

Board Gender Heterogeneity, Corporate Diversification and Cash Flow Performance of Deposit Money Banks in Nigeria: An Independent and Joint Effect Analysis

**Chinedu Jonathan Ndubuisi^{1*}, Akwuobi Bridget Udekwesili¹
and Onyeogubalu Ogochukwu Nkiru¹**

¹Department of Accountancy, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria.

Authors' contributions

This work was carried out in collaboration among all authors. Author CJN designed the study, wrote the protocol, wrote the manuscript and managed the literature searches. Author ABU performed the statistical analysis. Author OON managed the analyses of the study. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJEBA/2021/v21i1530477

Editor(s):

(1) Dr. María-Dolores Guillamón, University of Murcia, Spain.

Reviewers:

(1) Andreas, Universitas Riau, Indonesia.

(2) Wilson Ani, Michael Okpara University, Nigeria.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/74552>

Original Research Article

**Received 28 July 2021
Accepted 04 October 2021
Published 12 October 2021**

ABSTRACT

The objective of this study was to examine the effect of board gender heterogeneity and corporate diversification on cash flow performance of Deposit Money Banks (DMBs) in Nigeria. The study specifically examined the effect of gender heterogeneity and business subsidiary on operating, investing and financing cash flow performances. The study adopted the ex-post facto research design; as the goal is not to manipulate any variable but rather to establish effect. The population comprised quoted DMBs and the sample restricted to a purposive sample of six (6) banks whose annual reports were accessible for the period of 2005-2020 which is the time scope of this study. The data were analysed using the multiple regression technique. The results showed that gender heterogeneity and corporate diversification does not have a statistically significant effect on cash flow performance jointly and individually. Based on these findings, the study recommended that Gender heterogeneity should be allowed on the boards of DMBs not necessarily to promote cash flow performance, but for equity, fairness and relative peace as supported by previous literature.

*Corresponding author: E-mail: cj.ndubuisi@unizik.edu.ng;

Keywords: Gender heterogeneity; corporate diversification and cash flow performance.

1. INTRODUCTION

Gender heterogeneity looks at the mix of the gender (male & female) on the Board and how it affects the performance of the organisation. Usually the Board of Directors of most firms, DMBs inclusive are mostly comprised of the male gender with very few female and in some case zero female inclusion. Most scholars however have seen this as a deficiency and have taken turns to examine the effect that women on the Board or female executives may have on the performance of firms. Gender diversity involves the process of taking advantage of diverse features and skills in a man and a woman that could bring benefits to the firm [1]. In an effort to ensure that more women occupy top managerial and board positions, different countries have introduced diverse forms of actions, including legislations and quotas. For example, governments in several European countries have mandated European firms to formulate policies directed towards increasing their numbers of female directors [2]. The most widely acknowledged example is the Norway gender quota system, where a 40% gender quota was introduced for women, as early as 2003, for both public and state owned firms [3]. Similar legislation was later introduced in Spain, Netherland, Iceland and France [4]. In Nigeria, there are no such laws, however the vision 2020 national technical working committee on corporate governance emphasized greater women participation in corporate governance matters, without mentioning specifics. It is therefore still not surprising that the percentage of women who have reached corporate executive positions in Nigeria, compared to their male counterparts, is still very low [5]. A possible reason for this disparity, as emphasized in the separate studies carried out by Obi [6] and Omotola [7], is that women are regarded as the weaker sex and as a result have been alienated in the political, economic, and social arena. To get to top positions in various firms, women must overcome a number of hurdles ranging from cultural difficulties to coping with balancing family and career.

In recent real world situation, the number of women chasing career in managerial positions are increasing. However, the percentage of women representation on board are relatively low (Omar & Davidson, 1989) in [8]. According to Equal Opportunity for Women in Workspace

Agency, in 2009 the percentage of women on board in developed country such as Canada, United States, United Kingdom, and New Zealand are respectively 14%, 15.2%, 9%, and 8.7%. These data are showing an increase in general compared to the preceding year's data for the same countries, 13%, 14.8%, 8.5%, and 7.1%. Even if the data shows increase in women participation on board in general, the survey conducted by Stuart [9] showed that almost 75% of the respondent deny to support the boardroom diversity quota. This concluded that the diversity on board should not be mandatory but voluntarily.

