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Board Gender Diversity and Financial Performance of Listed and Unlisted Firms in Ghana.

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ABSTRACT

This study examines the effect of gender diversity on the firm performance of listed and unlisted companies in Ghana. The objective of the study is to examine the percentage of women on the boards of selected listed and unlisted firms in Ghana, examine the financial performance of selected listed and unlisted firms in Ghana and analyse the effect of women on boards on the financial performance of selected listed and unlisted firms in Ghana. Return on Asset (ROA) was used as a financial performance measure on an independent variable such as the Blau index through control variables such as firm size and firm age, with consideration to corporate governance measures using the pooled Ordinary least Square (OLS) and Generalised least Square (GLS) estimation methods. The sample consists of 30 companies and covers the period 2010-2018. The study finds a negative and insignificant relationship between gender diversity (Blau index) and firm performance measured by ROA. The finding has shown board size as having a negative but significant relationship with the performance of the selected listed and unlisted firms in Ghana. The proportion of women on board has shown a negative and insignificant relationship with performance. Firm size has a negative but significant relationship with the ROA of selected listed and unlisted firms in Ghana. The result has shown a p-value that is less than 0.05. This, therefore, implies an inverse relation between the two variables. A major policy recommendation is that companies should include women on their boards since they contribute towards their performance.

INTRODUCTION

The board of directors forms an important corporate governance mechanism that ensures the judicious use of resources of companies to maximise the wealth of shareholders (Boshnak, 2021). Board of directors play major roles including strategic formulation of vision and mission, monitoring role, provision of links to external resources and adherence to the corporate governance mechanisms (Board gender diversity, board size, CEO duality and board independence) as that builds the confidence of rational investors and ensure sustainable performance of companies (Puni & Anlesinga, 2020). According to Kılıç & Kuzey (2016), there are two major categories of board gender diversity which are Board structural diversity (control task of the board) and demographic diversity of the board (service task of the board). Board gender diversity enables women to effectively participate in monitoring and supervisory roles, bringing new ideas to boards and to contribute their potential towards efficient resource usage and growth of companies (Kılıç & Kuzey, 2016). Board gender diversity remains one of the major variables that have for the past years attracted the attention of researchers, professionals and world leaders as an effort to enable judicious use of resources and to ensure corporate best practices such as those outlined by the Sarbanes-Oxley Act and the Cadbury Committee report in the UK (Arena *et al.*, 2015). This is necessary considering the global corporate scandals that have resulted in the collapse of multinational companies such as Enron and Worldcom and its consistency in companies both in developed and developing nations (Arena *et al.*, 2015). Board gender-related issues remain relevant especially as the global population census shows a higher percentage of women which calls for the need for women in active roles and the potential of women in higher positions as a means of contributing to sustainable performance and growth of companies and economies of nations (Kılıç & Kuzey, 2016). Whilst some researchers concluded on board gender diversity is a mechanism that contributes immensely to the performance of companies after measuring performance using both Return on Asset (financial performance indicator) and Tobin's Q (marketing performance indicator) (Carter *et al.*, 2010), other researchers have concluded on the opposite after using the same variables and by using Blau index and dummy as independent variables (Niederle & Vesterlund, 2007). This makes gender diversity to be a mechanism of much attention to researchers and policymakers. Women's presence and active board participation have introduced a fresh mindset on the board and their unique understanding of consumer behaviour enables issues of a complex nature to be resolved as well as active contributions towards the fiduciary role of boards of companies (Arena *et al.*, 2015). Despite some negative attributes of women such as being risk averse, their participation on corporate boards is highly encouraged towards sustainable performance. World Development report in the year 2013 and 2012 on gender issues and women's active roles and job-related matters have concluded that, from the 1980s through to the 2000s, there

has been some improvement and recognition of the potential of women globally especially in women's contributions in labour markets despite the high and persistent problem of unemployment in developing nations (ILO, 2017).

