

Board Diversity and Financial Performance of Listed Manufacturing Firms in Nigeria

Adekunle Emmanuel ADEGBOYEGUN^{1*}, Olusola Esther IGBEKOYI¹

¹Department of Accounting, Faculty of Administration and Management Sciences, Adekunle Ajasin University, akungba-Akoko, Ondo State, Nigeria

DOI: [10.36348/sjbms.2022.v07i02.001](https://doi.org/10.36348/sjbms.2022.v07i02.001)

| Received: 16.12.2021 | Accepted: 25.01.2022 | Published: 09.02.2022

*Corresponding author: Adekunle Emmanuel ADEGBOYEGUN

Department of Accounting, Faculty of Administration and Management Sciences, Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria

Abstract

This study examines the effect of board diversity on the financial performance of manufacturing firms in Nigeria. The motivation for the study lies in the increased quest to establish the most appropriate board with the optimum mix needed to guarantee the absence of corporate failure. The study comprises of 64 listed manufacturing firms as at 31st December 2020, and sample size of 20 listed manufacturing firms were selected using purposive sampling technique. Data were obtained from annual reports of the selected firms from 2011 to 2020. Descriptive statistics and panel regression estimation techniques were used to analyze the data collected. The findings shown that board diversity has an insignificant effect on performance except for financial expertise diversity with a positive effect on financial performance, and there is a presence of long run relationship with firm performance. Based on these findings, the study therefore concludes that diversity on the board in terms of gender, ethnicity and educational background will not really improve or reduce performance of the firms while diversity in terms of financial expertise will do. Thus, it is recommended that greater measures need to be taken by manufacturing firms in Nigeria to have a higher percentage of board members with financial expertise, and directors with certified financial expertise should be allowed to stay longer on the boards to guarantee improved performance in the long run.

Keywords: Board diversity, gender diversity, educational background diversity, ethnicity diversity, financial expertise diversity, financial performance.

Copyright © 2022 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

1 INTRODUCTION

Global corporate failure emerged as one of the major issues that confronted major organizations in the 21st century. This failure in supposedly “too big to fail” organizations like the WorldCom and Enron was largely attributed to a defective corporate governance framework (Ali, 2014). Ali (2014) further argued that a strong board of directors as well as a robust corporate governance framework would play a significant part in mitigating the challenges that faced the corporate world in recent times. In a bid to take a clue from the past while leaning backwards to project a better future, several regulatory bodies across the globe developed standards and regulations on best practice for corporate governance activities. Prominent among such tenets are

issues pertaining to CEO duality, directors’ shareholding, board size among others.

Ordinarily, the board of directors should be considered as the core of corporate governance as matters pertaining to governance of a firm are ironed out in this circle. Thus, being a crucial part of corporate governance, the board should be the major target of many corporate governance standards. Although, there are several compulsory standards for the board, there are only a few global standards that directly addresses the issue of diversity within the board of directors like Davies Report on corporate governance. Most of these standards merely made recommendations on board diversity with only few governments imposing quotas (Okeyide, 2018).

Board diversity which captures the variety of entities on boards of organizations comprising diversity in gender, skills, experience, qualifications and ethnicity has been recommended in such standards for the balance and holistic view it tends to bring to the table. In Nigeria, the cultural heritage seems to advocate some imbalance vis-à-vis governance and authority in the society (Okeyide, 2018). Thus, diversity across the terrain like in other parts of the African continent is still largely in its cradle. However, certain moves have been made in this regards as board diversity has been recommended by the Securities and Exchange Commission as the second principle in the second section in its code of corporate governance (NCCG, 2018). However, this can just be regarded as a recommendation as no quota has been imposed neither has specific guidelines been provided to guarantee the implementation of board diversity in Nigeria.

In extant literature, arguments have been made for and against board diversity. A school of thought upheld by Jensen (1993) as well as Pfeffer and Salancik (1978) in the agency as well resource dependency theories further substantiated by empirical findings by Wahid (2019), Igbekoyi, Adegbayibi and Adesina (2021) as well as Cumming, Leung and Rui (2015) advocates board diversity premised on the notion that a more diverse board with varied skills and different perspectives will generate more efficiency and resource utilization. On the other hand, another school of thought advanced by Putnam (2007) and substantiated by the findings of Adusei and Obeng (2018), Khaoula and Moez (2019) as well as Ilaboya and Ashafoke (2017) have argued against board diversity owing to the belief that a more diverse board will incur more cost to the firm as regards communication, coordination and conflict among the directors due to their varying backgrounds. Meanwhile, this study equally seeks to advance contributions in literature by examining the presence of co-integration between board diversity and performance as most of these studies have equally failed to examine the presence of a long run co-integrating relationship between board diversity and firm performance.

Furthermore, most studies in extant literature especially in Nigeria such as that of Igbekoyi, *et.al.* (2021) and Aladejebi (2021) among others focused on the banking sector. Therefore, this study seeks to advance existing contributions by focusing on the manufacturing sector as the sector accounts for a significant portion of the nation's GDP. In addition, several contributions viewed diversity solely from different angles with most studies focusing on gender (Igbekoyi, *et. al.*, 2021; Song, Yoon & kang, 2020; Mohsni, Otchere & Shahriar, 2021). However, this study seeks to adopt a four-pronged approach to diversity as gender, educational background, ethnicity and financial expertise diversities were examined.

