Board Attributes and Financial Performance of Food and Beverage Companies Quoted on the Nigerian Stock Exchange

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Abstract
The study examines the impact of board attributes on financial performance of Food and Beverage companies quoted on the Nigerian Stock Exchange. The study examines board attributes namely; Board size, board independence and board gender diversity. The study employs three measures for financial performance; Return on equity, Return on assets and Tobin q. The longitudinal research design was adopted for the study. Secondary data was sourced from the annual reports and accounts of the companies for the period of study which is 2010-2018. Preliminary analysis such as descriptive statistics, correlation and multicollinearity analyses were first conducted. Next, the estimations were initially conducted using the individual performance variables and then we proceeded to a more robust estimation aggregating the individual variables into a performance index using the Principal Component Analysis (PCA). The findings revealed that board size, Board independence, Board gender diversity have statistically significant effects on corporate financial performance. The study recommends that corporate governance is a very germane aspect that companies must focus on if they expect to see improvements in performance.

Keywords: Board size, Board independence, Board gender diversity, financial performance

JEL Classification: M00, M14, M20

1. Introduction
The success of business is the focus and main duty of the management of organisations. Ensuring favourable financial performance stands out as an important goal for management and shareholders alike. All activities of most companies are more often than not geared towards how financial performance can be sustained and even improved. Management is continually on the edge as the exit doors of corporations stir them on the face when shareholders become intolerant of dismal financial performance. Corporate board structure has been identified as a critical factor that can affect the financial performance of companies (Ali, Salleh & Hassan, 2008; Skare & Hasic, 2016) and this is because the opportunistic tendency

of managers to engage in unethical practice is reduced in the presence of effective corporate boards. They ensure corporate conformance with investors and society's interests and expectations by limiting the abuse of power, the siphoning-off of assets, the moral hazard, and the wastage of corporate-controlled resources and several other variants of the agency problem. Simultaneously, they establish the means to monitor manager's behaviour to ensure corporate accountability.

A robust set of theoretical paradigms exist in the literature that places in perspective the procedures through which corporate boards are expected to impact on corporate financial performance. For example, the resource based-view theory is of the perspective that corporate boards provide the firm with a robust pool of knowledgeable individuals whose contributions can also provide substantial leverage and competitive advantage for the firm. The agency theory argues that corporate boards lead to effective monitoring of managers and reduces opportunistic behaviour. The agency conflict between managers and shareholders is reduced and this results in improved performance for the firm. In recent times, corporate governance has evolved as an intensely critical issue for organisations especially because of financial crisis.

Though corporate boards are increasingly being viewed as a valued feature of a well-run company and there is a growing literature linking corporate governance to company performance, there is, equally, a growing diversity of results (Korac-Kakabadse, Kakabadse & Kouzmin, 2001). Ammann, Oesch and Schmid (2011) findings showed that better corporate boards practice, significantly reflects on higher market values. This is further supported by Balasubramanian, Black and Khanna (2010), Bauer, Frijns, Otten, and Tourani-Rad (2008) and Tseng, Wu and Lin (2013). In contrast, some studies identify either negative or no correlations between corporate board attributes and company performance. Erkens, Hung, and Matos (2010) established that large board size influences a firm's financial performance negatively. Adusei (2011) found that as the size of the board decreases, its profitability increases. Ajala, Amuda and Arulogun (2012) revealed a negative relationship between board size and banks' financial performance. Shahzad Bajwa, Siddiqi, Ahmid, Raza and Sultani (2016) concluded from their study that board independence had no effect on financial performance. Considering the US context, in tandem with our findings, Choi, Shaker, Yoshikawa, and Han (2014) found no statistically significant relationship between gender diversity and firm performance while Francis, Hasan & Wu (2015) showed a negative relationship between the percentage of female board members and organizational performance. This inconclusive nature of the empirical evidence opens up the area for continuous and further research evaluation. The focus of this study is to examine the effect of corporate boards on financial performance of quoted consumer goods companies in Nigeria.