Concept of Corporate Governance

Corporate governance as a concept, is based upon the best means of controlling and directing the affairs of companies (Berle & Means, 1932). According to the report from the Cadbury Committee in the year 1992, corporate governance as a concept institute discipline in the use of resources available to companies (Gilson, 2006). The concept of corporate governance has attracted the concerns of stakeholders including managers of companies, policymakers, world leaders and researchers whose concern is to address agency problems and conflict of interest and to instil discipline in the use of resources to the general benefit of companies. The concept of corporate governance results in the best practices of companies which is evidenced by accountability, transparency, law and customs of nations, regulatory requirements and fairness. Adherence to the concept of corporate governance results in efficient stewardship function, fiduciary roles and protection of shareholder rights and resources within limited liability companies. Shareholder's confidence is built when the concept of corporate governance is given maximum attention and adherence within companies.

Presence and Role of Women Board Members

The presence of women on the board of companies remains an issue of great concern both in developed and developing nations. Studies conducted by Lincoln *et al.*, (2012) have found women on board introduce fresh ideas on board, helping to improve board dynamics and bring solutions to issues of a complex nature to the board of companies. The study also touched on women as being collaborative and trustworthy which is necessary in board functions. Women possess a unique understanding of consumer behaviour and their presence on corporate boards enables efficient resource usage and board function as necessary to ensure sustainable performance (Campbell & Vera, 2008). Studies on the impact of women's presence on the board of companies also found women as possessing some negative traits such as women being risk averse and desisting from stressful positions while others are too emotional when on board of companies but generally recommended for effective board participation (Matsa & Miller, 2011).

Methodology

Theoretical Framework

Descriptive research design and panel data analysis will be used. A quantitative research method was used. The target population included listed and unlisted companies in Ghana. The population of the study was 30 of the listed and unlisted companies whose annual audited reports were depended upon to derive relevant data for the study. The sample technique was purposive or convenience sampling to select these companies. The sample size consisted of thirty (30) of these companies. The period covered from 2007 to 2019 and it included both indigenous and multinational companies.

The Empirical Model

The modified model for the study was based upon an empirical study of Bøhren and Strøm (2010) and such is presented below:

$$\text{Firm Performance } ROA_{it} = \alpha + \beta_1 \text{BOARD GENDER}_{it} + \beta_2 \text{PWB}_{it} + \beta_3 \text{BOARD SIZE}_{it} + \beta_4 \text{FIRMSIZE}_{it} + \beta_5 \text{AGE}_{it} + \mathcal{E}_{it}$$

Where:

ROA = Accounting-based financial measurement variable.

α : Intercept or constant term in the equation.

β : Regression coefficient.

i = entity

t = time,

BOARD GENDER_{it}: This variable represents the gender diversity of the board of directors for firm "i" at time "t".

PWD_{it}: This variable represents the presence or absence of the percentage of women on board within the firm for the firm "i" at time "t".

FIRMSIZE_{it}: This variable represents the size of the firm "i" at time "t".

AGE_{it}: This variable represents the age of the firm "i" at time "t", typically measured as the number of years since its establishment.

\mathcal{E} = Within-entity error.

Estimation Technique

The estimation techniques considered in the study included pooled OLS, Random and fixed effects. In the occurrence when there were no time and firm-specific effects, pooled OLS was preferred. But when there were time or firm-specific effects, then either a fixed or random effects model was considered. The fixed effects allow the intercept for each company to vary but restrict the slope parameters to be constant across all the firms and

periods, whilst the random effects model assumes the variation across the companies to be random and for that matter not correlated with that of explanatory variables as included in the model.

Multicollinearity Diagnosis

Multicollinearity makes variables significant by increasing p-values. Multicollinearity occurs only when the explanatory variables in a particular study are highly related. This test was performed to know how the variables were related as may be used in the study.

The correlation coefficient is what provides the magnitude and direction of how the variables are correlated. The coefficient sign also indicates how variables in a study are correlated.

Stationarity (Unit Root Test)

The stationarity of a series influences its properties and behaviours strongly. Prior studies indicated that, at 5% and also 10% significance levels, there is no existence of stationarity but at a 1% significance level, the number of observations considered in a particular becomes less. This means that to derive stationarity at a 1% significance level, there is the need for consideration of more observations to help in the analysis.