The broad objective of this study is to examine the effect of board diversity on financial performance of listed manufacturing firms in Nigeria. The study focused on four key component of board diversity attributes; these includes, gender diversity, ethnicity, educational background and financial expertise. The study is of significance to the management of corporate organizations as well as policy makers in the world of corporate governance because the study seeks to provide evidence on the impact of diversity within corporate boards on performance. Furthermore, the study will focus on manufacturing firms with the scope spanning from 2011 to 2020.

2 Literature Review and Hypotheses Development

2.1.1 Board Diversity

Board diversity refers to the variation present in the make up of an organization's board (Song *et al.*, 2020). Furthermore, Ozgur (2020) explicated board diversity to be a diverse blend of features, qualities, and proficiency made available by the individuals in the board room as an input to the decision-making process. A board with variety can facilitate the effective overseeing of the managers because the varying inputs they seek to provide will make the work more effective (Wahid, 2019). Congruently, the resource dependency theory as advanced by Preffer and Salancik (1978) affirms that board diversity can equally sharpen the abilities of board members as they can benefit from the various resources that is embedded in their unique identities. Thus, they can create stronger networks with the further avenue to gain uniquely different information crucial to the decision-making process,

Previous studies categorised diversity at board level into different classes premised on the features they exhibit in terms of experiences, skills, and demographics (Bernile, Bhagwat & Yonker, 2018; Harjoto, Laksmana & Yang, 2018). In this study, board diversity refers to the heterogeneity that exists within the board premised on the attributes specified above. Therefore, organizations with diversified specialities are more likely to dispense more information which will then mitigate issues arising from information asymmetry and agency conflicts. Also, this study in conformity with existing literature examines the features of board members on four focal areas which include gender, ethnicity, educational background and financial expertise.

2.1.2 Financial performance

Financial performance is the measure of a company's financial health at a particular period of time (Naz, Ijaz & Najvi, 2016). In other words, it is a financial accomplishment generated through increased sales, profit and value of the organization to its shareholders via proper management of its finances. Management is expected to take conscious steps to

improve the financial performance of the company because it forms a cogent area of concern to stakeholders, especially the owners. This is because high financial performance indicates increase in wealth of the shareholders (Fauzi & Locke, 2012). In the context of this study, financial performance determinant considered is earnings per share (EPS). Although, there are various measures of a company's financial wellbeing, this study specifically adopted these variable to cover external assessment of financial performance in order to have a broader view of the concept

Earnings per share (EPS) is significant to this study because it points to the extent of profit made on each share and is commonly employed as a standard for measuring firm value. EPS refers to the proportion of the firm's net profit in relation to its number of outstanding common stock. In a comparative analysis of organizations, it is essential to study the trends of EPS and its relation to the earnings of competitors (Myskoya & Hajek (2017). EPS signifies the capacity of the organization to make accounting-based revenues above the actual expenses from a given outstanding number common shares. A higher EPS can indicate growth and stock price enhancement, though it does not guarantee it. It is the net income of a firm divided by its total outstanding shares.

2.1.3 Gender diversity

Sila, Gonzalez, and Hagendorff, (2016) suggested that gender diversity refers to the extent to which the gender identity of a person, activity or expression differs from cultural believes prescribed for people of a certain sex. It is the umbrella term that is used to describe gender identities that demonstrate a diversity of expression beyond the binary framework. It is one aspect of diversity that has been researched on in organizations. Overall, studies show that the work of women is still measured differently from that of men. The majority of gender studies focus on the person in the group and how that individual is affected by being a token, a minority, or a majority member of the group. Several researches have looked into the impact of female directors (Bruna, Dang, Scotto, & Ammari, 2019; Sila *et al.*, 2016).

Terjesen, Sealy, and Singh (2009) identify almost 400 published references on the topic in the most complete analysis of this research, stating that prior studies on the direct effect of female directors on performance are inconclusive. Despite conflicting findings and the inability to identify whether female directors have a favourable or negative impact on business performance, most studies suggest that gender diversity has a positive impact on firm performance. Hutchinson, Mack, and Plastow (2014) emphasize this favorable association by stating that women directors improve financial performance. At both the individual and team levels, board gender diversity can have an impact on board efficiency. Researchers have

discovered that females differ from males in ways that can boost board efficiency at the individual level. Many studies have found that teams containing female members are more adept at addressing complicated challenges (Agarwal, Qian, Reeb, & Sing, 2016; Croson & Gneezy, 2009; Niederle & Vesterlund, 2007).

Cumming *et al.* (2015) look into the effect of board gender diversity on securities fraud and discover that it reduces both the frequency and severity of fraud. Wahid (2019) finds that listed companies with more gender-diverse boards make fewer financial reporting errors and commit less fraud. Liu (2018) looks at the link between board gender diversity and corporate environmental violations, and discovers that companies with more gender-diverse boards face lower penalties.

2.1.4 Ethnicity diversity

Ethnicity diversity refers to cultural factors, including nationality, regional culture, ancestry, religion or language. The nationality of directors is one of the main characteristics of board diversity. The increasing internationalisation of business leads to higher demand for directors who possess the necessary knowledge and contacts in foreign markets to link the firm to the different contexts of the countries in which it operates (Mohsni *et al.*, 2021). The literature suggests that foreign directors go beyond financial contributions and extend to the provision of managerial expertise and technical collaborations, increasing creativity and innovation. Directors with different ethnics introduce heterogeneity of ideas, experiences and points of view (Ezat & El-Masry, 2008). Diversity on boards may reduce information asymmetry and the associated agency costs; improve the financial flexibility of domestic firms by increasing the pool of potential investors and financing opportunities; and expand cross-border flows of knowledge and technology.

