Minguez-Vera (2008), Carter et al (2003) and Solakoglu (2013).

Gujarati (2003) and Dougherty (2007) suggest two methods of analysing panel data, the Fixed Effect Model (FEM) and the Random Effect Model (REM). The FEM assumes that the slope coefficients of the explanatory variables are all identical for all firms. The intercept in the regression model is allowed to differ among individual firms in recognizing that each individual or cross-sectional unit may have some special characteristics of its own.

The REM assumes that the intercept of an individual unit is a random drawing from a much larger population with a constant mean value. The individual intercept is then expressed as a deviation from this constant mean value.

The Hausman test is used to check which of the two models is suitable to accept. The test is used to detect violation of the assumption that the independent variables are not correlated in the REM. If the independent variables are not correlated then the coefficient estimates in the FEM should be the same as the coefficient estimates in the REM.

There will be a null hypothesis and an alternative hypothesis.

Null hypothesis: REM is appropriate

Alternative hypothesis: FEM is appropriate

If $p<0.05$ then the null hypothesis will be rejected and the results of the FEM will be appropriate, otherwise, the results of the REM will be appropriate (Hausman, 1978). Therefore, in this study the Hausman test will be used to determine which model will be used.

The main independent variable in this study is the proportion of female board members on the board, other independent variables include the board size, the proportion of independent directors on the board, the firm size and the age of the company as used in previous studies (Campbell & Minguez-Vera, 2008) and (Carter, Simkins, & Simpson, 2003). The inflation rate and Gross Domestic Product are used as control variables for country specific factors.

The dependent variable is the market capitalization of the companies which is used as a representation of the firm value. Previous studies have used Tobin's q as a measure of firm value and ROA and ROE as a measure of firm performance. and ratios such as ROA and ROE as a measure of firm performance. Carter et al (2003) and Smith et al (2006) use Tobin's q as a measure of firm value. However, the Tobin's Q ratio is obtained by measuring market values against replacement value of assets. The estimation of the replacement values of assets is difficult as some of the assets may be specific to the companies and not openly sold in the market. Therefore in this study, the market capitalization is used as a measure of firm value.

The model equation is:

$$\ln MKTCAP = \ln BS + PW + PNEDs + \ln FS + \ln AGE + \ln GDP + INFL$$

Where:

MKTCAP is the market capitalization of a company. It is obtained by multiplying the number of shares of a company by the market value of each share at the end of the period.

BS is the board size and it is expected to have an impact on the decisions made by the board which will consequently affect the performance of the firms' shares in the securities exchange market.

PW is the proportion of women on the board

PNEDs is the proportion of NEDs on the board which has been proved to have a positive relationship with the value of companies. Bebchuk, Cohen and Ferrell (2009)

have shown that firms that are properly governed with a high number of NEDs performs better.

FS is the firm size measured by the total assets. The size of the firm affects its performance. Generally large firms are said to have more value than small firms.

AGE is the number of years the company has been in existence. Generally companies that have been in existence for long are likely to be mature and to be market leaders in their industries as they have had more time to accumulate assets and to study the markets and understands how they behave. This gives them an advantage against new entrants.

GDP is the country gross domestic product. This is representative of the economic state of the country. The performance of shares during bad economic states is low whereas in good economic states it is high.

INFL is the inflation rate. During times of hyperinflation stocks tend to underperform and perform well when the inflation rate is low. This is therefore an important variable as it directly affects the market capitalization of the companies.

First, the model will be used to determine the relationship between the independent variables and the dependent variable in Kenya. Then, the model will be used to determine the relationship using data from three industries, Banking, Commercial Services and Construction. The data for each industry will be looked at separately and the results for the two countries compared

4 Results and analysis

4.1.1 Pre-estimation tests

Before running the model the data was tested for stationarity. As the number of panels is greater than the time period the Harris-Tzavalis and Im- Pesaran shin test are viable unit root tests. However, the Im-Pesaran unit root test requires a minimum of seven time period and this study has five. Therefore, the Harris-Tzavalis is appropriate.

Conditions for the Harris-Tzavalis unit root test include: the number of panels should be more than the time period, no serial correlation and homoscedasticity. The use of panel data eliminates collinearity and so the data is only tested for heteroskedasticity.

