ACADEMIA International Journal for Social Sciences
Volume 4, Issue 3, 2025 ISSN-L (Online): 3006-6638

Impact of Board Gender Diversity, Audit Quality, and Ownership Concentration on Firm Performance: A Study of Family and Non-Family Firms in Pakistan

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Received: 09-04-2025 **Revised:** 10-05-2025 **Accepted:** 15-06-2025 **Published:** 25-07-2025

ABSTRACT

This research investigates the effect of Board gender diversity, audit quality, and ownership concentration on firm performance. The firms are family and non-family. Using panel data from 125 non-financial firms listed on the PSX during a five-year period (2015-2019). This study uses many statistical analyses, including descriptive statistics, correlation, and choose fixed effect model on the bases Hausman test. This study measured firm performance using three performance parameters i.e Return on assets, Tobin's Q and Return on equity. The study's findings suggest that board gender diversity improves both market-based performance (Tobin's Q) and accounting-based performance (ROA). The result suggests that increases in the board diversity will improve both accounting and market-based firm performance. Audit quality has been shown to have a favorable influence on market performance. It shows that improving audit quality will improve Performance of firms in the context of market-based. While ownership concentration and family-owned businesses have an insignificant effect on overall performance. These findings are helpful for businesses and investors, influencing decision-making processes and enhancing corporate governance structures to improve financial performance and sustainability.

Keywords: *Board gender diversity, audit quality, ownership concentration, Firm performance*

INTRODUCTION

This study investigates how board diversity, audit quality, and ownership concentration affect firm financial performance. This study examines a key aspect of diversity of board members, specifically the representation of female directors on board. Audit quality is also an important aspect of our investigation and ownership concentration. In developing economies, establishing strong governance structures is critical to organizational success. Companies can reduce the risk of financial crises and management conflicts, ensuring long-term stability and growth (Gompers, Ishii, & Metrick, 2003). Corporate governance is fundamentally about developing and maintaining strong associations among a firm's administration,

stakeholder and shareholders. It is a framework that defines the rules, guidelines, and principles that govern how an organization operates and makes decisions that drive success (Shleifer and Vishny, 1997).

The responsibility of Board of directors are overseeing and guiding a firm's growth and value. A competent board is required for effective governance (King & Zeithaml, 2001). Companies consider board diversity not only for ethical reasons but also for the potential benefits and costs (Sarhan, Ntim, & Al. Najjar, 2018). Board diversity means the representation of diverse backgrounds and perspectives on a firm's leadership team, which includes women and people from various countries. The role of women in leadership varies greatly according to cultural norms and values. According to research, if there is diversity in board that can help a company to perform well. BOD'S having diversity has a good understanding of various conditions of different markets, which can result in innovative solutions and creative ideas. This is because board members from diverse backgrounds contribute their unique expertise and experiences (Carter, Simkins, & Simpson, 2003).

A reliable auditor is essential for any business. A competent auditor can detect discrepancies or issues in financial data, ensuring its accuracy (Mostafa Mohamed & Hussien Habib, 2013). Quality auditors also play an important role in increasing investor confidence, which can boost a company's earnings potential. Finally, a quality audit seeks to confirm the veracity of financial information and eliminate any biased or misleading data (Leventis, Weetman, and Caramanis, 2005). When auditors finish their work on time, they can save money. However, delays can incur additional costs (Leventis et al., 2005). Effective governance practices improve a company's performance. Firms around the world are implementing best practices to improve their performance.

When a company has a concentrated ownership structure, the CEO's actions can be associated with the firm's goals, reducing conflicts and increasing value. For decades, researchers have studied the association of ownership concentration and company performance, but the findings have been varied (Wang & Shailer, 2015). In theory, concentrated ownership should limit managers' self-serving behavior because major shareholders have good incentive to oversee them (Makhija, 2004; Zeckhauser and Pound, 1990). These shareholders can even appoint or dismiss executives who don't perform for the interest of organization. However, research has not reliably studied a clear association of ownership patterns and global company performance (La Porta et al., 2000).

This research analyzing various aspects such as diversity of board members, ownership concentration, audit quality, and performance of firms (family and non-family) listed on PSX. The outcome of the research will be beneficial for corporate leaders, legislators, and investors in emerging markets such as Pakistan. The findings can also be used to inform governance policies, particularly those related to ownership, board diversity, and audit quality.