The empirical evidence on the impact of race (ethnicity) on risk taking propensity is limited. Two recent experimental studies document that ethnic minority individuals are more risk averse than individuals from an ethnic majority group. Potential explanations for the difference in risk preference are that ethnic minority participants perceive more severe negative consequence from loss (Sansani, 2018) and are more sensitive to loss (penalty) associated with risk taking than those from the ethnic majority group (Collado, Risco, Banducci and Chen, 2017). According to Masulis, Wang and Xie (2012), foreign directors are likely to be less familiar with national accounting rules, laws and regulations, governance standards, and management methods, making it more difficult for them to evaluate managerial performance or challenge managerial decisions.

2.1.5 Educational background diversity

Education diversity could be explained as different set of task relevant skills, knowledge and

abilities possessed by team members as a function of their educational background (Bernile, *et.al*, 2018). Education level is often viewed as a good proxy for human capital, knowledge base, or intellectual competence (Barro & Lee 2010). Top managers of the firm are hired probably because of their superior ability. According to Bhagat, Bolton, Subramanian (2010), such ability consists of observable characteristics (educational backgrounds and work experiences) and unobservable characteristics (leadership and entrepreneurial skills). They contend that since the unobservable characteristics are relatively difficult to identify and measure, the observable characteristics may play an important role.

According to upper echelon theory (Hambrick & Mason 1984), to make a crucial decision for the firm such as decision in strategic measure, the demographic characteristics such as age, tenure and other characteristics are probably the important factors that will influence the decision-making. Harjoto *et al.* (2018) suggested that the board of directors is expected to be effective in improving the agency problems between shareholders and managers. The impact of the professional background of the board on the decisions have been rarely discussed. According to the upper-echelon theory, higher level of education is associated with open mindedness, capacity for information processing, and tolerance to changes.

Bhagat *et al.* (2010) find weak relationship between educational diversity and firm performance. Furthermore, Similar to Mahadeo, Soobaroyen and Hanuman (2012), their study focuses on the boards of the 39 publicly listed companies, which comprises 371 directors on the Stock Exchange of Mauritius, a developing economy and an ex-British colony. The results indicate that boards which possess a higher mix of educational backgrounds will result in lower corporate performance. On the other hand, it is revealed that higher educational level of top management teams is associated with higher level of international diversification (Herrmann & Datta, 2005). The study states that the result indicates support for the notion that the superior information-processing capabilities, greater flexibility and openness to change associated with higher educational levels result in executives favouring international diversification.

2.1.6 Financial Expertise diversity

Gambo, Terzungwe, Joshua and Agbi (2019) refer to financial expertise diversity as the proportion of people with professional skills on the board of an organization. It is different fields of study found among the persons on the board, and it is heterogeneous based on the levels and types of education amongst the board members. Adusei (2019) stated that, since the board was mandated to supervise the organization, they were required to have the knowledge which would allow them to carry out their roles perfectly. Board Financial

expertise has to do with the number of directors on the board with professional skills in the area of accounting, finance, management and insurance.

According to VO and Phan (2013), such skills should be in marketing, IT, accounting and legal issues affecting the organization. Financial experts can contribute to the firm their knowledge of financial instruments and project valuation hence the firm can benefit from their presence and increase its value; also, knowledge of the financial sector can help to avoid excessive risk-taking. Moreover, the appointment of the financial expert can have a positive impact on the firm's reputation. Therefore, experts can influence several firm performance characteristics, such as: investment opportunities by increasing the firm's reputation and by choosing more carefully projects to undertake; stock performance by increasing firm's reputation as well, and by providing better financial instruments knowledge; firm's value can be affected by all the factors above too.

Egwakhe, Akpan, & Ajayi (2019) revealed a statistically significant relationship between board expertise diversity and profitability of selected and listed insurance companies in Nigeria. Those board members, who have experience, know what to ask from the organization's auditors to bring about a better audit process within the organization. Consequently, this means that all the board's members are able to contribute positively to the decision-making process. Also, the submission of Jizi, Salama, Dixon and Stratling (2014) is an indication that the knowledge of director should be considered alongside the educational and financial expertise. Erkens, Hung and Matos (2012) find that independent directors in financial organizations are associated with worse stock performance during crisis. Nwonyuku (2016) concluded that board expertise and competence have negative relationship with return on equity and net assets per share.

2.2 Theoretical Underpinning

This study is based on the assumption of the resource dependence theory. The resource dependence theory as propounded by Pfeffer and Salancik (1978) is hinged on the assumption that a firm is an open system that heavily relies on exigencies within its external environment. In other words, the theory seeks to explain the ecology of a firm, the influencing factors within the ecosystem as well as interplay of forces necessary to reduce the uncertainties in this ecosystem (Ulrich & Barney, 1984). Thus, firms need the right governance board to mitigate externalities that may arise from the dependent relationship that a firm has with its environment.

The theory further assumed that there are interdependencies within a corporate environment where firms are largely affected by the activities and

inactivates of other firms. This has led to inter and intra-organizational tussle of power which has birthed several issues such as mergers and acquisitions especially when the firm seeks to enjoy monopoly of market power as well as board diversity. Premised on the assumption that a strong board is needed to mitigate such externalities while resources are put to best use, it is therefore vital to establish a board with varying degrees of expertise, experience, skills and competence. In other words, the composition and diversity of the board are essential to the responses of a firm to its external environment. However, in recent times, the theory has been criticised that other strategies and agencies such as outsourcing other than the board can be employed to tackle externalities in the firm's ecology (Zehir, Findikli & celtekhgil, 2019).