The results show that there is heteroskedasticity and therefore the variable 'lnage' is made a constant and all other variables are divided by this constant to remove heteroskedasticity. The results were as follows:

Table 1

Homoscedasticity Results for Kenyan Data

```
estat hettest
Breusch-Pagan / Cook-Weisberg test for
heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of lnmktcap_star

        chi2(1)     =    2.19
        Prob > chi2 =  0.1387
```

Table 2

Homoscedasticity Results for Egypt Data

```
estat hettest

Breusch-Pagan / Cook-Weisberg test for
heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of lnmktcap

        chi2(1)     =    1.64
        Prob > chi2 =  0.2005
```

After ensuring homoscedasticity in the data, the Harris-Tzavalis unit root test was conducted to determine if the data used in the study was stationary. All variables other were proved to be stationary. The data was then used to run the model.

The general results obtained for Kenya are shown in Table 4. The Hausman test showed that the FEM was the appropriate model. The REM is rejected as the Hausman test gives a p value that is less than 0.05. In this case, $p = 0.0004$ as shown in Table 3. Inflation is seen to be the only significant variable that explains the market cap of listed companies in Kenya. There is a negative relationship between the inflation rate and the market cap of the companies.

Table 3

Hausman Test Results

	(b) FEM	(B) REM	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
boardsize	0.193782	0.193869	-8.7E-05	.
lnbs	-1.87575	-1.0056	-0.87014	0.110935
pw	-1.02193	0.044918	-1.06685	0.273536
pneds	0.324795	0.196613	0.128182	.
lnfs	0.067566	0.233519	-0.16595	0.028375
lnage	1.737129	0.528681	1.208447	1.328833
lngdp	0.150756	0.067953	0.082803	0.196879
infl	-5.78143	-5.41712	-0.36431	

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

Chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 28.45

Prob>chi2 = 0.0004

(V_b-V_B is not positive definite)

Table 4

FEM results for Kenya

lnmktcap	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
boardsize	0.193782	0.130447	1.49	0.140	0.0639976	0.451562
lnbs	-1.87575	1.36451	-1.37	0.171	-4.572188	0.82069
pw	-1.02193	0.926557	-1.1	0.272	-2.852921	0.809058
pneds	0.324795	0.508098	0.64	0.524	0.6792694	1.328859
lnfs	0.067566	0.074969	0.9	0.369	0.0805817	0.215713
lnage	1.737129	1.363419	1.27	0.205	0.9571545	4.431412
lngdp	0.150756	0.30049	0.5	0.617	-0.443049	0.744561
infl	-5.78143	1.40752	-4.11	0.000	-8.562863	-3
_cons	112.9077	76.75678	1.47	0.143	-38.77314	264.5885

The results from the banking industry in the two countries are shown in Table 5 and 6.

Table 5

Banking Industry Results for Kenya

lnmktcap	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lnbs	-0.39653	0.512317	-0.77	0.444	-1.438843	0.64579
pw	-2.73434	1.581446	-1.73	0.093	-5.95181	0.48314
pneds	-1.673	1.073545	-1.56	0.129	-3.857144	0.511145
lnfs	0.060632	0.092075	0.66	0.515	0.1266947	0.24796
lnage	5.227216	4.746251	1.1	0.279	-4.429105	14.88354
lngdp	0.385681	0.548473	0.7	0.487	-0.730196	1.501559
infl	-3.55209	1.952802	-1.82	0.078	-7.525092	0.420919
_cons	284.0926	255.4303	1.11	0.274	-235.5843	803.7694

Table 6

Banking Industry Results for Egypt

lnmktcap	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lnbs	-1.73237	1.299038	-1.33	0.182	-4.278433	0.813703
pw	-7.29282	3.143512	-2.32	0.02	-13.45399	-1.13165
pneds	0.252351	1.08263	0.23	0.816	-1.869565	2.374267
lnfs	1.479187	0.155953	9.48	0	1.173525	1.784848
lnage	-0.0659	0.022057	-2.99	0.003	0.1091279	-0.02267
lngdp	0.210624	2.557385	0.08	0.934	-4.801757	5.223006
infl	-14.3183	18.03535	-0.79	0.427	-49.66697	21.03029
_cons	-10.5722	73.4511	-0.14	0.886	-154.5337	133.3893

In Kenya, the model shows that the proportion of women in the board and the inflation rate are the significant variables that affect the market capitalization of companies in the banking industry. Whereas, the model shows that the proportion of women, the firm size and the age of the companies are the significant variables that affect the market capitalization of companies in the banking industry in Egypt.