LITERATURE REVIEW

Agency Theory

The agency theory describes the association among shareholders and the managers or directors who act on their behalf. According to Clarke (2004), shareholders hire agents to run the company and make decisions. However, these situations can create interest conflict because managers may prefer their interests over the goals of their shareholders (Daily et al., 2003). Agency theory suggests that managers should work for the shareholders interest , but this may not always be the case (Padilla, 2000). This issue was first identified by Adam Smith and later investigated by researchers such as Ross (1973) and Jensen and Meckling (1976),

who created the agency theory framework. Davis, Schoorman, and Donaldson (1997) emphasized the issues that arise when separated the ownership and control.

According to Fama and Jensen (1983), the board of directors is responsible for reviewing management and settling disagreements between executives and shareholders. Inside directors are more inclined to work ethically because they want to maintain their reputation as a good administrator. Agency theory states that, women as board of directors can increase its efficacy by providing diverse viewpoints and holding CEOs more accountable than their male counterparts. Carter, Simkins, and Simpson (2003) discovered that female as directors are usually very engaged and autonomous, making them excellent additions to boards.

Board Gender Diversity and Firm Performance

During the past two decades, diversity of Bod's has become an important factors of good company governance. Policymakers all around the world are realizing its potential association to better company performance (Eulerich, Velte, & Van Uum, 2014).While ethics are important, cost-benefit analyses are frequently used to make board diversity decisions (Sarhan et al., 2018). Despite the growing interest in diverse boards, the impact on firm performance is unclear, leaving many organizations unsure of their effectiveness (Hassan & Marimuthu, 2018). A board of directors diversity can help improve a business's performance. Siciliano (1996) studied data from 240 organizations and discovered that boards with members from various specialized backgrounds performed better socially and raised more funds. This proposes that a board having diversity can provide distinct advantages to an organization.

Sarhan et al. (2018) examined the association of board diversity and business performance in the Middle East and North Africa. Three key insights were discovered after analyzing data from 600 companies for six years . For starters, having a diverse board that includes women and international members improved the company's performance. Second, this positive effect was even more pronounced in well-governed firms. Last but not least, diverse boards were more likely to associate executive compensation with output. While gender diversity improved financial performance, it did not necessarily lead to increased fundraising. However, having a diverse age group on the board helped with fundraising.

Audit Quality and Firm Performance

Auditors' primary goal is to confirm the validity of financial information by detecting and resolving any discrepancies. Audits completed on time can result in cost savings. However, delays can lead to additional expenses (Leventis et al., 2005). Cho and Wu (2014) discovered that the choice of auditor is influenced by a company's governance structure, especially in cases where there are low to moderate conflicts of interest. This finding indicates a relationship between auditors and internal governance. Another study, Johl et al. (2013), studied the influence of internal audits on financial performance and discovered a complex association of audit quality & firm performance. Outsourcing and political relationships both had an impact on the relationship. Meanwhile, Jusoh et al. (2013) investigated the role of audit quality in firm performance and discovered that high-quality audits improved financial performance. External audits also helped to close information gaps between managers & shareholders.

Francis (2009) discovered that larger Big 4 auditor offices produce higher-quality audits due to their extensive experience. The study, which examined data from over 6,500 US firms between 2003 and 2005, confirmed that larger offices do provide better audits, frequently conducting reports on a going-concern basis. While the Big Four offices stood out for their quality, there was no evidence to suggest that smaller offices are below standard.

Firm Performance and Ownership Structure

Javed and Iqbal (2008) analyzed the association of ownership structure and company performance in Pakistan. They discovered that concentrated ownership it's common in Pakistan, improves business performance when particular characteristics are controlled for. The research also stated that concentration of ownership rises with market growth potential, but falls with firm size. Khan et al. (2011), Azam et al. (2011), and Hassan et al. (2014) found a strong positive association of ownership concentration and company performance in Pakistan. These studies examined specific businesses, such as tobacco and oil and gas, and utilized financial parameters like (ROA) and (ROE) to evaluate Performance. Other research, such as Ibrahim et al. (2010), Wahla et al. (2012), and Yasser (2015), showed little association of ownership concentration and company performance in Pakistan.

Ibrahim et al. (2010) and Wahla et al. (2012) both explored the association of ownership concentration and company performance in Pakistan, but the methods they used differed. Ibrahim et al. focused on the chemical and pharmaceutical industries, using financial Parameters such as ROE & ROA, whereas Wahla et al. investigated non-financial firms and listed on the KSE, using the Parameter Tobin's Q for Performance calculation. Yasser (2015) examined a broader range of indicators, including financial and market-based variables, but found no meaningful association of ownership concentration & business performance. Given the varied results, additional study is required to determine the association of concentration of ownership and company success.