2.3 Empirical Literature

Igbekoyi, *et.al.* (2021) examined the relationship between female directors and corporate social performance of banks in Nigeria between 2010 and 2018. The study which used descriptive statistics and the feasible generalized least square regression revealed that female gender inclusion on boards has a positive relationship with corporate social responsibility expenditure. In Nigeria, Aladejebi (2021) studied the connection between board gender diversity and performance of banks in Nigeria between 2015 and 2019. The study which used trend and correlation analysis revealed that gender diversity has no significant effect on bank performance.

In China, Luo, Lim, Qu and zhang (2021) examined the relationship between cultural diversity within corporate boards and corporate innovation effectiveness premised on government intervention between 2008 and 2016. The study employed the two-stage least squares technique for analysis revealing that board cultural diversity has a positive relationship with corporate innovation effectiveness as far as the government interference is low. Mohsni *et.al.* (2021) studied the moderating effect of culture on the relationship between board gender diversity and firm performance in 27 developing countries between 2005 and 2016. Adopting the panel regression analysis, it was revealed that gender diversity reduces firm risk and increases performance of firms.

Ji, Peng, Sun and Xu (2021) empirically examined the relationship between board diversity and firm risk across 37 countries between 1999 and 2017. Employing the OLS technique, the study divulged that board diversity reduces firm risk. In the USA, Song *et.al* (2020) studied the effect of board age and gender diversity on firm performance between 1993 and 2018. Adopting the panel OLS technique, it was revealed that gender diversity has positive effect on performance while age diversity has an insignificant effect on firm performance. In a cross country analysis capturing 64 countries, Adusei (2019) studied the effect of board

diversity and size on technical efficiency of 418 microfinance institutions between 2010 and 2014. The study which used logit and probit regression as well as GLM analysis revealed that board diversity has negative effect on technical efficiency.

Khaoula and Moez (2019) studied the moderating effect of board characteristics on firm value and tax planning in Europe between 2005 and 2012 using the Generalized Least Squares technique. They discovered that board diversity had a negative effect on firm value and tax planning. In Asia, Low, Roberts and Whiting (2015) studied the effect of board gender diversity on corporate performance in Hong Kong, South Korea, Malaysia and Singapore between 2012 and 2013. Using the Ordinary Least Square technique, it was discovered that board diversity in terms of gender exert positive effect on performance. Ujunwa, Nwakoby and Ugbam (2012) examined the effect of board diversity on firm performance in Nigeria between 1991 and 2008. Adopting the Generalized least square method, it was revealed that gender diversity has negative effect on performance while ethnic diversity proved otherwise.

Studies conducted in the Nigeria context still show evidence of mixed findings. Okeyide (2018) studied the relationship between board diversity and performance between 2004 and 2013. The study used the OLS technique for analysis revealing that board gender diversity had an insignificant effect on performance while ethnic diversity had a positive effect on performance. Ogboi, Aderimiki and Enilolobo (2018) equally studied the nexus between board diversity and bank performance in Nigeria between 2011 and 2015. The study which used the generalized least square estimation method divulged that gender diversity has a positive effect on firm performance. Ilaboya and Ashafoke (2017) investigated the relationship between board diversity and performance of banks between 2010 and 2015. The study which used the OLS technique revealed that while gender diversity has a negative effect on performance, ethnic and nationality diversity has no effect on bank performance.

In a cross-country analysis, Garcia-Meca, Garcia-Sanchez and Martinez-Ferrero (2015) examined the effect of board diversity on bank performance in USA, Canada and Europe between 2004 and 2010. Analysis was carried out through the two-stage least squares revealing that board diversity has less impact on bank performance especially in a weak regulatory environment. The inconsistencies in the submission regarding board diversity is an indication that there are underlining factors that determine the financial performance of firms. The hypotheses are therefore stated as:

H₀₁: Board gender diversity does not significantly affect financial performance of listed manufacturing firms in Nigeria

H₀₂: Ethnicity diversity does not significantly affect financial performance of listed manufacturing firms in Nigeria

H₀₃: there is no significant association between educational background diversity and financial performance of listed manufacturing firms in Nigeria

H₀₄: there is no significant association between financial expertise diversity and financial performance of listed manufacturing firms in Nigeria

3 DATA AND METHODS

Ex-post facto research design was applied to examine how board diversity influence the financial performance of listed manufacturing firms in Nigeria. The study made use of Panel data for 20 out of the 64 listed manufacturing firms in Nigeria as at 31st December, 2020 as sourced from their annual reports for 10 years (2011 – 2020). This number amount to about 31% of the Nigerian quoted manufacturing firms and the researcher considered this reasonable for this study. The base year of 2011 was selected to capture the rising moments for companies in Nigeria after the global recession of 2010. The panel regression techniques embracing the panel unit root test, cross section dependence and co-integration tests were used to examine the effect of board diversity on financial performance of listed manufacturing firms in Nigeria.

3.1 Model Specification

The model was specified in line with the study conducted by Okeyide (2018) on diversity and performance: A case of board composition of firms on the Nigerian stock exchange. This study digresses from his study based on the removal of some variables such as board size, firm size and board committee and inclusion of some variables such as financial expertise diversity and educational background diversity. Thus, specified hereunder is the study model:

$$EPS_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 BEBD_{it} + \beta_3 BED_{it} + \beta_4 BFD_{it} + \mu_{it} \dots \dots \dots \text{equation 1}$$

Where:

EPS_{it} = Earnings per share taking values of firm i in year t

BGD_{it} = Board gender diversity taking values of firm i in year t

$BEBD_{it}$ = Board educational background diversity taking values of firm i in year t

BED_{it} = Board ethnicity diversity taking values of firm i in year t

BFD_{it} = Board financial expertise diversity taking values of firm i in year t

$\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients of Estimates

μ_{it} = Error term/Stochastic Variable/White Noise

B_0 = constant or intercept

The *a priori* expectation based on literatures reviewed and theories are as follows, $\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0$.