The results from the commercial services industry for the two countries are shown in Table 7 and 8.

Table 7

Commercial Services Results for Kenya

lnmktcap	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lnbs	1.675131	1.849058	0.91	0.365	1.94896	5.299218
pw	5.344676	4.14185	1.29	0.197	-2.7732	13.46255
pneds	3.394958	3.23995	1.05	0.295	2.95523	9.745144
lnfs	0.126961	0.380037	0.33	0.738	-0.6179	0.87182
lnage	-0.76372	0.329068	-2.32	0.02	1.40869	-0.11876
lngdp	-0.04817	0.958319	-0.05	0.96	1.92644	1.830097
infl	-5.45602	6.243308	-0.87	0.382	17.6927	6.780643
_cons	-16.0797	41.98341	-0.38	0.702	98.3657	66.2063

Table 8

Commercial Services Results for Egypt

lnmktcap	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lnbs	29.58438	16.05582	1.84	0.065	-1.88446	61.05322
pw	0	(omitted)				
pneds	0	(omitted)				
lnfs	0.552677	0.675981	0.82	0.414	-0.77222	1.877575
lnage	0.182513	0.048045	3.8	0	0.088345	0.27668
lngdp	1.668236	0.810164	2.06	0.039	0.080343	3.256129
infl	13.24455	6.173455	2.15	0.032	1.144799	25.3443
_cons	-106.352	55.40106	-1.92	0.055	-214.936	2.231781

In the commercial services industry, the age of the companies is seen to be a significant factor that impacts on the market capitalization of the companies. However, it is the only variable that is significant in the Kenyan scenario. The board

size, the gross domestic product and inflation are other variables that are significant in the Egyptian scenario. Important to note is that the proportion of women and the proportion of NEDs was omitted in the model due to collinearity and therefore their impact on the market capitalization cannot be determined in this case.

The results from the construction and allied industry are shown in Table 9 and 10.

Table 9

Construction and Allied Results in Kenya

lnmktcap	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lnbs	2.078328	1.942921	1.07	0.285	-1.72973	5.886382
pw	0.429902	2.9044	0.15	0.882	-5.26262	6.122422
pneds	-1.88853	3.641998	-0.52	0.604	-9.02671	5.249658
lnfs	0.406873	0.294385	1.38	0.167	-0.17011	0.983856
lnage	2.158168	1.314519	1.64	0.101	-0.41824	4.734577
lngdp	-1.03851	0.72992	-1.42	0.155	-2.46913	0.392108
infl	1.359936	4.559519	0.3	0.766	-7.57656	10.29643
_cons	174.9662	84.22613	2.08	0.038	9.886033	340.0464

Table 10

Construction and Allied Results in Egypt

lnmktcap	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lnbs	-2.11536	2.082725	-1.02	0.31	-6.19743	1.966703
pw	22.37607	6.708407	3.34	0.001	9.227837	35.52431
pneds	0.174602	0.492929	0.35	0.723	-0.79152	1.140726
lnfs	0.957647	0.597621	1.6	0.109	-0.21367	2.128963
lnage	0.092937	0.024299	3.82	0	0.045312	0.140561
lngdp	-0.27991	0.450644	-0.62	0.535	-1.16316	0.603332
infl	1.160683	3.398331	0.34	0.733	-5.49992	7.821288
_cons	7.938939	19.91602	0.4	0.69	-31.0958	46.97363

In the construction and allied industry, no variable is seen to be significant in the Kenyan scenario. However, In Egypt, the proportion of women and the age of the company are significant in explaining the market capitalization of the companies.

4.1.2 Summary

Inflation is the only variable that influences the market capitalization of companies listed in Kenya. The relationship is negative.

