

## **Board Heterogeneity and Cash flow Performance of Quoted Firms in Nigeria**

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### **Abstract**

*This study was carried out to examine the relationship between board heterogeneity and cash flow performance of quoted firms in Nigeria. In order to determine the relationship between board heterogeneity and cash flow performance, board heterogeneity was proxy using board gender heterogeneity while cash flow performance on the other hand was proxy by operating cash flow, financing cash flow and investing cash flow. The study adopted Ex Post Facto Design and data were collected from the annual reports and accounts of the listed consumer goods firms in Nigeria for the period ended 2016-2020. OLS model was used in the data analysis and the findings of the study indicate that there is a significant and positive relationship between board gender heterogeneity and cash flow performance of consumer goods firms in Nigeria at 1%-5% significant level. Thus, the study concludes that board heterogeneity ensures cash flow performance in Nigeria. In lieu of this, the study recommended that firms should increase the number of female directors in the board as high proportion of female directorship presence ensures cash flow performance.*

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**Keywords:** Board Heterogeneity, Operating Cash flow, Financing Cash flow, Investing Cash Flow

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### **1.0 Introduction**

Gender heterogeneity looks at the mix of the gender (male & female) on the board and how it affects the performance of the organization. Board heterogeneity can be a substitute for other governance mechanisms as differences among members on the board can improve the quality of board decisions but only if the board members themselves take the advantage of the reward of heterogeneity rather than window-dressing the concept of heterogeneity on the board (Wahid,

2012). Board heterogeneity focuses also on the linkages between directors and the strategies they pursue as regards the affairs of their organization. These strategies are as much a reflection of the ingrained characteristics and backgrounds of the executives. It is also understood that the manufacturing industry is largely characterized complex agency conflicts than any other industry (Levine, 2004). For this reason, it of utmost importance that shareholders consistently seek various governance mechanisms that can help limit this conflict, of which board heterogeneity is one of the mechanisms that can mitigate the agency conflict by providing various alternative mix of directors on the board.

In recent years, matters surrounding board of director leadership and oversight roles have taken on increased significance to investors so much that today's economic challenges highlight the importance that board heterogeneity plays in enhancing value and providing companies with a full range of fresh talents and experience. These challenges have been perceived overtime and have become a matter of concern after the collapse of many big multinational companies around the world arising from various board scandals. The collapse of these multinational companies has raised concern over the activities of the board of directors and this has brought about looking out for other governance mechanisms one of which is board heterogeneity. Many practitioners have clamored for this board heterogeneity with the argument that it can mitigate the effect of homogeneous board such as groupthink which is a phenomenon in which members' effort to achieve consensus override their ability to realistically appraise alternative courses of actions (Rhode & Packel, 2010).

Board heterogeneity has taken a significant place in the field of corporate governance today. This is because board heterogeneity is viewed as an apparatus for a solid inward control framework as it expands proficient and powerful dynamic exercises of the board of directors in the corporate organization (Campbell & Minguez, 2010).

The motivation for this study was aroused from the empirical results of the previous research studies which are somewhat mixed. Some researchers claim that board heterogeneity has positive impact on company by enhancing growth and monitoring process (Molero, 2011; Krishnan & Parsons, 2008; Dwyera, Richard, & Chadwick, 2003) while others discovered that board heterogeneity has no impact on economic performance of organization (Chapple & Humphrey, 2014; Karayel & Dogan, 2014). In spite of the importance of equality policies aimed at breaching the gap and many research associated with board heterogeneity in the developed world, there is still limited research on this area in Nigeria. Also in determining the relationship between board heterogeneity and financial performance from the a priori expectations, most studies measured financial performance using accounting based measures of return on equity, return on assets, etc and market based measures of Tobin's Q, net assets per share etc while none used cash flow performance to the best of our knowledge. Hence inclusion of cash flow performance as measure for financial performance becomes a necessity.

To reconcile these inconsistencies and inconclusive findings from previous studies, this study was carried out with the view to test if there is a nexus between board heterogeneity and corporate performance (cash flow performance) in Nigeria using firms quoted under consumer goods sector of Nigerian Exchange Group (NGX).