The basic objective of testing for unit root is to test for the null hypothesis that $\phi = 1$; Based upon previous studies, to remove unit roots from data, models are transformed using the differences technique in which the current observation is subtracted from its consecutive observation.

Fixed Effect versus Random Effect

The intercept in FEM may be different across different companies but such does not vary over time. The FEM assumes that there is no variation in the slope coefficients.

The fixed effect variable uses the model below:

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_{it} \dots \dots \dots (3)$$

Y is the dependent variable.

X is the explanatory variable.

i is the cross-section unit.

t is the period of time.

Random effects model (REM)

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_{it}$$

Y is the dependent variable.

X is the explanatory variable.

i is the cross-section unit.

t is the period of time.

Hausman Test

Hausman's (1978) Specification Test is used in choosing the required estimation model (FEM, REM) for the study. Where the p-value of the Hausman test is significant (i.e., $p < 0.05$), the study adopts the fixed effects model as the preferred model for discussion. However, where the Hausman test proves insignificant (i.e., $p > 0.05$), then the study adopts the random effects model for discussion. Worthy of note is the fact that the decision to pool or not is justified by the Breusch-Pagan Lagrange Multiplier test (BPLM test) for the random effect model. The null hypothesis of the Breusch-Pagan LM test indicates that variations across entities are zero. That is, no significant difference across units (i.e. no panel effect) (Torres-Reyna, 2007). Thus, an insignificant p-value implies no evidence of significant differences across observations and therefore, simple OLS can be run for analysis. The models are estimated using the panel data regression estimation techniques with the help of STATA 14.

Description of Variables

Dependent Variable. The main dependent variable is the Return on Asset (ROA). ROA helps in measuring management efficiency in using available resources. Naturally, it shows what income is being generated from available resources. The higher the figure, the better as it shows that the bank is earning more income on less capital invested (Addo, 2013).

$$ROA = \frac{\text{Profit After Tax}}{\text{Total Assets}}$$

Independent Variable. Independent variables will include Board gender diversity and Board size as used in prior studies (Tukur & Bilkisu, 2014).

Board Gender Diversity: An independent variable will be measured as follows; First, a dummy variable is used which takes a value of 1 when on a particular board, a female director is present. Second, the percentage of female directors over total board members. Third, used in measuring board diversity. Previous studies have used it to determine board gender diversity (Harrison & Sin 2006).

Board Size: Independent variable will be measured by taking a natural log of the total members on the board of the firm based on prior studies. Board size is operationalized as “the total number of full-time directors with voting rights on the board” (Gabrielsson, 2007).

Control Variables

Firm Size. This refers to assets owned by the firms. This is computed by taking the natural log of firms. Previous research on the subject used this control variable.

Firm Age. This was calculated using the natural logarithm of the firm’s age.

Source of Data

The study will rely on secondary data obtained primarily from the Ghana Stock Exchange’s website (<https://www.annualreportsghana.com/resources/equity/gse/>). The individual websites of the target companies will also be visited to gather the information required to meet the objectives.

Data Analysis

The STATA software is used to analyze data for the current study. This has enabled the secondary data to be computed in an Excel spreadsheet and then exported into the STATA software for analysis. The results were displayed in tables, including the mean, standard deviation (SD), and skewness, among other things.

Result

Descriptive Statistics

The study used descriptive statistics such as frequency distribution and tables to analyse board gender diversity and firm performance of listed and unlisted firms in Ghana. Descriptive statistics is used in computing the mean size, maximum and minimum, SD, kurtosis and skewness.

The firm age has an average of about 40 years presented in the table below. This means that the selected companies have been in operation for several years. The maximum age is 122 and the minimum age is 12. The SD is 23.62. This shows the presence of moderate variation. The summary of the descriptive statistics is presented in the table 4.1 below:

Table 4.1: Descriptive Statistics

LISTED AND UNLISTED FIRMS							
	OBS.	MEAN	SD	KURTOSIS	SKEWNESS	MIN	MAX
ROA	385	0.121	0.216	86.059	7.885	0.000	2.954
BOARD GENDER (BLAU INDEX)	385	0.167	0.668	347.647	-18.066	-12.852	0.500
PWB	385	0.137	0.123	-0.413	0.587	0.000	0.500
BOARD SIZE	385	8.915	3.445	0.076	0.551	2	18
FIRM SIZE	385	15.109	2.824	0.848	0.534	5.215	24.547
FIRM AGE	385	40.141	23.620	2.632	1.369	12	122

Note: Dependent Variable ROA (Return on Assets).