4.1.3 Comparison between Kenya and Egypt

Table 11 shows the relevant variables in each country for each industry

Table 11

Summary of Industry Results

INDUSTRY	KENYA	EGYPT
Banking	• Proportion of women • inflation	• proportion of women • firm size • age
Commercial Services	• age	• Board size • Age • GDP • Inflation rate
Construction and Allied	• none	• Proportion of women • age

5 Discussion

5.1 What is the relationship between gender diversity of boards of companies listed in kenya and and firm value?

Generally, for the Kenyan companies the only independent variable in the model that is significant is inflation rate. The inflation rate and the market capitalization have a negative relationship and the impact of inflation rate on market capitalization is high. This makes economic sense as stocks tend to underperform when inflation is high. Therefore, gender diversity in boards, does not influence the value of firms in Kenya. This is consistent with the results of (Farrel & Hersh, 2005) and (Rose, 2007).

5.2 Does the relationship between gender diversity of boards of listed companies in Kenya and firm value differ across industries?

In the banking industry, the market capitalization is significantly influenced by the proportion of women and the inflation rate in Kenya. There is a negative relationship between the two variables and market capitalization. In Egypt, the proportion of women and the firm size significantly affect the market capitalization in the banking industry. Gender diversity in the banking industry negatively impacts on the value of the company. These results are consistent with those of Jianakopolis & Bernasek (1998) and Bohren & Strom (2007). Jianakopolis & Bernasek attribute these results to the low risk decisions made by women that result in lower returns and consequently low firm value. Further, research could be done in order to understand why having women on the board of directors of banks negatively influences the firm value. Considering the Egyptian culture, there are very few women sitting in the boards of companies, on the other hand, Kenya has relatively more women sitting on boards. The results from both this countries show that in the banking industry gender diversity as measured by the proportion of women sitting in the boards impacts negatively on the firm value as measured by the market capitalization.

In the commercial services industry, the proportion of women is not a statistically significant variable in both countries and although it seen to have a positive influence on the market capitalization in Kenya. There is no relationship between gender

diversity of boards and the value of firms in the commercial services industry in both countries.

In the construction and allied industry in Kenya, gender diversity does not impact on the market capitalization of companies. However, in Egypt gender diversity is seen to have a high positive impact on the market capitalization. Therefore, gender diversity in the boards of construction and allied companies has a positive relationship with the value of companies in Egypt. The relationship between gender diversity of boards and firm value differs in Kenya and Egypt in the construction and allied industry. This difference may be attributed to country specific factors that are unobserved in the model.

The relationship between gender diversity in boards and the value of the firm differs in different industries as the results show. The relationship is negative in the banking industry in both Kenya and Egypt, there is no relationship between the two variables in the commercial services industry in both countries and the relationship is positive in the construction industry in Egypt. This difference is explained by Solakoglu (2013) who suggested that firms in industries that do not require quick decision making respond positively to gender diversity while firms in non-manufacturing sectors either show no response or a negative response.

The banking industry although heavily regulated in both countries, is a dynamic industry and banks are continuously looking for ways to incorporate technology so as to increase efficiency and for easy and quick accessibility by the customer. Carter et al (2003) attribute the negative impact of gender diversity on firm value to too much time take in decision making diversity.

The results of the commercial services industry contradicts Solakoglu (2013)'s argument. As the commercial services industry is dynamic in nature, a negative relationship is expected. However, the results obtained in this tudy show that there is no relationship between the gender diversity in a board and the value of a company.

6 Conclusions and recommendations

This study contributes to the literature on board diversity and firm value. The study focuses on gender diversity in the boards. While most studies have focused on individual countries, thus making any generalization of the results inaccurate, this study considers two countries with different cultures.

In both countries gender diversity is found to have a negative relationship with the value of firms. However, the industry specific results are different. The relationship is negative in the banking industry in both countries. In the commercial services industry, the results show no relationship between the gender diversity in boards and the firm value. The relationship is positive in the construction and allied industry in Egypt while there is no relationship in the construction and allied industry in Kenya.

Due to lack of availability of historical and complete information the sample size used to represent the companies listed in the EGX is small. Most companies listed in the EGX record their financial information in Arabic. This also posed as a challenge when collecting the data.

Further research areas would be to determine the cause of the difference in results in similar industries but in different countries such as those obtained in the construction industry in Kenya and Egypt in this study.

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