2. Literature Review

Board Size and Corporate Financial Performance
The agency model suggests that as board size becomes large, the agency problem related to director free riding increases and the board becomes more symbolic and

less a part of the management process (TUC, 2016). Empirically, the evidence regarding the relationship between board size and firm performance is mixed. Anderson *et al*. (2004) found a negative relationship between the board size and the firm value. They outlined that financial markets react positively to the announcement of a board downsizing. Conversely, the announcement of increasing the number of directors in the board leads to reducing the equity value. They stated that this is not the general outline that can be applied to all companies, as it is not a linear reaction. They concluded that the companies who were affected negatively were small- and medium-sized companies, while large companies did not suffer from the same problem. Small boards have been found to be more productive than large ones, evidence showed decrease in efficiency when board size increases, which is attributed to barriers in coordination and processes (Bjatt & Bhattacharya, 2015, Tomorrow's Company, 2017).

Sheikh *et al.* (2012) found that when the board size increases the market responds favourably. In their study they report that large boards provide better monitoring for companies with poor operating performance due to their diversity of backgrounds and communication skills. Sanda, Mukaila & Garba (2005) studying a sample of 93 Nigerian listed firms during the period 1996 to 1999, found a positive correlation between the board size and the firm profitability as measured by return on equity (ROE). Their results support that large boards have better access than smaller ones to the external environment by offering better chances to have wide resource for finance and raw materials. This is in line with resource dependence theory that large boards offer greater access to their firm external environment, which facilitate and secure critical resources (e.g. raw materials and finance) and reduces uncertainties (Babatunde & Akeju, 2016)

Skare and Hasic (2016) found a positive relationship between the board size and the firm performance as measured by ROA, which is in contrast with their prior finding of a negative relationship between board size and the firm performance measured by Tobin's Q. The later result is consistent with Haniffa and Hudaib (2006), Beiner et al., (2006) and Coles et al., (2008). This divergence takes place because of the perceptions of the investors and the management for the large boards which are based on large boards enhancing the knowledge of the business. Ho and Williams (2003); Mangena and Chamisa (2008) and Stout (2016) reported that there is no relationship between the board size and firm performance. As can be seen above from the mixed results, there is no consensus as to whether larger or smaller boards are better in influencing firm financial performance.

Board Independence and Corporate financial Performance
Directors can be classified either as executive (i.e. personnel simultaneously assuming the roles of managers and directors) or non-executive directors, and each category is characterised by different incentives and behaviours (Francis *et al.*, 2015). A combination of both is advised by most national and international corporate governance codes (e.g. the Combined Code in the UK, the OECD Code and the Sarbanes-Oxley Act in the US). Agency theory affirms that sufficient monitoring mechanisms are necessary to protect shareholders from the self-interest of management, and the optimum regulators for this are independent directors. It is

therefore expected that a higher proportion of independent directors in a board indicate improved monitoring and consequently reduced agency problems (Francis et al, 2015). Linck, Netter and Yang (2008) argued that independent directors were intrinsically beneficial to boards due to their experience and firm-specific information; conversely, independent directors provide independent monitoring and improve firm performance. The emergent consensus at least theoretically, is that a diverse, vigilant and strong board of directors exerts a positive influence on firm value, particularly due to improved strategic decision-making and innovation (Tomorrow's Company, 2017).

Although agency theory suggests that independent director's representation improves firm performance, while empirical evidence shows mixed results (Haniffa & Hudaib, 2006; Baranchuk & Dybvig, 2009; Gordini, 2012). Gordini (2012) examined the effect of outsiders on firm performance measured by Return of assets and Return on investment for a sample of 950 Italian small family firms (SFFs) from 2007 to 2009. Gordini reported a positive relationship between them and reports that the independent directors improved firm performance and added value to the firm through their contributions such as skills, experiences and their linkage to the external resources. Khan and Awan (2012) found a positive significant relationship between the outside directors and the firm performance measured by ROA, ROE and Tobin's Q. They conclude that the greater the percentage of outsiders in the board will result in better firm performance and add value to the firm. Conversely, Kumar and Singh, (2012) provided evidence of a negative relationship between the independent directors and some performance measures. The third stream of this relationship provides evidence for no relationship between independent directors and firm performance (Kumar & Singh, 2012). Shahzad et al, (2016) concluded from their study that board independence based on stronger board diversity improvement had no effect on bank performance.