To achieve this purpose, the following hypotheses were formulated:

**H<sub>01</sub>:** Board Heterogeneity has no significant relationship with Operating Cash Flow Performance of Consumer Goods Firms in Nigeria

**H<sub>02</sub>:** Board Heterogeneity has no significant relationship with Financing Cash Flow Performance of Consumer Goods Firms in Nigeria

**H<sub>03</sub>:** Board Heterogeneity has no significant relationship with Investing Cash Flow Performance of Consumer Goods Firms in Nigeria

## **2.0 Review of Related Literature**

### **2.1 Conceptual Clarification**

#### **2.1.1 Board Heterogeneity**

Heterogeneity is a word that signifies diversity. There are varieties of dimensions along which individuals within a group can differ such as differences in board composition in terms of ethnicity, age, education, nationality and gender (Schwizer, Cucinelli & Soana, 2012) While some of these differences are observable, others are not.

As cited in Daniel, Aza and Pam (2020), The Australian Multicultural Foundation (2010) defined the term heterogeneity as significant differences between people, including perceptions of differences that need to be considered in particular situations and circumstances. Often the most significant differences are the least obvious, such as our thinking styles or beliefs and values. They gave multiple dimensions of diversity which may be more or less significant depending on the nature of the organization. These include gender, age, culture, ethnicity, regional culture, sexual orientation, mental and physical, abilities, education religion, language literacy, work experience functional, role and status, economic status family status, career roles, geographic location, work style, communication style, learning style, thinking style, management style, personality, ideology, profession, and industry.

Kiefer (2005) explained the concept of heterogeneity by arguing that homogeneity and heterogeneity refers to the extremes of the diversity scale. They are used as anchoring points, meaning less heterogeneous or more heterogeneous and less homogenous or more homogenous. They refer homogeneity as a diversity score equal to zero. This zero refers to the complete absence of dissimilarities between the individual board members. Heterogeneity refers to the complete dissimilarities between individual board members with regards to the included dimensions.

Board heterogeneity focuses also on the linkages between directors and the strategies they pursue as regards the affairs of their organization. These strategies are as much a reflection of the ingrained characteristics and backgrounds of the executives (Olaoti, 2016).

Van der Walt and Ingley (2003) defined board heterogeneity as the variety in the composition of Board of Directors. Within this definition, there are two (2) main categories of board diversity,

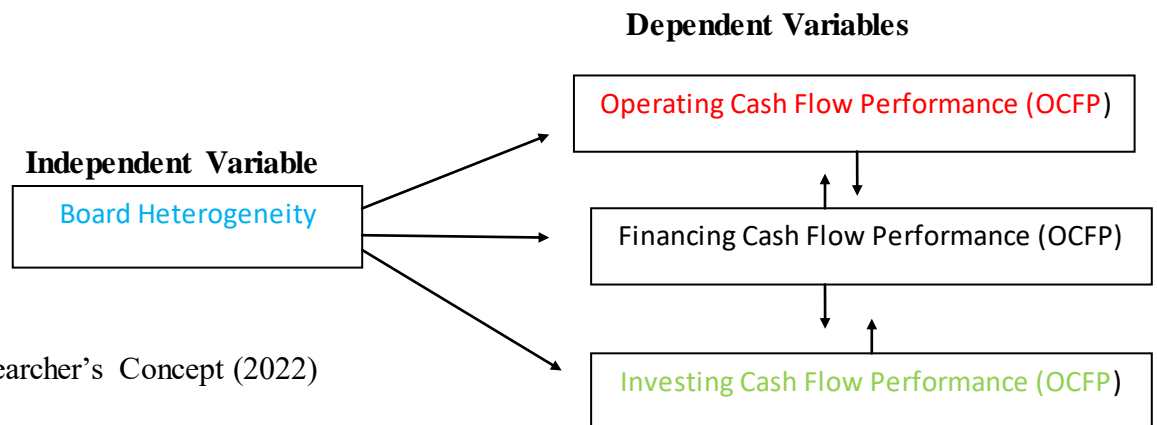
namely, demographic diversity and cognitive diversity.

Nuesch, (2009) stated that demographic diversity relates to the observable or readily detectable attributes of directors that includes race or ethnicity, nationality, gender and age whereas, Mansoor, Ali, Ali and Ali, (2013) highlight that cognitive diversity relates to the unobservable or less visible attributes of directors, such as educational, functional and occupational backgrounds, industry experience, and organizational membership.