Studies however abound with argument for and against women exhibiting good characteristics that instils good corporate governance. Campbell and Mingues-Vera [10], and Farrell and Hersch [11] found that female Directors may have positive impact on firm performance and market value. The study of Nielsen and Huse, [12] asserted that female Directors reduce the level of conflict in corporate boards, and that they use board improvement activities, such as work instructions, evaluations, and development programs to improve board effectiveness. Along the same line, Azmi and Barrett, [13] argued that women are meticulous, risk averse, skilled in accounting and finance, and good decision-makers. Choi, Park and Yoo [14] suggested that women are considered tough, which give them a great surrounding respect. Tarigan et al. [8], stated that women are focused on harmony as they considered to have a feeling of cognitive style. Moreover, it is assumed that as the part of their behaviour, women can expedite the circulation of information [15].

In contrary, there are several arguments that against the diversity on board, even harmful to companies. It may bring about longer decision-making process [16], risk response difference [17] increases the probability of conflict (Joshi et al., 2006). High turnover and absenteeism of women also contribute to increase in firm cost [18]. Moreover, a diverse group will increase the likelihood of conflict and less cooperative [15], as well as they are less likely to have more frequent communication and also less likely to share common opinion [19]. Therefore, it can be concluded that the previous researches have a mixed finding regarding the positive or negative effect to the company.

1.1 Objectives of the Study

The basic objective of this study is to examine the independent and joint effect of board gender heterogeneity and corporate diversification on cash flow performance of DMBs in Nigeria. Specifically, the study sought to ascertain:

1. The independent and joint effect of board gender heterogeneity and corporate diversification on the operating cash flow performance of DMBs in Nigeria.
2. The independent and joint effect of board gender heterogeneity and corporate diversification on the investing cash flow performance of DMBs in Nigeria.
3. The independent and joint effect of board gender heterogeneity and corporate diversification on the financing cash flow performance of DMBs in Nigeria.

1.2 Hypotheses of the Study

The following hypotheses was tested in the course of the study:

1. Ho: There is no significant independent and joint effect of board gender heterogeneity and corporate diversification on the operating cash flow performance of DMBs in Nigeria.
2. Ho: There is no significant independent and joint effect of board gender heterogeneity and corporate diversification on the investing cash flow performance of DMBs in Nigeria.
3. Ho: There is no significant independent and joint effect of board gender heterogeneity and corporate diversification on the financing cash flow performance of DMBs in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Framework

The conceptual framework above diagrammatical explained how the variables in the study relates with each other. The two independent variables were structured show both independent and joint effect on the dependent variables of the study. The control variables were put in place to act as a check on the dependent variable.

Scholars in the past have done similar work but with major restriction to independent effect only with no joint effect examined. Onatuyeh and

Prose [1] examined the correlation between Board gender diversity and financial reporting quality with the aim of ascertaining whether the presence of women on corporate Boards positively influences the quality of financial reporting by firms. While financial reporting quality was measured using the IASB qualitative characteristics model, the study used the ratio of women Board members to total board members, Blua diversity and Shannon diversity indexes as surrogates for gender diversity. Based on data gathered from the audited annual reports of fourteen selected listed Nigerian Deposit Money Banks for the period 2013 to 2017, results of the system Generalized Method Moments (GMM) regression technique revealed a positive relationship between gender diversity on Boards and quality of financial reporting by banks in Nigeria. However, the result of the study did not provide evidence of significant connection between Board independence and financial reporting quality. The study concluded with a number of recommendations, including suggesting the need for firms to include more female members in the Board as they tend to have a significant impact on the quality of decision making as well as bringing a new perspective to deliberation processes.

Imade [20] examined the nexus between board gender diversity, non-executive director's composition and corporate performance (return on asset) of listed firms on the Nigerian Stock Exchange. Ex-post facto research design was employed and agency theory formed the basis of theoretical framework of the study. Data of board gender diversity, non-executive director's composition and return on asset were obtained for seventy-two listed firms during the period 2006 to 2016. The data obtained were analyzed by means of Ordinary Least Square (OLS) estimation technique. The analyses revealed that board gender diversity has substantial effect on corporate performance (return on asset) of listed firms on the Nigerian Stock Exchange. Contrarily, non-executive director's composition has no significant effect. On the basis of the findings, it was recommended that listed firms should give more value to diversity in their board composition. Also, firms should pay less attention to the composition of their board, but rather focus on quality and integrity of members of the board. More importantly, the regulatory bodies like Security and Exchange Commission and Central Bank of Nigeria, should set standards for the inclusion of reasonable number of women on the board of listed firms in Nigeria.