Board Gender Diversity and Corporate financial Performance
Board diversity is the mixture of men and women on the board (Wagana, & Nzulwa, 2016). Currently board diversity is a highly debatable corporate governance topic. The topic put more emphasis on, gender diversity, i.e. the inclusion of women on corporate boards of directors, considered as an instrument to improve board variety and thus discussions (Staikouras *& Agoraki* 2007). This is calculated as the total number of women in the board over the board size in a given period. It is believed that board diversity either directly or indirectly affects coperate governance on the firm. Though board diversity might be a constraint, it goes without doubt that for boards to be effective there is need for diverse perspective (Ogbechie & Koufopoulos, 2009, Sofian, Mustafar, Yusoff, & Heng, 2014). As reported by Dutta and Bose, (2007) the presence of women on boards of directors is limited, even if the literature reveals a slow but steady rise in the female presence on corporate boards throughout the world. With reference to the relationship between gender diversity and organisational performance, the few existing empirical studies show contrasting results (Chen, 2013).

Considering the US context, Choi, Shaker, Yoshikawa, and Han (2014) found no statistically significant relationship between gender diversity and firm performance.

Dutta and Bose, (2007) and Chen, Bu, Wu and Liang (2014) reported a statistically significant positive relationship between both the presence and the percentage of women on the board of directors and market value added (MVA) and firm value. Hasan and Wu (2015) showed a negative relationship between the percentage of female board members and organisational performance. Pathan and Faff (2013) opined that board gender is considered as an improvement to the organizational value and performance as it provides new insights and perspectives (Khodakarami, & Zukarnain, 2015). Campbell and Minguez-Vera (2008) examined the relationship between gender and firm value in Spain. They employed panel data for the empirical analysis. The empirical that gender has a positive effect on firm value and that the opposite causal relationship is not significant. In addition, Skare and Hasic (2016) conducted a study on board gender and firm performance. They found out that women on board of directors have significant positive impact on firm performance. This means that increase in the number of female in the board of directors will significantly lead to increase firm performance. This null hypothesis is thus specified below;

Theoretical Framework
Resource dependence theory emphasises and favours boards of directors due to the wider expertise and knowledge they can provide, as well as improve networking with the external environment. Haniffa and Hudaib (2006) asserted that the fact that Directors can assist to gain access to political and business contacts, capital and information by enhancing networking with external stakeholders, including customers, governments and other companies (e.g. creditors, suppliers and buyers) enables cheaper access to inputs and thus positively affect organisation performance. Pfeffer (1973) and Pfeffer and Salancik (1978) argued that the diversity of the board size and the background of the outside directors were very important elements in managing the company's future capital needs or to manage environment contingency. Pearce and Zahra (1992) also assert that diversifying the board will help the company to survive by benefiting from the exchange of company resources and its external environment. In addition, they report that the presence of the outside directors will result in improving the organization efficient strategies by providing the organisation with new viewpoints and perspectives, which will ultimately improve the financial performance. Carpenter and Westphal (2001) pointed out that organisations' links help them secure their business interests in the event of environmental uncertainty. Furthermore, the resource dependence theory uses the external linkages of the board in order to add value to the organisation and improve the organisation performance. In conclusion, resource dependence theory holds that the operational environment of the organisation is reflected in its board structure which entails that directors are selected according to their ability to facilitate access to required resources.

3. Methodology
This study utilized the longitudinal research design. A sample of 21 quoted companies under the consumer goods sector/industry in the Nigerian stock exchange classification was used for the study. So also, secondary data, by way of annual reports and accounts of the sampled companies in Nigeria and some relevant

NSE fact books were used to collect data for 2010 -2018. The effect of board structure on financial performance was analyzed using panel regression. The pooled OLS, random effects (RE) and fixed effects (FE) were estimated. The Hausman tests for both random and fixed models were conducted. Before the regression analysis, we conducted some diagnostic tests to address some essential assumptions that were fundamental to regression analysis such as Normality, Multicollinearity, Heteroskedasticity Breusch–Pagan test, serial correlation and Ramsey reset test for model specification

Model Specification
The model for the study examines board attributes and corporate financial performance. The model builds on the works of Campbell and Minguez-Vera (2008) and Skare and Hasic (2016). The model is specified below;

$$RQE_{it} = \partial_0 + \partial_1 BDIND_t + \partial_2 BDS_{it} + \partial_3 BDGD_{it} + \partial_4 LEV_{it} + \partial_5 FSIZE_{it} + \varepsilon_{it} + \mu_{it} \ldots\ldots 1$$
$$RQA_{it} = \partial_0 + \partial_1 BDIND_t + \partial_2 BDS_{it} + \partial_3 BDGD_{it} \quad \partial_4 LEV_{it} + \partial_5 FSIZE_{it} + \varepsilon_{it} + \mu_{it} \ldots\ldots 2$$
$$TOBIN\text{-}Q_{it} = \partial_0 + \partial_1 BDIND_t + \partial_2 BDS_{it} + \partial_3 BDGD_{it} \quad \partial_4 LEV_{it} + \partial_5 FSIZE_{it} + \varepsilon_{it} + \mu_{it} \ldots 3$$