Estimation Techniques

Panel Ordinary Least Square Technique

The Panel OLS technique commonly addresses the short run analysis of the study. However, this short run analysis was carried out as combined with the Cochrane Orcutt iterative method which is known for correcting serial correlation as developed by Cochrane and Orcutt (1949). The aftermath of this is the restriction of the OLS results to the common and fixed effects results. Nonetheless, the Durbin Watson test statistics was used as the basis for testing for serial correlation in the study.

Panel Cross Section Dependence Test

Due to general perception that disturbances in panel data are usually cross sectionally dependent most times when the cross section is large (Baltagi, 2005), it is quite imperative to run the Panel cross section dependence test. The result of this test determines the subsequent tests to be used in the study either first generation or second generation tests. The presence of cross section dependence makes it imperative to utilize second generation Panel URT and co-integration tests (CIPS, CADF and Westerlund Co-Integration tests) while the absence of cross section dependence suggests otherwise.

Panel Unit Root Test

Often times, non-stationarity is a usual problem facing time series data and as such, the presence of time series data in the panel data necessitates the subjection of panel data to Panel Unit Root Tests if the study must proceed to the co-integration test. As a result, the absence of unit root in the panel data at first difference guarantees the subsequent test for co-integration between the variables.

Panel Co-Integration Test

The panel co-integration test determines the presence of long run equilibrium relationship in the model. This test can be carried out as far as all variables are found to be stationary at first difference. This can be conducted through the Pedroni or Kao Co-integration test when first generation tests are considered while the Westerlund Co-integration test can be used if second generation tests are considered most suitable. However, this study used the Kao co-integration test as it moves an inch further by considering the homogeneity of the slope coefficients of all the cross sectional units in the panel data.

4. DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Descriptive Statistics

Table 1 revealed that firm performance as proxied by earnings per share outpaced other variables as indicate by their mean values which implies that on the average, earnings per share ranks highest while board gender diversity ranks the lowest. Also, the

standard deviation which shows the extent of discrepancy away from the mean revealed that earnings per share had the highest deviation while board educational background diversity had the lowest deviation.

On the other hand, skewness revealed that all the variables were positively skewed implying that the values of distribution for all the variables were concentrated on the left tail side of the distribution graph because the right tail was longer implying that

their median values for the variable were higher than their mean values.

For Kurtosis which measures the flatness or peakedness of data distribution, it was discovered that data for all variables are normal and platykurtic as their values were found to be between -3 and +3. This is further corroborated by the probability values of the Jarque Bera which revealed that data for the variables except Board financial diversity are normally distributed.

Table-1: Descriptive Statistics

Statistics	EPS	BGD	BED	BEBD	BFD
Mean	0.268023	-1.844622	-1.310965	-0.703935	-1.110776
Median	0.512824	-1.609438	-1.203973	-0.804719	-1.203973
Maximum	4.250636	-0.916291	-0.356675	0.000000	-0.105361
Std. Dev	-5.991465	-2.302585	-2.302585	-1.203973	-2.302585
Skewness	2.183480	0.477068	0.629701	0.324826	0.473334
Kurtosis	-0.972395	0.343475	-0.413090	0.498141	-0.026673
Jarque Bera	24.87100	11.85933	10.75844	6.484198	0.768537
Prob. (J. Bera)	0.000004	0.002659	0.004611	0.039082	0.680948
Obs.	120	120	120	120	120
Cross Sections	18	18	18	18	18

Source: Researcher's computation (2021)

4.2 Pre-Estimation Tests

Preliminary Diagnostics

This section of the study presents the test for autocorrelation and cross sectional dependence. Meanwhile, autocorrelation has been corrected through the use of the Cochrane Orcutt iterative AR (1) method, nevertheless, the test for serial correlation was conducted taking into cognizance the Durbin Watson.

Evidence from table 2 showed that the DW statistics was valued at 1.99 which connotes the absence of serial correlation in the study model. However, the cross sectional dependence test revealed that cross sectional dependence is absent in the panel data model. This therefore implies that first generation tests such as the IPS, LCC URTs and Kao co-integration tests can be used in the study.

Table-2: Preliminary Diagnostics

Statistics	Values
Serial Correlation Test	
Durbin Watson	1.9856
Cross-Sectional Dependence Test	
Breusch-Pagan LM	87.8884 (0.2080)
Pesaran scaled LM	-0.2491 (0.8033)
Pesaran CD	0.7497 (0.4535)

Source: Researcher's Computation (2021)

Note: Stated in parentheses are the probability values of the respective test statistics.

Panel Unit Root Tests

Ordinarily, the Stationarity of data at first difference is a major condition that must be satisfied before proceeding to the panel co-integration test. As a result, this section of the study presents the Unit Root Tests which tests for the stationarity of data at first difference as presented in table 3.

From table 3, the first generation panel unit root tests employed in the study revealed that data for the model was stationary at first difference. As a result, this study could subsequently proceed to the co-integration test to determine the presence of long run equilibrium relationship in the model.