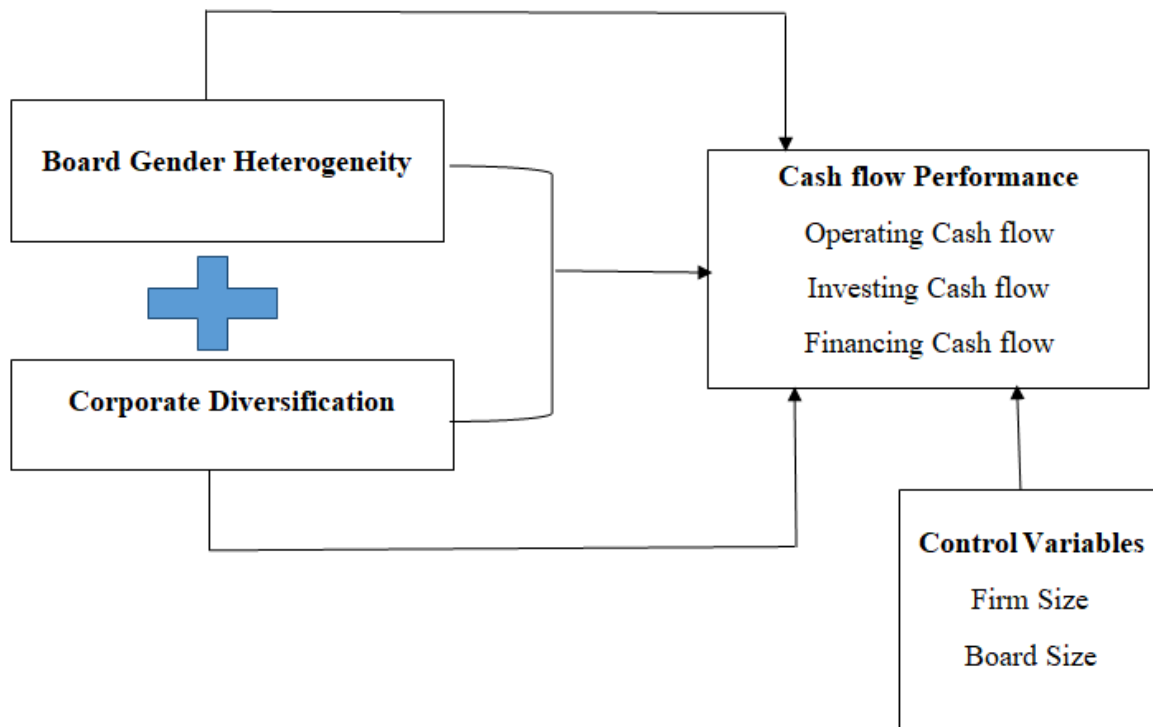


Fig. 1. Diagrammatic representation of the conceptual framework

Adetula et al. [21] investigated the economic impact of gender diversity on Board composition of companies listed on the Nigerian Stock Exchange (NSE). Based on the grouping of fifty most capitalized companies on the NSE into companies with no female on board and those with at least one female on the board, the firm performance was analyzed with Mann Whitney U-test over a three-year period. They also examined whether there was any significant difference between the performance of boards with only one female and those with more than one female. The results showed no significant difference in the performance of both groups. This was due to moderately heterogeneous board composition as a result of few females in top level decision-making. The study recommended a policy mandating listed companies to evaluate their employment and selection methods regarding nomination and promotion into boards and management teams.

Guldiken et al. [22], examined how strategic leaders influence more meaningful gender diversity on boards of directors. Using longitudinal data on U.S. firms, and analysing them with generalized estimating equations, the study found that more female top managers and having the sole female director serve

on the nominating committee increase the likelihood of additional female director appointments. Boards and nominating committees with younger members amplify these effects, respectively.

Endraswati [23] examined the influence of the proportion of women as directors, tenure of women as directors, education level of women as directors, and the education background of women as directors on the performance of sharia banking in Indonesia. The sample used in the research was 11 sharia banks in the period of 2011-2015. The research used multiple regression analysis technique. The results showed that the proportion of women as directors has a negative effect on the performance of sharia banking in Indonesia. Other variables such as tenure of women, women's education background and firm size have a positive effect on sharia banking performance. Only the women's education level as a director does not affect the performance of sharia banks in Indonesia.