Where: *ROE= Return on equity, ROA= Return on assets, TOBIN-Q= Tobin Q measure of firm value, BS=Board size, BIND= Board independence, BDGD= Board gender diversity,* LEV= Leverage, FSIZE= Firm size, i =ith firm, t = time period, μ_{it} = Model disturbance term, ε_t = Stochastic term, i = number of sampled cross-sectional firms, t = time period of the sampled companies.

The apriori signs are $\partial_{1<} 0$, $\partial_2 <0$, $\partial_3 < 0$, $\partial_4 <0$ $\partial_5 < 0$, $\partial_6 <0$,

Table 1: Variable Definition and Measurement

Variable	Definition	Measurement	Source	Aprori sign
ROE	Return on equity	Profit after tax/ total equity	Enobakhare, (2010).	
ROA	Return on assets	Profit after tax/ total assets	Ahmad & Jusoh, (2014)	
TOBIN Q	Tobin Q	Ratio between the market value of the firm's assets and the replacement value of those assets	Adeyemi and Fagbemi, (2010)	
BDIND	Board Independence	Ratio of pnon-executive directors on the board	Bhatta and Bhattacharya (2015)	+
BDGD	Board gender diversity	Board Female-male ratio.	Ogbechie & Koufopoulos, (2009)	+
BDSIZE	Board size	Number of individuals on the board.	Ogbechie & Koufopoulos, (2009)	+
LEV	Leverage	Debt-equity ratio	Sanda, etal (2005)	
FSIZE	Firm size	Log of total assets	Chen, (2013)	

Source: Researcher's compilation (2019)

4. Result

Table 2: Descriptive statistics

	Mean	Median	Maximum	Minimum	Std. Dev.	Jarque-Bera	Probability
BDSIZE	9.7291	10	17	4	2.5963	6.4897	0.0389
BDIND	0.4119	0.6331	0.75	0.11	1.4159	4958.52	0.000
BDGD	0.2961	0.08	0.40	0.00	0.8025	3904.59	0.00
ROA	0.8438	0.2981	11.0205	-5.0129	1.7048	2949.233	0.00
ROE	1.2631	0.2558	36.4726	-0.3803	51.0143	216.0307	0.000
TOBINQ	2.4181	1.5076	91.5093	-77.874	58.2001	140795.2	0.00
FSIZE	6.9248	6.9332	8.9760	5.31917	1.2237	7011.874	0.00
LEV	0.2692	0.2280	1.5401	0.068594	0.2103	1021.952	0.00

Source: Researcher's compilation (2019)

The descriptive statistics of the data is presented in Table 2 above. As observed, board size had an average value of approximately 10 which implies that, the average board size for the sample is 10 members. There is still a lot of controversy in management literature regarding the appropriate number of individuals that should make up an ideal board size. The maximum and minimum values stood at 17 and 4 respectively and the dispersion of the data about the mean is at 2.596 The Jacque-bera value of 6.48978 and p-value of 0.00 confirms the normality of the data. BDIND has an average value of 0.41 which indicates that about 41% of board members are independent members with maximum and minimum values of 75% and 11% respectively and the standard deviation of 1.4159 suggest considerable clustering around the distribution mean. The Jacque-bera value of 4958.732 and p-value of 0.00 confirms the normality of the data. The Board gender diversity is 0.296 which suggest that on the average about 29.6% of board members are females. The maximum and minimum values are 40% and 0 respectively. The Jacque-bera value of 3904.59 and p-value of 0.00 confirms the normality of the data.