Test for Multicollinearity

A check for multicollinearity amongst the variables was considered in this section. Table 4.2 uses Pearson’s correlation matrix. A correlation test was carried out to determine the existence of collinearity among the variables. Multicollinearity occurs when in a study, the explanatory variables considered are highly related. Table 4.2 presents the correlation matrix for the variables used for the study.

Table 4.2: Pearson Correlation for the Dependents and Independent Variables

LISTED AND UNLISTED COMPANIES						
	ROA	BLAU INDEX	PWB	BOARD SIZE	FIRM SIZE	FIRM AGE
ROA	1.0000					
BOARD GENDER (BLAU INDEX)	0.0131	1.0000				
PWB	-0.063	0.2286	1.0000			
BOARD SIZE	-0.201	-0.0323	0.1885	1.0000		
FIRM SIZE	-0.243	0.0088	0.0081	0.1930	1.0000	
FIRM AGE	0.0479	-0.0465	0.1470	0.1586	0.0308	1.0000

Percentage of Women on Board

Table 4.3 below contains the details of the composition of both women and men on the boards of the selected companies.

Table 4.3: Percentage of Men and Women on Board

	Male	Female
Gender;	84% (1970)	16% (373)
Ownership;		
Multinational	84.6% (752)	15.4% (137)
Local	83.7% (1218)	16.23% (236)
Industry; Financial	79.58% (807)	20.42% (207)
Oil and Gas	84.56% (263)	15.44% (48)
Automobile	100% (67)	
Mining	66.67% (54)	33.3% (27)
Food and Drugs	89.5% (779)	10.5% (91)

Source: Field data, 2023

The result from the normality test is presented in the table 4.4.

Table 4. 4 Skewness/ Kurtosis test for Normality

Variable	Obs	Pr(Skewness)	Pr (Kurtosis)	Adj chi2 (2)	Prob> chi2
ROA	385	0.000	0.000		0.000
BOARD GENDER (BLAU INDEX)	385	0.000	0.000		0.000
PWB	385	0.000	0.000	69.58	0.000
Board size	385	0.000	0.675	14.17	0.001
FS	385	0.001	0.002	17.13	0.000
Age	385	0.000	0.000		0.000

Source: Listed and Unlisted firms in Ghana.

Heteroscedasticity Test

The results were generated from the OLS estimation. Cook-Weisberg and Breusch-Pagan tests were employed in testing for heteroskedasticity. The null hypothesis shows that all the error variances are against that of the alternative hypothesis which increases or decreases as the predicted values of the dependent variable increase. Table 4.5 below therefore shows that there is the presence of heteroskedasticity about the performance variable (ROA). The test therefore rejects the null hypothesis of no heteroskedastic at a 0 percent level of significance in each case.

Table 4.5: Breusch-Pagan/ Cook-Weisberg Test for Heteroskedasticity

chi2 (1) = 15.41

Prob > chi2 = 0.00011

Source: listed and unlisted firms in Ghana

Hausman Specification Test

In determining whether FEM or REM is appropriate, the researcher conducted Hausman Specification Test. Fixed effect (FEM) is not correlated with the independent variables. The Random Effect Model (REM) correlates with the variables. According to Gujarati (2004), REM is more appropriate in instances where the null hypothesis of the Hausman Test is rejected whereas FEM is more appropriate when the null hypothesis is not rejected. In the Hausman specification test, the decision rule to accept the null hypothesis is when there is an insignificant P-value of more than 0.05. The results in Table 4.7 show the null hypothesis is accepted hence the data follows the random effect model.