Table-3: Panel Summary Unit Root Tests

Method	Statistic	Prob.	Order of Integration
Levin, Lin & Chu** (LLC)	-119.627	0.0000	I(1)
Im, Pesaran and Shin (IPS)	-28.5583	0.0000	I(1)
ADF-Fisher	277.933	0.0000	I(1)
PP-Fisher	331.093	0.0000	I(1)
Hadri	11.1637	0.0000	I(1)

Source: Researcher's Computation (2021)

Short Run Estimates (OLS Results)

The Panel Ordinary Least Squares results as displayed in table 4 presents the short run estimates for the model. However, due to incorporation of the Cochrane Orcutt iterative AR(1) method for correcting

autocorrelation, the random effect will not be available as 12 iterations guaranteed convergence. Nevertheless, the findings as presented in table 4 were not compromised.

Table-4: Ordinary Least Squares Results (Capturing all relevant effects) Dependent Variable: EPS

Independent Variable	Common Effects	Fixed Effects
BGD	-0.3846 (0.6605)	-0.9074 (0.6261)
BED	-0.4021 (0.6575)	0.2459 (0.7269)
BEBD	-0.7591 (1.4371)	0.2577 (1.5219)
BFD	0.9151 (1.1434)	4.3966** (2.1025)
C	-4.1937 (4.9348)	4.1198 (5.2198)
AR(1)	0.7604 (0.0000)	0.0717 (0.0935)
No. of Observations	99	99
R-Squared	0.562075	0.797701
Adjusted R ²	0.533515	0.735663
F-Statistics	19.68029	12.85819
Prob. (F-Stat.)	0.000000	0.000000
Durbin Watson	1.946023	1.985593

Source: Researcher's Computation (2021)

Note: reported in the parentheses are the standard error while *, **, and *** represent respective significance level at 10%, 5%, and 1%.

Panel Co-Integration Test

This test was employed in this study to determine the presence of long run equilibrium relationship between board diversity and financial performance in Nigeria. The Kao co-integration test

was adopted as it considers the homogeneity of slope coefficients of all cross sectional units in the panel data.

The test in table 5 according to the Kao Co-integration test revealed that there exists a long run relationship between board diversity and financial performance.

Table-5: Kao Co-Integration Test

Model	Kao ADF T-Stat.	Prob.
EPS = f(BGD, BEBD, BED, BFD)	-4.0914	0.000

Note: Stated in parentheses is the probability value of the test statistic.

Source: Researcher's Computation (2021)

4.3 DISCUSSION OF FINDINGS

The objective of this study is to examine the effect of board diversity on financial performance of manufacturing firms in Nigeria. The short run oriented OLS results revealed that board diversity has an insignificant effect on financial performance except for

board financial expertise diversity that wielded a positive effect on firm performance. This is in conformity with the findings of Aladejebi (2021), Ilaboya and Ashafoke (2017) as well as Garcia-Meca *et al.* (2015) and in disparity with the discovery of

Igbekoyi *et al.* (2021), Luo, Lim, Qu and Zhang (2021) as well as Adusei (2019).

Contrary to theoretical expectations, board gender diversity exerted an insignificant effect on performance which implies that an increase in board gender diversity will exert no substantial effect on the earnings per share of the firm. This is probable as contribution to the board of the firm is more about the skill, expertise and experience of the individual in question much more beyond gender. In other words, the gender of an individual whether female or male does not really matter as much as what such individual can offer at the table which is then premised on his/her skills, experience and expertise. This is in conformity with the empirical discovery of Okeyide (2018).

Similarly, in disparity with theoretical expectations, board educational background diversity also had an insignificant effect on performance. This implies that the educational background of the board of directors does not matter substantially neither does it significantly affect performance in terms of earnings per share. This is equally plausible as director offers more at the table more than mere educational background or qualifications. There are some directors who are highly skilled not because they had strong educational background but because they had vast experience and also gathered more skills along the line. Therefore, educational qualifications alone do not necessarily imply that a board of directors will out-perform its peers and improve performance. This is in line with the findings of Bhagat, Bolton & Subramanian (2010).

Also, ethnic diversity was discovered to exert an insignificant effect on performance. This implies that board diversity in terms of ethnic backgrounds has no effect on firm performance. This is equally feasible as the board has stipulated corporate governance guidelines as well as consultancy and trainings to guide their activities and change any form of cultural ideology or inclination that may seek to tamper with the performance of the firm. Ultimately, such ethnic or cultural diversity does not have any bearing on performance. This is in disparity with the findings of Luo *et al.* (2021).

Meanwhile, board financial expertise diversity had a positive effect on financial performance of the firm. In other words, the higher the number of financially skilled members on the board, the higher the earnings per share of the firm. This is plausible as financial expertise involves the right professional skills in terms of accounting, auditing, stock market valuation and project management. Thus, a highly skilled board in this regard will be able to make wise financial decisions that will directly affect the financial standings of the business and ultimately the earnings per share. This is in line with the findings of Egwakhe, Akpan, & Ajayi (2019).

5. CONCLUSION AND RECOMMENDATIONS

This study attempts to provide an in-depth understanding on the effect of board diversity on the financial performance of listed manufacturing firms in Nigeria. Premised on the fact that poor corporate governance can lead to corporate failure, there has been an increased quest to establish the most appropriate board. As a result, board diversity has emerged at the fore of corporate governance issues to determine the optimum mix required on a board. Based on this, this study provides evidence on the effect of board diversity on financial performance of listed manufacturing firms in Nigeria in terms of gender, ethnicity, financial expertise and educational background. The study premised on its objective, found that board diversity exerts an insignificant effect on performance except for financial expertise diversity which has a positive effect on performance. Also, the study discovered the presence of a long run relationship between board diversity and financial performance in Nigeria especially in the manufacturing sector.