Trinh et al. [24], examined the effects of female leadership, at both board-level and individual-level, on the corporate value of UK FTSE100 stocks. Using the Generalized Method Moments (GMM) regression approach with a dataset of 96

publicly firms from 2006 to 2016; the analysis revealed strong evidence that the existence of female directors on board is positively associated with firm value. The relationship between the female chairman and firm value is significantly positive whilst there exists an adverse link between female CEO and firm value. The findings implied a significant effect of quota laws for gender diversity of boards of directors and female directors' positions on UK corporate market value.

Mandala et al. [25] examined the effect of gender diversity of boards and board composition, on performance. Secondary data were collected for a ten-year period from 2006 to 2015 from 98 sampled financial institutions. Multiple regression analysis and generalized estimating equations were used in analysis of the collected data. Parametric and nonparametric methodologies were used. The results showed that, gender diversity of boards and board composition had no independent significant influence on performance of financial institutions.

Osei et al. [26] investigated the impact of women on board to relationship between Corporate Social Responsibility Disclosure (CSR) levels of listed companies in Ghana. The hypothesis was tested using Ordinary Least Square regression model on a seven years data. The results provided evidence that Women on Board have significant positive association with CSR. More importantly, the association is much stronger when a woman is the chairperson of the board of directors. Also, board size and board independence play an important role in determining the level of CSR. This implies that companies with a higher proportion of gender diversity and independence are more likely to have a higher level of CSR disclosure.

Ombaba and Omuya [27] examined how women in institutional Board influences Board effectiveness in Kisii county of Kenya. The study employed documentary analysis design and the data were collected from the journals, periodicals and government reports, and were measured by ratio of women directors in the institutional boards. Data were analyzed using descriptive statistics and presented in tables and graphs. The results suggested that gender-diverse boards allocate more effort to monitoring, women directors is positively associated with board strategic control. In addition, there were positive

effects of women directors on board effectiveness as mediated through increased board development activities and decreased level of conflict.

Alm and Winberg [28] researched on the effect of gender diversity on firm performance. The study was based on panel data for 255 companies over a period of six years from Germany using pair-wise correlation matrix to test for multicollinearity. They found that there is no statistically significant relationship between ROA and Tobin's Q and the female gender. Furthermore, the variable shows that there is no clear link between gender diversity-performance relationships.

3. METHODOLOGY

This research work adopted the *ex-post facto* research design because the event under investigation had already taken place. The adoption of this *ex-post facto* research design hinges on two (2) reasons: (1) that the study relied on historic accounting data; and, (2) that the data were obtained from the financial statements and accounts of the selected industrial firms. The population of the study was made up of the thirteen (13) DMBs currently listed on the Nigeria Stock Exchange. They include; Access Bank Nigeria PLC, ECO Bank Nigeria PLC, Fidelity Bank Nigeria PLC, First Bank Nigeria PLC, First City Monument Bank Nigeria PLC, Guaranty Trust Bank Nigeria PLC, Polaris Bank Nigeria PLC, Stanbic IBTC Bank, Sterling Bank Nigeria PLC, Union Bank Nigeria PLC, United Bank for Africa PLC, Wema Bank PLC, and Zenith Bank Nigeria PLC. Because of non-availability of most banks annual reports in their official website, only six (6) banks that had their annual reports from year 2005-2020 were sampled.

The data for the study is classified as panel data; which means data are a combination of both cross-sectional (multiple firms) and time-series data (multiple years per firm). The study employed two distinct techniques to analyse the data. *First*, descriptive statistics were computed such as the mean, median, standard deviation, minimum, and maximum values. This was used to describe the nature of data and also aid data visualization. *Second*, multiple regression was used to validate the hypotheses. The study employed panel data regression techniques in estimating the regression coefficients.

3.1 Chart 1: Definition of Variables/Proxies

Chart 1.