Table 4.6 Hausman Test for Fixed or Random Effects

	(b) Fe	(B) Re	(b-B) Difference	sqrt (diag(V_b-V_B)) S.E.
BOARD GENDER (BLAU INDEX)	0.0058	0.0058	0	0
PWD	-0.0824	-0.0824	0	0
BOARD SIZE	-0.1076	-0.1076	0	0
FIRM SIZE	0.00895	0.00895	0	0
AGE	0.0007	0.0007	0	0

Hausman Tests $\chi^2(4) = (b-B)'[(V_b-V_B)^{-1}](b-B) = 3.07$ Prob > $\chi^2 = 0.5469$

Source: listed and unlisted firms in Ghana

Regression Results

The regression results showing the effect and significant effects of each variable on the dependent variable are presented in Table 4.7.

Table 4.7: Regression Result Using Pooled OLS (Random Effect Model)

LISTED AND UNLISTED FIRMS				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.4398	0.0613	7.1736	0.0000
BOARD GENDER (BLAU INDEX)	0.0080	0.0159	0.5037	0.6148
PWB	-0.0866	0.0896	-0.9667	0.3343
BOARD SIZE	-0.0103	0.0032	-3.2297	0.0013
FIRM SIZE	-0.0165	0.0038	-4.3488	0.0000
FIRM AGE	0.0008	0.0005	1.7988	0.0728

Discussion

The result in Table 4.1 shows the descriptive measurements of the variables in the study. The ROA was used to measure performance and the average value is 0.121. This means that the selected listed and unlisted firms earned a net income of about 12% on assets. According to the result in the table below, the maximum value is 2.95. The minimum value as shown in the table is 0.00. The standard deviation according to the table is 0.216 which reflects the presence of moderate variation among selected companies. Gender diversity according to the table is 0.168. The result indicates that the selected companies have an average Blau of 0.168. The maximum value according to the table is 0.500. The minimum value is also -12.85. The result also shows the standard deviation (SD) of 0.68. The average value reflects the presence of moderate variation among the companies selected. The result in Table 4.1 also shows 0.138 as being the average proportion of women on boards. The maximum value to this is 0.500 whereas the minimum value is 0.00. The SD is 0.123 from the average value. This reflects the presence of moderate variation. Board size has an average value of 8.92. This means that the selected listed and unlisted firms for the study have an average board size of 9 persons. The maximum and minimum values are 18 and 2 respectively. This follows with an SD of 3.45 as a reflection of the presence of moderation among the companies. Firm size has an average value of 15.11. This result is based on the annual reports of the selected listed and unlisted firms and it means that they have bigger sizes. The maximum and minimum sizes are 25 and 5 respectively. There is also an SD of 2.82 from the average firm size to mean a moderate dispersion among the companies. According to Table 4.2, ROA is positively correlated with the Blau index and firm age with 0.013 and 0.048 coefficient of correlation respectively. Blau index is also positively correlated with PWB and firm size with 0.229 and 0.009 coefficient of correlation. The PWB according to the table has a positive correlation with board size, firm size and firm age with a correlation coefficient of 0.19, 0.008 and 0.147 respectively. Board size has a positive correlation with firm size and that of firm age with 0.19 and 0.16 coefficient of correlation. Firm size according to the table has a positive correlation with firm age of 0.03.

Based upon the result in the table, ROA has a negative correlation with PWB, board size and firm size with -0.063, -0.201 and -0.243 coefficient of correlation respectively. The Blau index also shows a negative correlation with board size and firm age with -0.032 and -0.05 coefficient of correlation. Table 4.3 shows the total board members of the selected companies is 2,343 (100%). The number of men on boards is 1,970 (84%) and the number of women is 373 (16%). The result is computed by taking a percentage of the women and men on the board of the selected companies against the total board members. The selected companies include both multinational and local companies. According to the table, the number of men on the board of multinational companies is 752 (84.6%) as against the woman of 137 (15.4 %). The local companies have 1,218 (83.7%) men on the board as against 236 (16.23%). The table further presents details of the gender composition by considering it from the various industries to establish women's total percentage on the board of the firms.