ROA has a mean of 0.843 with maximum and minimum values of 11.020 and minimum of –5.01 respectively. The standard deviation is 1.7048 which imply the dispersion of ROA from the distribution mean. ROE has a mean of 1.3 with maximum and minimum values of 36.47 and minimum of -0.3803 respectively. The standard deviation stood at 51.0143 which is an indication of the extent of dispersion of ROE from the distribution mean. Tobin q has a mean of 2.418 with maximum and minimum values of 91.509 and minimum of -77.874 respectively with a standard deviation at 58.200. The average LEV Ratio is about 0.30 with a maximum value of 1.44 and minimum value of 0.069 respectively. The standard deviation showing the dispersion of the data about the mean is quite low at 0.2094. The mean value for firm size measured as log of total assets stood at 6.9248 with maximum and minimum values of 8.976 and 5.31917 respectively with a standard deviation of 1.223. The Jacque-bera value of 7011.874 and p-value of 0.00 confirms the normality of the data. The average LEV Ratio is about 0.269 with a maximum value of 1.54 and minimum value of 0.069 respectively. The standard deviation showing the dispersion of the data about the mean is quite low at 0.210369. The Jacque-bera value of 1021.952 and p-value of 0.00 confirms the normality of the data.

From Table 3, the correlation coefficients of the variables are examined. However of particular interest to the study is the correlation between corporate financial performance measures (ROE, ROE and Tobin Q) and the independent variables. As observed, BDSIZE is positively correlated with ROA (r=0.026) though not significant at 1 or 5%, negatively correlated with ROE (r=-0.008) though not significant either at 1% or 5% and positively correlated with Tobin Q (r=0.046) which is also not significant at 1or 5%. As observed, BIND is negatively correlated with ROA (r=-0.083) and Tobin Q (r=-0.009) but positively correlated with ROE (r=0.005) though none of the estimates were significant either at 1% or 5% level and hence no significant association was detected. BDGD is negatively correlated with ROA (r=-0.137) and Tobin Q (r=-0.007) and positively correlated with ROE (r=0.007) though none of the estimates were significant either at 1% or 5% level and hence no significant association was detected.

Table 3: Pearson Correlation Matrix

		BDSIZE	BDIND	BDGD	ROA	ROE	TOBINQ	FSIZE	LEV
BDSIZE		1							
BDIND		.302**	1						
	Sig	0							
BDGD		.294**	.771**	1					
	Sig.	0	0						
ROA		0.026	-0.083	-.137*	1				
	Sig	0.61	0.103	0.007					
ROE		-0.008	0.005	0.007	.202**	1			
	Sig.	0.87	0.917	0.885	0				
TOBINQ		0.046	-0.009	-0.007	-0.005	-0.027	1		
	Sig.	0.365	0.853	0.884	0.914	0.591			
FSIZE		.160**	0.068	0.021	-0.092	.291**	0	1	
	Sig.	0.002	0.182	0.683	0.07	0	0.993		
LEV		-0.009	-.101*	-.102*	-0.04	-0.027	0.025	.165**	1
	Sig.	0.86	0.045	0.043	0.426	0.596	0.617	0.001	

*Note: * Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed).*
Source: Athours' Computation (2019)

Table 4: Variance Inflation Factor Test

Variable	ROE	ROA	TOBINQ
BSIZE	1.708008	1.9151	1.698156
BDIND	1.292583	4.910936	1.285217
BDGD	1.133199	4.615146	1.129367
FSIZE	1.619738	1.610688	1.614340
LEV	1.129346	1.041354	1.133105

Source: Athours' Computation (2019)

The variance inflation factor (VIF) explains how much of the variance of a coefficient estimate of a regressor has been inflated, as a result of collinearity with the other regressors. Essentially, VIFs above 10 are seen as a cause of concern as

observed, none of the variables have VIF's values more than 10 and hence none gave serious indication of multicollinearity.

Table 5 show the regression results of the fixed effects (FE) model as the preferred estimation technique based on the Hausman test statistic. Column 3 shows the estimation results for the relationship between corporate governance and ROE measure of financial performance. The hausman statistics of 0.006 justifies the presentation of fixed effects estimation result. As shown in the results, the R^2 for the model is 0.1752 which implies that the model explains about 17.52% of the systematic variations in the dependent variable with an adjusted value of 12%. The F-stat is 3.18808 (p-value = 0.00) is significant at 5% and suggest that the hypothesis of a significant linear relationship between the dependent and independent variables cannot be rejected. The analysis of coefficients reveals BDS is positive (0.19592) and significant (p=0.0322) at 5%. The positive coefficient suggests that increase in board size will result in an increase in corporate financial performance. BIND has a negative beta (-1.25186) and also significant (p=0.0.0149) at 5%. BDGD had a positive beta (0.226307) though not significant (p=0.3498) at 5%. A look at the control variables reveals that the coefficient of firm size is positive (0.2715) and significant at 5% while that of leverage is negative (-0.95964) and significant at 10%.