### 2.1.2 Cash Flow Performance

Cash flow performance is the planning, organizing, and controlling of cash inflows and outflows in an entity during a particular period. Cash flow is the total value of the money that is actually received by or paid out by an entity for over a certain time period (Albrecht, 2003). Uremadu (2004) described cash flows of an entity as those pool of funds that the firm commits to its non-current assets, inventories, account receivables and marketable securities” that generates profit. The ability of the company to efficiently and effectively choose adequate sources of funds to finance its activities will differentiate a strong cash flow management and poorly managed cash flows.

**Figure 1: The Diagram of Conceptual Framework**



Source: Researcher's Concept (2022)

## 2.2 Theoretical Framework

The theoretical framework which gives the meaning of a word in terms of the theory on board heterogeneity and cash flow performance established in this study is Resource Dependence Theory work depends upon.

### 2.2.1 Resource Dependence Theory (RBT).

The resource-dependence theory was propounded by Pfeffer and Gerald in the year 1970. The resource dependency theory views the board of director's role as to secure resources for the organization and providing strategic advice that aids in firm survival and performance (Ali, & Abubakar, 2020). The resource-dependence approach is concerned with how organizational behavior is affected by external resources the organization utilizes. A fundamental assumption of

Resource Dependence Theory laid by Nienhuser (2008) is that dependence on “critical” and important resources influences the actions of organizations and those organizational decisions and actions can be explained depending on the particular dependency situation. Hermalin and Weisbach (2001) on the same note argue in favour of resource dependency theorists stating that skills, gender experience, expertise, nationality and ethnicity of board members form the important resources to guide and help firm performance. The resource dependency theory is the underpinning theory for this research since it provides a theoretical basis to explain this association between board heterogeneity and firm financial performance, since the theory states that ‘board members with different skills, different cultural backgrounds, different gender, among others, will act as a strategic resource to the firm which may result to superior performance (Ujunwa, Okoyeuzu & Nwakobi, 2012).

### **2.3 Empirical Review**

Daniel, Aza and Pam (2020) examined the impact of Board of Directors’ heterogeneity on the financial performance of listed deposit money banks in Nigeria. This area of board diversity especially the ethnic diversity is still a novel area of research in Nigeria. The financial performance in this study was the dependent variable while nationality, gender and ethnic composition of Board of Directors were the independent variables. The population of the study consists of fourteen(14) listed deposit money banks in Nigeria as at 31st December 2019. Ten of these banks constituted the sample size for the period of ten years (2010-2019). The study employed panel multiple regressions as a tool for analysis. Secondary data obtained from the financial statements of the companies were analyzed. The result showed that gender and ethnicity of board directors had positive and significant impact on banks financial performance while, nationality of the board of directors showed a negative but significant relation to banks financial performance. The study concludes that ethnic heterogeneity is an essential ingredient in board composition as it helps firms tap into numerous human resources available to it. It is therefore recommended that ethnic composition of Board of Directors of listed deposit money banks in Nigeria should be integrated into the corporate governance practices as allowing for a more ethnic balance translates into better financial performance.

Onyali and Okereke (2018) examined the effect of board heterogeneity on performance of firms in Nigeria. Specifically, the study examined the effect of board size, women on board and board independence on return on assets of listed manufacturing firms on Nigeria Stock Exchange. The study adopted Ex-post facto research design. Population of the study is made up of seventy-six manufacturing firms listed on the Nigeria Stock Exchange as at the year, 2016 while thirty-two firms was used as sample of the study. The secondary data used in the study were sourced from the publications of Nigeria Stock Exchange and annual reports of the sampled firms. Multiple regression analysis with the aid of E-view 9.0 statistical software was used for data analysis. Findings of the study revealed that board size, women on board and board independence have significant and positive effect on return on assets of manufacturing firms listed on Nigerian Stock Exchange. Based on this, the study recommended among others that firms should endeavor to diversify their board for improved groupthink and board effectiveness.

Ndubuisi, Akwuobi and Onyeogubalu (2021) examined 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.

Ali and Abubakar (2020) examined the impact of ethnic diversity on financial performance of 67 listed non-financial companies in Nigeria, during a 6-year period ranging from 2012 to 2017. Tobin's Q and Return on assets (ROA) measures the financial performance. Ethnic diversity, board size and leverage are addressed in the Nigerian context. Descriptive statistics, Correlation and the contemporary 2-Step System-GMM estimator was used in the analysis, and the results show that ethnic diversity and board size has positive and significant impact on firm performance (Tobin's Q). By implication, the existence of different ethnic backgrounds in the board of directors has significant influence on performance of Nigerian firms. Conversely, the results using ROA indicated that ethnic diversity has negative insignificant impact on performance, while firm size has negative significant influence. The study contributes to the understanding of board-performance link and provides academic evidence to policy makers in Nigeria for future governance reforms. Hence, ethnic diversification at the board level is highly recommended as it enhances the profits and perhaps improving internal operations of a company. However, the findings contribute to the literature by providing new and original insights that, within a developing setting, extend current understanding of the association between corporate governance and financial performance.