Generally, the result according to the table shows an insignificant representation of women's board members in the firms selected. As compared with the 2015 findings from the study conducted by the African Development Bank (AFDB) which established the total number of women board members as 17.7 %. The result has shown some consistency even as it shows a 16 % representation of women's board members in the firms selected. The result of the study also agrees with the findings of (Sealy *et al.*, 2007) who established that there is a lower representation of women on the boards of companies globally. The result of the panel data regression analysis is presented in this section. The data for the study as earlier indicated is derived from the company's annual reports. The main dependent variable used in the study is the Return on Asset (ROA). Among the independent variables considered in the study include board gender diversity as measured using the Blau index, proportion of women on board (PWB) and board size. Firm age and firm size are also the control variables used in the study.

The study conducts normality tests purposely to apply the model that can best test the significance of slopes and help to analyze the regression result. The essence of this test is also to avoid misspecification and to enhance the realities of research. The distribution is shown below. The table shows the normal distribution to be 1. The mean is less than 1 and the standard deviation (SD) to also less than 1. Because there is a large number of observations, it can be concluded that there is a normal distribution.

According to the result in Table 4.4, ROA has kurtosis and skewness values to be 0.000 and 0.000 respectively. This shows a significant value of 0.00 which is a normal distribution. The Blau index and dummy also record kurtosis and skewness values of 0.000 and 0.000 respectively. The result also establishes a significant value of 0.00. Normally distribution is established from the result. The board size has both skewness and kurtosis values of 0.000 and 0.685 respectively. This value follows with a 0.00 significance which is an indication of normal distribution. Firm size has 0.001 and 0.002 for both skewness and kurtosis values and at a 0.00 significant value. This implies that they are normally distributed and significant at 0.00. The table further shows that firm age has kurtosis and skewness values to be 0.000 and 0.000 respectively and it is significant at 0.00. This also shows that it has been normally distributed.

According to the results in Table 4.7, the Blau index has a positive but insignificant effect on ROA ($\beta = 0.0080, 0.615$). This shows that the Blau index has no significant on performance (ROA). The result also shows PWB as having a negative coefficient with an insignificant p-value of 0.334. This means that PWB has no significant effect or influence on the profitability of selected companies. The finding however contradicts that of Choon *et al.* (2013) who found a positive effect of PWB on ROA, implying that the higher the PWB, the more profitable a company becomes. The resource dependency theory considers board members as a resource that is relevant towards the efficient usage of other resources of organisations. The board size of the listed and unlisted firms has a negative but significant p-value at 0.00613. The result shows that when the size of board members becomes less, firms become more profitable. The result means that the two variables are positively related. This is supported by the agency theory on the need for efficient board function as that reduces agency cost and enables companies to rather maximise the wealth of their shareholders and to the benefit of other stakeholders. The regression result shows the firm size as having a negative coefficient ($\beta = -0.0165, p < 0.001$). This shows an inverse relationship

to the extent that small firm size results in higher profitability for the firms. Li & Chen (2018) used firm size as a moderating variable and their findings agree with the result. This finding also agrees with the findings of Bonfim & Kim (2012). The author establishes in a study that firm size has a negative relationship with profitability meaning that the smaller the size of firms, the more profitable they become.

Firm age shows a positive but 0.073 insignificant level. The result means that no relationship exists between firm age and profitability of the companies selected for the study. The null hypothesis is therefore accepted about profitability and firm age. Comparing this with the findings of Bonfim & Kim (2012), there is some contradiction as the latter establishes that firm age and profitability are negatively related to imply that the higher the age of a firm, the more profitable that firm becomes.

Conclusion

The financial performance of selected listed and unlisted firms in Ghana is influenced by a complex interplay of factors, as highlighted by the regression results. The intricate relationship between gender diversity, participative work behaviour, board size, firm size, and firm age underscores the importance of considering multiple dimensions when assessing financial outcomes. These findings call for a holistic approach to corporate governance, decision-making processes, and strategic planning. Future research could delve deeper into the industry-specific contexts that might influence these relationships and explore additional variables that could contribute to a comprehensive understanding of financial performance in Ghana's corporate landscape.

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