RESEARCH METHODOLOGY

Data

This study used secondary panel data from non-financial family and non-family enterprises registered on the PSX from the year 2015 to 2019. This study examined data of 125 non-financial firms. The data collected randomly from different sector's firms. The study is quantitative and used quantitative analysis tools.

Independent Variables

This study used a simple classification to quantify audit quality: if a company's auditor came from the big four audit firms, it was considered high-quality (coded as "1"); otherwise, it was marked as "0" (Abid, Shaique, & Anwar ul Haq, 2018; Zalata et al., 2018). To assess diversity of BOD's, this research counted the total number of female board members. Previous research, including Buniamin et al. (2012), Rodriguez and Lawrence, Adams (2016), Abdul Manaf et al. (2016), and Farrell (2004), used this approach to quantify board gender diversity by counting female board members. The ownership concentration variable is estimated as the percentage of shares held by the greatest shareholder or a group of top shareholders, as previously examined (Alimehmeti & Paletta, 2012; Denis et al., 1997; Hautz et al., 2013; Thomsen & Pedersen, 2000; Earle et al., 2005; Yasser, 2015). This study used a dummy variable to code family ownership as 1 if the company is family-owned and otherwise 0.

Dependent Variable

Firm performance is the dependent variable of the study .To get a complete understanding, this study included both accounting and market-based indicators, as advised by prior research (Barney, 2002; Daily & Johnson, 1997; Hoskisson et al., 1994). This is because relying on a single parameter is insufficient for

evaluating a company's performance (Daily & Johnson, 1997). This study investigates company performance using three main Parameters, (ROE), Tobin's Q, and (ROA), for calculating firm Performance.

Control Variables

This research used control variables i.e firm age, firm leverage and firm size. The effects of these variables will remain constant while investigating the association of independent and dependent variables.

Firm Size

According to Al-Smadi et al. (2013), researchers measured firm size by taking the log of the book value of its assets. The idea is that larger assets can result in economies of scale, increasing productivity and sales (Demsetz & Lehn, 1985). In other words, businesses with more resources are more probably to have a high value of market, whereas those with fewer resources may struggle.

Firm Age

As with earlier research, studies measured firm age through the counting of number of years since the company's foundation. Firm age is significant because it determines ownership structure; older organizations have more distributed ownership, whereas new companies often have more concentrated ownership (Eisenberg et al., 1998).

Firm Leverage

Studies measured a company's leverage by calculating its debt-to-equity ratio, which shows the proportion of debt versus shareholder equity (Chen & Joggi, 2000; Hutchinson & Gul, 2004).

Research Models

I. $ROA = \beta o + \beta 1 bgdi + \beta 2 aqi + \beta 3 oci + \beta 4 fnfi + \beta 5 Fai + \beta 6 levi + \beta 7 fsi + \varepsilon i$
II. $ROE = \beta o + \beta 1 bgdi + \beta 2 aqi + \beta 3 oci + \beta 4 fnfi + \beta 5 Fai + \beta 6 levi + \beta 7 fsi + \varepsilon i$
III. $Tobin's\ Q = \beta o + \beta 1 bgdi + \beta 2 aqi + \beta 3 oci + \beta 4 fnfi + \beta 5 Fai + \beta 6 levi + \beta 7 fsi + \varepsilon i$

In the above models, bgd represents board gender diversity, aq represents audit quality, oc represents ownership concentration, fnf represents family and non-family firms, FA denotes firm age, Lev denotes firm leverage, FS denotes firm size.

RESULTS AND DISCUSSION

Model 1 Return on Asset (Proxy for Firm Performance)

Descriptive Statistics

Descriptive analysis results shown in table 1

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Roa	625	.051	.09	.867	.331
Bgd	625	.39	.276	0	.988
Aq	625	.445	.498	.09	1
Oc	625	.64	.212	0	.987
Fnf	625	.832	.374	0	1
Fa	625	41.344	21.375	8	159
Lev	625	.518	.255	.039	2.459
Fs	625	15.862	1.574	11.68	20.457

Pearson Correlation

ROA and BGD have a positive correlation of 0.219. This shows that organizations with more women on their boards perform better financially. The coefficient of ROA and AQ is 0.366, demonstrating a strong positive association. It suggests that organizations that conduct high-quality audits are more likely to do well financially. The correlation between ROA and OC is 0.009, which is very low. It indicates that there is no significant influence of ownership concentration on the performance of firms. ROA & FNF firms are weak and negatively correlated (-0.045). This indicates that companies owned by family, may have slightly lower financial performance. These relationships demonstrate how various factors affect a business's Performance, as measured by Return on asset.