VARIABLES	DEFINITION
Dependent Variables	
Operating Cash flow to Total Assets	Operation Cash flow Value Total Asset
Investing Cash flow to Total Assets	Investing Cash flow Value Total Asset
Financing Cash flow to Total Assets	Financing Cash flow Value Total Asset
Independent Variables	
Gender Heterogeneity	Blau Index of Heterogeneity (Male vs Female)
Corporate Diversification	Number of Business Subsidiaries
Control Variables	
Firm Size	The natural log of total assets
Board Size	This is the total number of directors sitting on the board as financial year end

3.2 Model Specification

The model for this study will be the multiple regression model stated as:

$$OCF_{i,t} = \beta_0 + \beta_1 GH_{i,t} + \beta_2 BS_{i,t} + \beta_3 GH + BS_{i,t} + \beta_4 FS_{i,t} + \beta_5 BOS + \epsilon_{i,t} \dots\dots\dots(1)$$

$$ICF_{i,t} = \beta_0 + \beta_1 GH_{i,t} + \beta_2 BS_{i,t} + \beta_3 GH + BS_{i,t} + \beta_4 FS_{i,t} + \beta_5 BOS + \epsilon_{i,t} \dots\dots\dots(2)$$

$$FCF_{i,t} = \beta_0 + \beta_1 GH_{i,t} + \beta_2 BS_{i,t} + \beta_3 GH + BS_{i,t} + \beta_4 FS_{i,t} + \beta_5 BOS + \epsilon_{i,t} \dots\dots\dots(3)$$

Where:

- OCF= Operating Cash flow
- ICF = Investing Cash flow
- FCF = Financing Cash flow
- GH = Gender heterogeneity
- BS = Business Subsidiary
- FS = Firm Size
- BOS = Board Size
- β_0 = The constant
- $\beta_1 - \beta_5$ = The regression coefficients of predictor variables
- $\epsilon_{i,t}$ = error term

4. DATA PRESENTATION, RESULT AND DISCUSSION

4.1 Descriptive Statistics

The descriptive statistics of the main independent variables utilised in the study are presented below; the Table 1 shows the number of observations, mean, standard deviation, minimum and maximum values of the variables. The description helps in showing the nature of the data.

The Obs. column (i.e., observations) shows the number of observations included in the analysis of the independent variables of the study as six (6). The Mean is a measure of central tendency

which calculates the average of a set of observations; while, the Standard Deviation (SD) is a measure of the average distance between the values of the data in the set and the mean. A low SD indicates that the data points tend to be very close to the mean; a high SD indicates that the data points are spread out over a large range of values (Table 2).

The mean value for GH (Gender Heterogeneity) is .2570833; the maximum value is .34. The SD indicates that the values are spread out over a small range of values. The BS (Business Subsidiaries) indicated that the sampled banks had a mean of 6 subsidiaries during the study period. The SD indicates that the values are spread out over a large range of values.

Table 1. Variables averages

Sampled Banks	Independent variables		Dependent variables			Control variables	
	GH	BS	OCF	ICF	FCF	BoS	FS
Access Bank	0.275	6	0.015625	-0.00813	0.02	14	2252.306
Fidelity Bank	0.276875	0	0.07	-0.02188	0.035635	14	1019.406
Guarantee Trust Bank (GTB)	0.335	7	0.0375	-0.02063	0.00375	13	1792.375
United Bank of Africa (UBA)	0.34	18	0.055625	-0.045	0.0125	18	2208.419
Wema Bank	0.19125	1	0.004375	-0.035	0.04625	10	336.0125
Zenith Bank	0.124375	8	0.041875	-0.01875	0.0225	13	3009.8

Source: Published Financial Statements various issues (calculations done using Excel)

Table 2. Summary statistics of independent variables

Variable	Obs	Mean	Std. Dev.	Min	Max
GH	6	2570833	.0843853	.124375	.34
BS	6	6.666667	6.439462	0	18

Source: STATA ver. 15

Where: GH- Gender Heterogeneity, BS – Business Subsidiaries

Table 3. Summary statistics of control variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Bos	6	13.66667	2.581989	10	18
FS	6	1769.72	957.3031	336.0125	3009.8

Source: STATA ver. 15

Where: Bos- Board Size, FS- Firm Size

The mean value for BoS (Board Size) is approximately 14; indicating that the sampled banks had on the average 14 as their board size with an SD that showed that values are spread out over a large range of values. The mean value for FS (Firm Size) is 1.769 billion with a maximum value of 3.009billion. The SD of 957.3 million indicates that the values are spread out over a large range of values.