Column 4 shows the estimation results for the relationship between corporate governance and ROA measure of financial performance. The hausman statistics of 0.00 justifies the presentation of fixed effects estimation result. As shown in the results, the R^2 for the model is 0.5246 which implies that the model explains about 52.46% of the systematic variations in the dependent variable with an adjusted R^2 of 43.5%. The F-stat is 16.50849 (p-value = 0.00) which is significant at 5%. The analysis of coefficients reveals BDS is positive (0.0035) though not significant (p=0.4688) at 5%. BIND has a positive beta (0.01539) and though not significant (p=0.1025) at 5%. BDGD had a negative beta (-0.01767) and not also significant (p=0.344) at 5%. A look at the control variables reveals that the coefficient of firm size and leverage is positive though not significant at 5%.

The robust estimation using the financial performance index is used for the results discussion and test of hypothesis. The analysis of coefficients reveals BDS as negative (-0.01078) though not significant (p=0.4240) at 5%. The result implies that increasing the board size will lead to a decline in financial performance. Hence we accept the null hypothesis that board size has no significant effect on corporate financial performance. As observed earlier, in the literature, there is still no consensus regarding what constitutes an appropriate or optimal board size. The findings of the study are in tandem with Kholief (2009) Ahmed, Hossain and Adams (2006) but is in contrast with the views of Bhatt and Bhattacharya, (2015), Francis, Hassan and Wu (2015), Tomorrow's Company (2017).

Column 5 shows the estimation results for the relationship between corporate governance and Tobin q measure of financial performance. As shown in the results, the R^2 for the model is 0.2440 which implies that the model explains about 24.0% of the systematic variations in the dependent variable with an adjusted R^2 of

19.36%. The F-stat is 4.842 (p-value=0.00) is significant at 5%. The analysis of coefficients reveals BDS is positive (0.0662) though not significant (p=0.1594) at 5%. BIND had a negative beta (-0.40459) and significant (p=0.0311) at 5%.

Table 5: Regression Result

Variable	Aprori sign	ROE	ROA	TOBINQ	Financial performance index
C		-4.0715*	0.74205*	0.8849	-0.14823
		(1.130)	(0.1254)	(1.111)	(0.4103)
		{0.0004}	{0.000}	{0.4263}	{0.7183}
BBSIZE		0.19592*	0.0035	0.0662	-0.01078
	+	(0.0911)	(0.0048)	(0.047)	(0.0135)
		{0.0322}	{0.4688}	{0.1594}	{0.4240}
BDIND		-1.2518*	0.01539	-0.40459*	-0.64375*
	+	(0.5118)	(0.0094)	(0.1869)	(0.2059)
		{0.0149}	{0.1025}	{0.0311}	{0.0020}
BDGD		0.226307	-0.01767	-0.12952	-1.11447*
	+	(0.24175)	(0.0186)	(0.248021)	(0.3725)
		{0.3498}	{0.344}	{0.6019}	{0.0031}
FSIZE		0.2715*	0.001117	0.13461	0.10632
	+	(0.1206)	(0.0183)	(0.1158)	(0.0669)
		{0.025}	0.9512	{0.2459}	{0.1137}
LEV		-0.95964	0.07684	0.103977	-0.3222
	+	(0.5181)	(0.0534)	(0.462667	(0.17352)
		{0.0649}	{0.1514}	{0.8223}	{0.0648}
		Model Parameters			
R^2		0.175284	0.524632	0.244034	0.7029
Adjusted R^2		0.120303	0.492852	0.193636	0.6382
F-statistic		3.18808	16.50849	4.842166	10.00
Prob(F-stat)		0.000001	0.000	0.000	0.00
D.W		1.7	1.7	1.9	1.8
		Model Diagnostics			
Hausman		0.006	0.000	0.011	0.004
serial corr.		0.893	0.546	0.536	0.893
B-G for Hetero.		0.554	0.435	0.592	0.554
Ramsey Reset test		0.410	0.120	0.383	0.467

*Note: standard errors in parenthesis; p-values, * sig at 5%*
Source: Athours' Computation (2019)

The result shows that increasing the number of independent directors on the board will not result in an increase in Tobin q value of the firm. BDGD had a negative beta (-0.12952) though not significant (p=0.6019) at 5%. A look at the control variables reveals that both firm size and leverage are positive though not significant at 5%.