Table 2: Pearson Correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) roa	1.000							
(2) bgd	0.219	1.000						
(3) aq	0.366	0.357	1.000					
(4) oc	0.009	0.142	0.100	1.000				

(5) fnf	-0.045	-0.228	-0.184	-0.149	1.000			
(6) fa	-0.089	-0.132	0.003	-0.070	-0.002	1.000		
(7) lev	-0.462	-0.170	-0.201	0.076	0.067	-0.029	1.000	
(8) fs	0.293	0.162	0.342	0.011	0.060	0.075	-0.088	1.000

Fixed Effect Model

The coefficient is 0.077, it means that a 1% increase in board gender diversity leads to a 0.077% rise in ROA. This result is significant at the 5% level. The coefficient is 0.005, which is insignificant. It demonstrates that audit quality has minor effect on ROA. The coefficient is -0.033, which is insignificant statistically. it shows that ownership concentration has little effect on ROA. The R-squared value is 0.178, representing that the model describes about 17.8% of the variation in ROA defined by the research's independent variables, with the remaining effect due to error terms. The F-test is significant statistically, demonstrating that the model is fit for forecasting. There are 625 observations, which is a sufficient sample size.

Table 3: Fixed Effect Model

Roa	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Bgd	.077	.032	2.42	.016	.14	.015	**
Aq	.005	.012	0.37	.71	.029	.02	
Oc	-.033	.025	-1.33	.185	-.082	.016	
Fnf	.73	.084	1.12	.76	.061	.162	
Fa	-.007	.002	-3.19	.002	-.012	-.003	***
Lev	-.281	.03	-9.40	0	-.34	-.222	***
Fs	.032	.014	2.21	.027	.004	.06	**
Constant	.05	.171	0.29	.768	-.285	.386	

Mean dependent var	0.051	SD dependent var	0.090
R-squared	0.178	Number of obs	625

F-test	17.807	Prob > F	0.000
Akaike crit. (AIC)	-1944.153	Bayesian crit. (BIC)	-1913.088

Random Effect Model

Table 4: Random Effect Model

Roa	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Bgd	.004	.017	0.22	.823	.037	.03	
Aq	.024	.009	2.77	.006	.007	.041	***
Oc	-.012	.018	-0.67	.503	-.048	.023	
Fnf	-.001	.013	-0.09	.928	-.028	.025	
Fa	-.001	0	-2.61	.009	-.001	0	***
Lev	-.179	.017	-10.68	0	-.212	-.147	***
Fs	.011	.003	3.51	0	.005	.017	***
Constant	-.007	.051	-0.13	.897	-.107	.094	

Mean dependent var	0.051	SD dependent var	0.090
Overall r-squared	0.319	Number of obs	625
Chi-square	162.574	Prob > chi2	0.000
R-squared within	0.132	R-squared between	0.444

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

Hausman Test

Ho= if P value is greater than 0.05 then Random effect model is consistent. (Rejected)

H1= fixed effect model is best for analysis if P value is less than 0.05.(Accepted)

Table 5: Hausman Test

Hausman (1978) specification test

	Coef.
Chi-square test value	49.509
P-value	0

Model 2 Return on Equity (Proxy for Firm Performance)

Descriptive Statistics

Descriptive analysis results shown in table 6

Table 6: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Roe	625	.106	.18	.728	1.875
Bgd	625	.39	.276	0	.988
Aq	625	.445	.498	.09	1
Oc	625	.64	.212	0	.987
Fnf	625	.832	.374	0	1
Fa	625	41.344	21.375	8	159
Lev	625	.518	.255	.039	2.459
Fs	625	15.862	1.574	11.68	20.457

Matrix of Correlations

The correlation is positive 0.144 of ROE and BGD, indicating that firms with more Female BOD's slightly well financially. ROE and AQ have a correlation of 0.292, indicating a moderately positive association. It demonstrates that firms having high-quality audits are more expected to perform well financially. The correlation between ROE and OC is 0.058, which is low. This suggests that concentration of ownership has little influence on performance of firms. The correlation is weak and negative (-0.078) between ROE and FNF, indicating that family-owned businesses may have slightly lower financial performance. These correlations reveal how different factors influence a company's financial performance, as measured by ROE.