4.2 Testing of Hypotheses

4.2.1 Hypothesis 1

1. Ho: There is no significant independent and joint effect of board gender heterogeneity and business subsidiary on the operating cash flow performance of DMBs in Nigeria.

The Table 4 showed the dependent variable (operating cash flow) with the two independent variables (gender heterogeneity and business subsidiaries) and control variables (board size and firm size). In the hypothesis validation the group statistics: ANOVA represented as F-

statistics, the coefficient of determination R^2 were used, while the p-value was used to predict the individual and joint effect of the independent variables on the dependent variable. For hypothesis 1, the R-square is 0.6134 which is a very high prediction above the 0.50 threshold. Also the F degrees of freedom has a value of 0.397 with p-value of 0.8124 which is > than 0.05 margin of error. This means that the coefficient of multiple determination R is not significantly different from zero, that is, gender heterogeneity and corporate diversification does not jointly affect the operating cash flow performance of DMBs in Nigeria. Similarly, gender heterogeneity (P=0.861) and business subsidiary (P=0.628) independently does not have a significant effect on operating cash flow performance.

4.2.2 Hypothesis 2

1. Ho: There is no significant independent and joint effect of board gender heterogeneity and business subsidiary on the investing cash flow performance of DMBs in Nigeria.

Table 4. Test of hypotheses One

Equation	Obs	Parms	RMSE	"R-sq"	F	P
OCF	6	5	.0339384	0.6134	.3967374	0.8124
OCF	Coef.	Std. Err.	t	P> t 	[95% Conf. Interval]	
GH	-.0607613	.2731589	-0.22	0.861	-3.531574	3.410051
BS	-.0028827	.0043589	-0.66	0.628	-.0582679	.0525025
BoS	.0129911	.0121934	1.07	0.480	-.1419408	.1679229
FS	-2.75e-07	.0000244	-0.01	0.993	-.0003097	.0003091
_cons	-.1047199	.1170193	-0.89	0.535	-1.591591	1.382151

Source: STATA ver. 15

Table 5. Test of hypotheses two

Equation	Obs	Parms	RMSE	"R-sq"	F	P
ICF	6	5	.0068911	0.9443	4.238935	0.3474
ICF	Coef.	Std. Err.	t	P> t 	[95% Conf. Interval]	
GH	.0860822	.0554642	1.55	0.364	-.6186571	.7908215
BS	-.0025588	-.0025588	-2.89	0.212	-.0582679	.008687
BoS	-.0013987	.0024758	-0.56	0.673	-.1419408	.0300598
FS	.0000177	4.94e-06	3.57	0.174	-.0003097	.0000805
_cons	-.0421162	.0237605	-1.77	0.327	-1.591591	.259789

Source: STATA ver. 15

The above showed the dependent variable (investing cash flow) with the two independent variables (gender heterogeneity and business subsidiaries) and control variables (board size and firm size). In the hypothesis validation the group statistics: ANOVA represented as F-statistics, the coefficient of determination R² were used, while the p-value was used to predict the individual and joint effect of the independent variables on the dependent variable. For hypothesis 2, the R-square is 0.9443 which is a very high prediction far above the 0.50 threshold. Also the F degrees of freedom has a value of 4.239 with p-value of 0.3474 which is > than 0.05 margin of error. This means that the coefficient of multiple determination R is not significantly different from zero. This means that the coefficient of multiple determination R is not significantly different from zero, that is, gender heterogeneity and corporate diversification does not jointly affect the investing cash flow

performance of DMBs in Nigeria. Similarly, gender heterogeneity (P=0.364) and business subsidiary (P=0.212) independently does not have a significant effect on investing cash flow performance.

4.2.3 Hypothesis 3

3. **Ho:** There is no significant independent and joint effect of gender heterogeneity and business subsidiary on the financing cash flow performance of DMBs in Nigeria.