Based on these findings, the study therefore concludes that diversity on the board in terms of gender; ethnicity and educational background will not really improve or reduce performance of the firms while diversity in terms of financial expertise will really affect the organizations. One major reason for this is because an individual on the board has more to offer and it is not a question of gender neither is it a question of tribe or ethnic affiliations as there are guidelines, trainings and consultancy services that will knock off or even prevent ethnic affiliations that may affect corporate culture. However, the skill of the directors in financial issues relating to accounting, stock valuation and performance, the stock market, auditing and project valuation will affect performance as decisions to either retain profit or pay dividends, approve expenditure, borrow funds among others are financial decisions that directly affect the funds as well as the profit generated in the firm which ultimately affects the financial performance of the firm.

Therefore, this study has advanced the existing contributions in literature by providing evidence on the subject matter from the manufacturing sector being a major sector in the economy. Also, it has equally provided evidence on the presence of long run relationship between board diversity and financial performance. In précis, it empirically presents evidence in support of financial expertise diversity as the most essential component of board diversity across organizations.

As regards policy recommendations, it is recommended that greater measures need to be taken by manufacturing firms in Nigeria to have a higher

percentage of board members with financial expertise which is argued and found in this study to have a positive implication on firm performance. Hence, financial mishaps due to the poor skills of directors in financial issues will affect the manufacturing sector and the national economy at large. Also, due to the long run relationship between board diversity and firm performance, directors with certified financial expertise should be allowed to stay longer on the boards to guarantee improved performance in the long run. Meanwhile, it is considered that future studies can examine other sectors of the economy while comparative analysis can be carried out across sectors and countries for robust findings and strengthened recommendations.

REFERENCES

- Adusei, M. (2019). Board gender diversity and the technical efficiency of microfinance institutions: Does size matter? *International Review of Economics and Finance*, 64(1), 393-411.
- Adusei, M., & Obeng, E. Y. T. (2018). Board gender diversity and the capital structure of microfinance institutions: A global analysis. *The Quarterly Review of Economics and Finance*, 71(1), 258-269.
- Agarwal, S., Qian, W.L., Reeb, D.M., & Sing, T.F., (2016). Playing the boys game: golf buddies and board diversity. *Am. Econ. Rev.* 106, 272-276.
- Aladejebi, O. (2021). Board gender diversity and performance of listed deposit banks in Nigeria. *European Business and Management*, 7(1), 14-23.
- Ali, F. (2014). *Corporate governance and firm performance: The case of UK*. (Ph.D. Thesis). University of Portsmouth, UK.
- Barro, R. J., & Lee, J. W. (2010). A new data set of educational attainment in the world, 1950-2010. *Working paper*, National Bureau of Economic Research, Cambridge, MA, April.
- Bernile, G., Bhagwat, V., & Yonker, S. (2018). Board diversity, firm risk, and corporate policies. *J. Financ. Econ.* 127(3), 588-612.
- Bhagat, S., Bolton, B., & Subramanian, A. (2010). CEO education, CEO turnover, and firm performance”, *Working Paper*, University of Colorado at Boulder, 3 August.
- Bruna, M. G., Dang, R., Scotto, M. J., & Ammari, A. (2019). Does board gender diversity affect firm risk-taking? Evidence from the French stock market. *Journal of Management & Governance*, 23(4), 915-938.
- Carter, D., D'Souza, F., Simkins, B., & Simpson, G. (2010). The gender and ethnic diversity of US boards and board committees and firm financial performance. *Corporate Governance: An International Review*, 18(5), 396-414.
- Croson, R., & Gneezy, U., (2009). Gender differences in preferences. *J. Econ. Lit.* 47, 448-474.
- Cumming, D., Leung, T.Y., & Rui, O., (2015). Gender diversity and securities fraud. *Acad. Manage. J.* 58, 1572-1593.
- Egwakhe, A. J., Akpa, V. O., & Ajayi, A. A. (2019). Board diversity and profitability of insurance firms in Nigeria: Evidence from listed insurance firms. *International Journal of Advanced Studies in Business Strategies and Management* 7(1), 41-59.
- Erkens, D.H., Hung, M., & Matos, P., (2012). Corporate Governance in the 2007-2008 Financial Crisis: Evidence from Financial Institutions Worldwide, *Journal of Corporate Finance*.
- Ezat, A., & El-Masry, A., (2008). The impact of corporate governance on the timeliness of corporate Internet reporting by Egyptian listed companies. *Managerial Finance* 34 (12), 848-867.
- Fauzi, F. & Locke, S. (2012). Board Structure, Ownership Structure and Firm Performance: A Study of New Zealand Listed-Firm. *Asian Academy of Management*, 8(2), 43-67.
- Gambo, J. S., Terzungwe, N., Joshua, O., & Agbi, S. E. (2019). Board Independence, Expertise, Foreign Board Member and Financial Performance of Listed Insurance Firms in Nigeria. *International Journal of Management, Accounting and Economics*, 6(11), 780-794.
- Garcia-Meca, E., Garcia-Sanchez, I., & Martinez-Ferrero, J. (2015). Board diversity and its effects on bank performance: An international analysis. *Journal of Banking and Finance*, 53(1), 202-214.
- Hambrick D. C. & Manson P. A., (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193-206.
- Harjoto, M.A., Laksmana, I., & Yang, Y.-W., (2018). Board diversity and corporate investment oversight. *J. Bus. Res.* 90, 40-47.
- Herrmann, P. & Datta, D. K. (2005). Relationships between top management team characteristics and international diversification: an empirical investigation. *British Journal of Management*, 16 (1), 69-78
- Hutchinson, M., Mack, J. & Plastow, K. (2014). Who selects the 'right' directors? An examination of the association between board selection, gender diversity and outcomes. *Accounting & Finance*. <http://dx.doi.org/10.1111/acfi.12082>.
- Igbekoyi, O. E., Adegbayibi, A. T., & Adesina, A. S. (2021). Female directors and corporate social performance of listed deposit money banks in Nigeria. *Journal of African Research in Business and Technology*, 1(1), 1-13.
- Ilaboya, J., & Ashafoke, T. (2017). Board diversity and firm performance in Nigeria. *International Journal of Management, Accounting and Economics*, 4(10), 1002-1019.

- Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance*, 48, 831-880.
- Ji, J., Peng, H., Sun, H., & Xu, H. (2021). Board tenure diversity, culture and firm risk: Cross-country evidence. *Journal of International Financial Markets, Institutions and Money*, 70(1), 1-24.
- Jizi, M.I., Salama, A., Dixon, R., & Stratling, R. (2014). Corporate governance and corporate social responsibility disclosure: Evidence from the US banking sector. *J. Bus. Ethics* 125, 601–615.
- Khaoula, F., & Moez, D. (2019). The moderating effect of the board of directors on firm value and tax planning: Evidence from European listed firms. *Borsa Instabul Review*, 19(4), 331-343.
- Low, D. C., Roberts, H., & Whiting, R. (2015). Board gender diversity and firm performance: Empirical evidence from Hong Kong, South Korea, Malaysia and Singapore. *Pacific-Basin Finance Journal*, 35(1), 381-401.
- Luo, K., Lim, E., Qu, W., & Zhang, X. (2021). Board cultural diversity, government intervention and corporate innovation effectiveness: Evidence from China. *Journal of Contemporary Accounting and Economics*, 17(1), 1-22.
- Mahadeo, J. D., Soobaroyen, T., & Hanuman, V. O. (2012). Board composition and financial performance: Uncovering the effects of diversity in an emerging economy. *Journal of Business Ethics*, 105(3), 375-388.
- Minton, B., Taillard, J.P.A., & Williamson, R. (2010). *Do independence and financial expertise of the board matter for risk taking and performance?* SSRN. doi: 10.2139/ssrn.1661855
- Mohsni, S. Otchere, I., & Shahriar, S. (2021). Board Gender Diversity, Firm Performance and Risk Taking in Developing Countries: The Moderating Effect of Culture, *Journal of International Financial Markets, Institutions & Money*, 73(C). doi: 10.1016/j.intfin.2021.101360.
- Masulis, R., Wang, C., & Xie, F., (2012). Globalizing the boardroom: the effects of foreign directors on corporate governance and firm performance. *Journal of Accounting and Economics* 53, 527–554.
- Myskoya, R., & Hajek, P. (2017). Comprehensive Assessment of Firm Financial Performance Using Financial Ratios and Linguistic Analysis of Annual Reports. *Journal of International Studies*, 10(4), 96-108. doi: 10.14254/2071-8330.2017/10-4/7
- Naz, F., Ijaz, F., & Najvi, F. (2016). Financial Performance of Firms: Evidence from Paskistan Cement Industry. *Journal of Teaching and Education*, 5(1), 81-94.
- NCCG (2018). *Nigerian code of corporate governance*.
- Niederle, M., & Vesterlund, L., (2007). Do women shy away from competition? Do men compete too much? *Q. J. Econ.* 122, 1067-1101.
- Nwonyuku, K. N. (2016). Corporate governance and profitability of listed food and beverages firms in Nigeria. *Industrial Engineering Letters*, 6(3), 47-105.
- Ogboi, C., Aderimiki, V., & Enilolobo, O. (2018). Corporate board diversity and performance of deposit money banks in Nigeria. *International Journal of Humanities and Social Science*, 8(1), 112-120.
- Okeyide, O. D. (2018). *Diversity and performance: A case of board composition of firms on the Nigerian stock exchange*. (Ph.D. Thesis). Norwich Business School, UK.
- Ozgur O. (2020). Board diversity and firm performance in the U.S. tourism sector: The effect of institutional ownership. *International Journal of Hospitality Management*, 91, 102693.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper & Row.
- Sila, V., Gonzalez, A., & Hagendorff, J. (2016). Women on board: Does boardroom gender diversity affect firm risk? *Journal of Corporate Finance*, 36(1), 26-53.
- Song, H., Yoon, Y., & Kang, K. (2020). The relationship between board diversity and firm performance in the lodging industry: The moderating role of internationalization. *International Journal of Hospitality Management*, 86(1), 1-10.
- Terjesen, S., Sealy, R., & Singh, V., (2009). Women directors on corporate boards: a review and research agenda. *Corporate Governance: An International Review* 17(3), 320-337.
- Ujunwa, A., Nwakoby, I., Ugbam, C. O. (2012). Corporate board diversity and firm performance: Evidence from Nigeria. *Corporate Ownership and Control*, 9(2), 216-226.
- Wahid, A. S. (2019). The effects and the mechanisms of board gender diversity: Evidence from financial manipulation. *Journal of Business Ethics*, 159(3), 705-725.
- Williams, J. C., & Dempsey, R. (2014). *What Works for Women at Work?* New York University press.