Table 7: Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) roe	1.000							
(2) bgd	0.144	1.000						
(3) aq	0.292	0.357	1.000					
(4) oc	0.058	0.142	0.100	1.000				
(5) fnf	-0.078	-0.228	-0.184	-0.149	1.000			
(6) fa	0.031	-0.132	0.003	-0.070	-0.002	1.000		
(7) lev	-0.250	-0.170	-0.201	0.076	0.067	-0.029	1.000	
(8) fs	0.366	0.162	0.342	0.011	0.060	0.075	-0.088	1.000

Fixed Effect Model

Coefficient value is 0.016, it is insignificant. it illustrates that board gender diversity has no significant influence on ROE. The coefficient is 0.002, which is insignificant. This indicates that audit quality has little influence on ROE. The coefficient is 0.06, which is insignificant. This shows that ownership concentration has no significant effect on ROE. The value of R-square is 0.027 indicates that the model describes about 2.7% of the changes in ROE. The F-test is significant statistically, representing that the model is properly fitted. There are 625 observations, which is an appropriate sample size.

Table 8: Fixed Effect Model

Roe	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Bgd	.016	.071	0.23	.822	.154	.123	

Aq	.002	.027	0.06	.956	.052	.055	
Oc	.06	.055	1.08	.28	-.049	.168	
Fnf	.68	.079	1.09	.63	.056	.157	
Fa	-.012	.005	-2.43	.016	-.022	-.002	**
Lev	-.167	.066	-2.53	.012	-.297	-.037	**
Fs	.04	.032	1.26	.207	-.022	.103	
Constant	.036	.377	0.09	.925	-.705	.777	

Mean dependent var	0.106	SD dependent var	0.180
R-squared	0.027	Number of obs	625
F-test	2.282	Prob > F	0.000
Akaike crit. (AIC)	-954.313	Bayesian crit. (BIC)	-923.248

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

Random Effect Model

Table 9: Random Effect Model

Roe	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Bgd	.002	.037	0.05	.963	.074	.071	
Aq	.034	.019	1.79	.074	.003	.071	*
Oc	.039	.039	1.00	.319	-.038	.116	
Fnf	-.027	.029	-0.94	.349	-.085	.03	
Fa	0	0	-0.24	.807	-.001	.001	
Lev	-.155	.036	-4.26	0	-.227	-.084	***

Fs	.033	.007	4.83	0	.02	.046	***
Constant	-.349	.112	-3.12	.002	-.568	-.13	***

Mean dependent var	0.106	SD dependent var	0.180
Overall r-squared	0.204	Number of obs	625
Chi-square	60.819	Prob > chi2	0.000
R-squared within	0.006	R-squared between	0.337

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

Hausman Test

Ho= if P value is greater than 0.05 then Random effect model is consistent. (Rejected)

H1= fixed effect model is best for analysis if P value is less than 0.05. (Accepted)

Table 10: Hausman Test

Hausman (1978) specification test

	Coef.
Chi-square test value	13.684
P-value	.033

Model 3 Tobins Q (Proxy for Firm Performance)

Descriptive Statistics

Descriptive analysis results shown in table 1

Table 11: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max

Tq	625	1.393	.551	.409	2.119
Bgd	625	.39	.276	0	.988
Aq	625	.445	.498	.09	1
Oc	625	.64	.212	0	.987
Fnf	625	.832	.374	0	1
Fa	625	41.344	21.375	8	159
Lev	625	.518	.255	.039	2.459
Fs	625	15.862	1.574	11.68	20.457

Matrix of Correlations

The correlation is 0.128 of firm market performance and BGD, indicating that firms with more Female BOD's perform slightly well. Tobin's Q and correlation of aq is 0.208, representing a moderately positive relationship. This means that companies that undergo high-quality audits tend to perform better. The firm market performance and OC correlation is -0.014, which is extremely low. This suggests that concentration of ownership has little influence on performance. The correlation of firm market performance and FNF is -0.142 it's weak and negative, indicating that family-owned businesses may have slightly lower performance. These correlations reveal how different factors influence the performance of firms, as firm market performance calculated.