BIND had a negative beta (-0.64375) and significant (p=0.0020) at 5%. The result shows that board independence is a significant determinant of financial performance though increasing the number of independent directors on the board will not necessarily result in an increase in financial performance of the firm. Hence we reject the hypothesis that board independence had no significant effect on corporate financial performance. Empirically, the results have been quite mixed

51

in the literature (Haniffa & Hudaib, 2006; Baranchuk & Dybvig, 2009; Gordini, 2012). Gordini (2012) reported a positive relationship between BIND and firm performance. Conversely, Bozec (2005) provided evidence of a negative relationship between the independent directors and firm financial performance measures and studies like Arosa, Hurralde and Maseda (2012) and Kumar and Singh (2012) provide evidence for no relationship between independent directors and firm performance.

Column 6 results show a robust estimation where the board attributes were regressed against the financial performance index by aggregating the different performance variables to derive a uni-dimensional statistical index of corporate financial performance using principal component analysis (PCA). More recently, studies have applied principal components analysis to such data to derive an index (McKenzie 2003). PCA handles efficiently and statistically the issue of what weights to be assigned to each variables using the eigen-values. As shown in the results, the R^2 is 0.703 which implies that the model explains about 70.3% of the systematic variations in the dependent variable with an adjusted R^2 of 63.8%. The F-stat is 10.00 (p-value = 0.00) and significant at 5%. The analysis of coefficients reveals BDS is negative (-0.01078) though not significant (p=0.4240) at 5%. BIND has a negative beta (-0.64375) and significant (p=0.0020) at 5%. The result shows that increasing the number of independent directors on the board will not necessarily result in an increase in financial performance of the firm. BDGD has a negative beta (-1.11447) and significant (p=0.0031) at 5%. The result implies that a less female presence in the board is better for firm financial performance; a look at the control variables reveals that the coefficient of both FSIZE and LEV do not show any statistical significance at 5% level of significance.

The effect of BDGD is negative (1.11447) and statistically significant (p=0.0031) at 5%. The result implies that a less female presence in the board is better for firm financial performance. Hence we reject the hypothesis that board diversity has no significant effect on corporate financial performance. With reference to the relationship between gender diversity and organisational performance, the few existing empirical studies show contrasting results (Ishak & Manaf, 2013, Chen, 2013, Wagana & Nzulwa, 2016). Considering the US context, in tandem with our findings, Choi, Shaker, Yoshikawa, and Han (2014) found no statistically significant relationship between gender diversity and firm performance. In the same vein, Francis, Hasan and Wu (2015) showed a negative relationship between the percentage of female board members and organisational performance. Adams and Mehran (2012) concluded from their study that board based on stronger board diversity improvement has no effect on firm performance. Eklund, Palmberg and Wiberg (2009) found that a negative relationship exist between female board members and bank performance. However, Dutta and Bose, (2007) and Chen, Bu, Wu and Liang (2014) reported a statistically significant positive relationship between both the presence and the percentage of women on the board of directors and firm value.

6. Conclusion and Recommendation

The board structure and attributes have been identified as critical to the firm's financial performance. This is because the opportunistic tendency of managers to engage in unethical practice is reduced in the presence of effective corporate board structure. They ensure corporate conformance with investors and society's interests and expectations by limiting the abuse of power, the siphoning-off of assets, the moral hazard, and the wastage of corporate-controlled resources and several other variants of the agency problem. Consequently, the study examined board attributes and financial performance of food and beverage companies quoted on the Nigerian Stock Exchange. The study employed three measures for financial performance; Return on equity, Return on assets and Tobin q. The analysis of coefficients revealed that the effect of Board size on financial performance is negative and significant at 5%. The effect of Board independence on corporate financial performance is positive and statistically significant at 5%. The effect of Board gender diversity is negative and statistically significant at 5%. Based on the findings, the study recommends that companies must ensure that they maintain a board size that is not large. Although, there is yet no consensus as to what number constitutes a large board, it is the opinion of the researchers that companies maintain not less than eight (8) members this again depends on the size and other peculiarities of the companies. The study also recommends that companies should increase the number of their independent directors and finally companies should find an appropriate gender diversity mix.

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