The Table 6 showed the dependent variable (financing cash flow) with the two independent variables (gender heterogeneity and business subsidiaries) and control variables (board size and firm size). In the hypothesis validation the group statistics: ANOVA represented as F-statistics, the coefficient of determination R² were used, while the p-value was used to predict the

Table 6. Test of hypotheses three

Equation	Obs	Parms	RMSE	"R-sq"	F	P
FCF	6	5	0063551	0.9660	7.110734	0.2733
H	Coef.	Std. Err.	t	P> t 	[95% Conf. Interval]	
GH	-.1745798	.0511499	-3.41	0.181	-.8245006	.475341
BS	-.0007271	.0008162	-0.89	0.537	-.0110982	.009644
BoS	.0042222	.0022833	1.85	0.316	-.0247893	.0332337
FS	-.000015	4.56e-06	-3.29	0.188	-.0000729	.0000429
_cons	.0420209	.0219122	1.92	0.306	-.2364005	.3204423

Source: STATA ver. 15

individual and joint effect of the independent variables on the dependent variable. For hypothesis 3, the R-square is 0.9660 which is a very high prediction far above the 0.50 threshold. Also the F degrees of freedom has a value of 7.111 with p-value of 0.2733 which is > than 0.05 margin of error. This means that the coefficient of multiple determination R is not significantly different from zero, that is, gender heterogeneity and corporate diversification does not jointly affect the financing cash flow performance of DMBs in Nigeria. Similarly, gender heterogeneity (P=0.181) and business subsidiary (P=0.537) independently does not have a significant effect on financing cash flow performance.

4.3 Discussion of Finding

The focal point of this research is to investigate the independent and joint effect of boardroom heterogeneity and corporate diversification of cash flow performance of DMBs in Nigeria. The study of boardroom heterogeneity and corporate diversification have however shown mixed results from the prior researches. This present study found that there exist no significant effect of gender heterogeneity and business subsidiary on cash flow performance independently and jointly. Prior studies on gender heterogeneity have mixed results on different dependent variables such as; Aluoch et al. (2020) that showed that gender diversity has a significant effect on Return on Assets in Nairobi stock exchange, Nwezoku and Egbunike (2020) which found that gender diversity has a positive significant effect on tax aggressiveness in Nigeria, Onyekwere et al. (2019) found a significant of gender heterogeneity on banks financial performance in Nigeria. On the contrast, Adetula et al. [21] found that gender diversity does not affect financial performance of firms listed in Nigeria stock exchange, Alqatan (2019) also found that gender diversity is negatively associated with earnings managements. Endraswati [23] showed that the proportion of women as directors has a negative effect on the performance of sharia banking in Indonesia. Nwakoby and Ihediwa (2018) found an insignificant effect of business diversification on financial performance of firms in Nigeria.

The use of cash flow performance as the dependent variable for this study makes this study different study from previous studies, hence its contribution to existing literature. Despite this contribution, the study is limited to the use of business subsidiary as the only proxy for corporate diversification and hence suggest

that future researchers should explore other corporate diversification proxies.

5. CONCLUSION

It can be stated that having more women in DMBs as a challenge of the gender equality objective, which is included in the United Nations Sustainable Development Goals, has not yet reached a satisfactory level even in the most advanced countries and, despite the progress made, it is still insufficient. Previous studies have focused mainly on its effect on performance, while this study contributes to the literature by introducing corporate diversification as a joint independent variable to gender heterogeneity to ascertain what effect it will have on cash flow performance. The study decomposed cash flow performance into operating cash flow performance, investing cash flow performance and financing cash flow performance. Applying the multiple regression technique to the hypotheses of the study, it was evidently concluded based on the findings of the study that gender heterogeneity and corporate diversification does not independently and jointly affect the cash flow performance of DMBs in Nigeria. This study is however limited in content scope because of the use of only business subsidiaries to proxies corporate diversification. The study therefore recommends that future researchers should use other proxies such as; income diversification, geographical diversification and international diversification as proxies for corporate diversification.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Onatuyeh AE, Prose T. Board gender diversity and financial reporting quality:

- empirical evidence from Nigeria. *Global Journal for Research Analysis*. 2019;8(4): 120-126.
2. Collier PM. Stakeholder accountability: A field study of the implementation of a governance improvement plan. *Accounting Auditing and Accountability Journal*. 2008; 21(7):933-954.
 3. Hoel M. The quota story, five years of change in Norway. In Vinnicombe, S; Singh, V; Burke, R; Bilimoria, D. and Huse, M. (eds) *women on corporate boards of directors*. International Research and Practice. 2008;96-107.
 4. Marinova J, Platenga J, Remery C. Gender diversity and firm performance: Evidence from Dutch and Danish board rooms. Working Paper; 2010. Available:<http://igitar-archive.library.uu.nl/use/2010-0507.pdf>
 5. Abiola H. It is challenging to be a woman. *Nigerian Sunday Punch Newspaper*. 2004; 23.
 6. Obi C. Women's political participation through economic empowerment. Human Development Initiative, Lagos; 2001.
 7. Omotola S. What is this gender talk all about after all? *Gender, Power and Politics in Contemporary Nigeria*. African Study Monographs. 2007;28(1):33-46.
 8. Tarigan J, Hervindra C, Hatane SC. Does Board Diversity Influence Financial Performance? *International Research Journal of Business Studies*. 2018;11(3): 193–215. Available:<https://doi.org/10.21632/irjbs>
 9. Stuart R. Next-Gen Education. *Diverse Issues in Higher Education*. 2016;33(20): 12.
 10. Campbell K, Mingués-Vera A. Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics*. 2008;83:435-451.
 11. Farrell KA, Hersch PL. Additions to corporate boards: The effect of gender. *Journal of Corporate Finance*. 2005;11:85-106.
 12. Nielsen S, Huse M. The contribution of women on boards of directors: Going beyond the surface. *Corporate Governance: An International Review*. 2010;18:136-148.
 13. Azmi IA, Barrett M. *Women on Boards and Company Financial Performance: A study of Malaysian Smes*; 2013.
 14. Choi Park, Yoo. The value of outside directors: Evidence from corporate governance reform in Korea. *Journal of Financial and Quantitative Analysis*. 2007; 42(4):941-962.
 15. Earley C, Mosakowski E. Creating hybrid team cultures: An empirical test of transactional team. *Academy of Management Journal*. 2000;43(1):26-49.
 16. Hambrick DC, Cho TS, Chen M. The influence of top management team heterogeneity on firms competitive moves. *Administrative Science Quarterly*. 1996;41: 659-684.
 17. Jianakoplos NA, Bernasek A. Are Women More Risk Averse? *Economic Inquiry*. 1998;36(4):620–630.
 18. Cox T, Blake S. Managing cultural diversity: Implications for organizational competitiveness. *Academy of Management Executive*. 1991;5(3):45-56.
 19. Williams KY, O'Reilly. Demographic and diversity in organizations: A review of 40 years of research, in Staw, BM and Cummings LL (eds). *Research in Organizational Behaviour*. 1998;20:77-140.
 20. Imade OG. Board gender diversity, non-executive director's composition and corporate performance: Evidence from listed firms in Nigeria. *African Journal of Business Management*. 2019;13(9):283-290.
 21. Adetula D, Folashade O, Egbide BC, Adeyemo K. Gender heterogeneity and financial performance of listed nigerian companies. *International Journal of Mechanical Engineering and Technology*. 2019;10(3):1758–1763. Available:SSRN: <https://ssrn.com/abstract=3453233>
 22. Guldiken O, Mallon MR, Fainshmidt S, Judge WQ, Clark CE. Beyond tokenism: How strategic leaders influence more meaningful gender diversity on boards of directors. *Strat. Mgmt J*. 2019;1–23. DOI: 10.1002/smj.3049
 23. Endraswati H. Gender diversity in board of directors and firm performance: A Study in Indonesia Sharia Banks. *Review of Integrative Business and Economics Research*. 2018;7(1):299-311.
 24. Trinh VQ, Pham HTT, Pham TN, Nguyen GT. Female leadership and value creation: Evidence from London Stock Exchange. *Corporate Ownership & Control*. 2018; 15(2-1):248-257. Available:<http://doi.org/10.22495/cocv15i2c1p10>

25. Mandala N, Kaijage E, Aduda J, Iraya C. Gender diversity of boards, board composition and financial performance. *European Scientific Journal*. 2017;13(34): 62–79.
26. Osei AA, Yusheng K, Caesar AE, Tawiah VK. Impact of Gender Diversity on Corporate Social Responsibility Disclosure (CSR) in Ghana. *International Journal of Economics Review & Business Research*. 2017;4(2):1-24.
27. Ombaba KBM, Omuya J. Women in Institutional Boards and their Influence on Board Effectiveness. *Africa International Journal of Management Education and Governance (AIJMEG)*. 2016;1(2):33-39.
28. Alm M, Winberg J. How Does gender diversity on corporate boards affect the firm financial performance? Gothenburg: University of Gothenburg; 2016.

© 2021 Ndubuisi et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle4.com/review-history/74552>