Table 12: Pearson Correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) tq	1.000							
(2) bgd	0.128	1.000						
(3) aq	0.208	0.357	1.000					
(4) oc	-0.014	0.142	0.100	1.000				
(5) fnf	-0.142	-0.228	-0.184	-0.149	1.000			
(6) fa	0.150	-0.132	0.003	-0.070	-0.002	1.000		

(7) lev	-0.049	-0.170	-0.201	0.076	0.067	-0.029	1.000	
(8) fs	0.056	0.162	0.342	0.011	0.060	0.075	-0.088	1.000

Fixed Effect Model

Coefficient value is 0.254,it means that firms with more female BOD's are likely high firm market-based performance. At the 5% level, this result is significant statistically. Coefficient value is 0.126, it demonstrates that companies that have better quality of audit influence to have better company's market-based Performance. The result shows significance at the level 1% .The coefficient is -0.05, but it doesn't mean anything statistically. Financial Performance is not greatly affected by ownership concentration. The R-square is 0.119, it illustrates that the model describes about 11.9% of the changes in firm Performance. The result of F-test is significant, it means the model is a good fit. There are 625 observations in the sample size, which is sufficient.

Table 13: Fixed Effect Model

Tq	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Bgd	.254	.121	2.11	.035	.491	.018	**
Aq	.126	.047	2.70	.007	.218	.035	***
Oc	-.05	.094	-0.53	.594	-.236	.135	
Fnf	.56	.057	1.08	.58	.047	.55	
Fa	-.034	.009	-3.85	0	-.051	-.016	***
Lev	.328	.113	2.91	.004	.107	.55	***
Fs	-.065	.054	-1.20	.23	-.172	.041	
Constant	3.838	.644	5.96	0	2.572	5.104	***

Mean dependent var	1.393	SD dependent var	0.551
R-squared	0.119	Number of obs	625
F-test	11.138	Prob > F	0.000

Akaike crit. (AIC)	-284.694	Bayesian crit. (BIC)	-253.629

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

Random Effect Model

Table 14: Random Effect Model

Tq	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Bgd	.072	.105	0.68	.494	.277	.134	
Aq	.032	.045	0.71	.478	.119	.056	
Oc	-.153	.091	-1.69	.092	-.331	.025	*
Fnf	-.235	.127	-1.85	.064	-.484	.013	*
Fa	0	.002	0.03	.976	-.004	.004	
Lev	.144	.098	1.47	.143	-.048	.336	
Fs	-.051	.025	-2.07	.038	-.1	-.003	**
Constant	2.466	.393	6.27	0	1.696	3.237	***

Mean dependent var	1.393	SD dependent var	0.551
Overall r-squared	0.000	Number of obs	625
Chi-square	14.938	Prob > chi2	0.037
R-squared within	0.067	R-squared between	0.000

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

Hausman Test

Ho= if P value is greater than 0.05 then Random effect model is consistent. (Rejected)

H1= fixed effect model is best for analysis if P value is less than 0.05. (Accepted)

Table 15: Hausman Test

15 Hausman (1978) specification test

	Coef.
Chi-square test value	77.071
P-value	0

VIF ROA

The results of multicollinearity show that there is no multicollinearity in data as the values of all the variables are less than 10 which means there is no issue and data is normal.

Table 16: VIF Test

Variance inflation factor

	VIF	1/VIF
aq	1.326	.754
bgd	1.243	.805
fs	1.169	.856
fnf	1.108	.902
lev	1.07	.935
oc	1.054	.948
fa	1.035	.966
Mean VIF	1.143	.

CONCLUSION:

Model 1 results: shows that the association of diversity of Bod's and return on asset is positive and the relationship is significant. It means as the female directors numbers increases, it enhances the firm accounting based performance. While the association of audit quality and ownership concentration is

positive but the relationship is insignificant and have less effect on ROA. Family owned and non-family has insignificant effect on firm Performance.

Model 2 results: shows that Bod's diversity, audit quality and ownership concentration have positive association with ROE but the association is insignificant and have less effect on ROE. Family owned and non-family has insignificant influence on performance.

Model 3 results: shows that the association of Bod's is positive with market base performance of company and the association is significant. It means that increase in female board of director will leads to enhance firm market-based performance. Quality of audit has significant association with company's market based performance and the association is positive. It means that improvement in audit quality will leads to improve firm market-based Performance. Family owned and non-family has insignificant effect on firm Performance.

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