Ilogho (2017), examine the effect of board nationality and ethnic diversity on firms performance in the Nigeria stock exchange. With the aim of investigating the level of influence ethnic diversity and board nationality would affect firm performance in terms of profitability and growth in a developing economy, the study used of ROA, ROE and Tobin's Q for financial measures. The study analysed data from 60 non-financial firms with periodic observations from 2012-2015 using the ordinary least squares regression method. Yemeni formula was used to calculate the sample size out of the remainder 119 listed nonfinancial after 57 listed firms from the financial sector were removed. The total sample size was further streamlined to 60 based on a common reporting period (January 1st to December 31st) to ensure consistency. The Findings indicate that ethnic diversity and board nationality has no significant influence on the performance level of firms in both profitability (ROA and ROE) and growth (Tobin's Q). Findings also reveal that the average board size of the listed non financial firms in Nigeria meets the countries corporate governance requirement of nine (9) members and the average board has a combination of at least two of the three ethnic groups in Nigeria. The board composition of sampled firms still reveals the presence of family members in same board which is against the central board composition code of corporate governance. This study encourages a diverse board since there is no significant effect on financial based performance; it is still advisable to be

diverse except cost outweighs benefits. Diversity always tends to have effects on the way the board members make a decision, or strategic moves. It sets a control, brings innovation and could also slow down the rate of decision making.

Olaoti (2016) examined the impact of board of directors' heterogeneity on the financial performance of listed deposit money banks in Nigeria. This area of board diversity especially the ethnic diversity is still a novel area of research in Nigeria. The financial performance in this study was the dependent variable while nationality, gender and ethnic composition of Board of Directors were the independent variables. The population of the study consists of fifteen (15) listed deposit money banks in Nigeria as at 31st December 2012. Eleven of these banks constituted the sample size for the period of eight years (2005-2012). The study employed multiple regressions as a tool for analysis. Secondary data obtained from the financial statements of the companies were analyzed. The result showed that gender and ethnicity of board directors had positive and significant impact on banks financial performance while, nationality of the board of directors showed a negative but significant relation to banks financial performance. For banks to achieve greater returns in the market, it is recommended that ethnic composition of Board of Directors of listed deposit money banks in Nigeria should be integrated into the corporate governance practices as allowing for a more ethnic balance translates into better financial performance.

Darmadi (2011) conducted a study on 169 Indonesian firms. Their result suggested that there is a non-significant relationship between board nationality and firm performance. The study found that board nationality has no influence at all on ROA and Tobin Q. The study attributed this outcome to the possibility that firms with greater numbers of foreign board nationals in their boardroom are not perceived by the market as more attractive than their counterparts that have no or lower proportions of foreign directors on their board

### **3.0 Methodology**

This study adopts *Ex-Post Facto Design*. Secondary data was used which already exists and cannot be manipulated or controlled. The population of the study consists of the entire 21 firms quoted under Consumer Goods Sector of Nigerian Exchange Group (NGX) as at 2022 business list covering from 2016-2020. The use of quoted Consumer Goods Sector Firms on Nigerian Exchange Group (NGX) could be justified based on the fact that only few studies had centered on board heterogeneity on financial performance using market based and accounting based measures other than cash flow performance with reference to Consumer Goods Sector of NGX especially in the developed economies to the best of our knowledge. Out of 21 firms that formed our sample size, 2 firms have empty financial information within the period under study (*Golden Guinea Breweries Plc and Multi-Trex Integrated Foods Plc*) which was removed. On the other hand, BUA Foods Plc was dropped as it was listed on the floor of Nigerian Exchange Group (NGX) as at 5<sup>th</sup> January 2022. The selected firms range from Cadbury Nigeria Plc, Champion Breweries Plc, Dangote Sugar Refinery Plc, DN Tyre & Rubber Plc, Flour Mills Nig Plc, Guinness Nigeria Plc, Honeywell Flour Plc, International Breweries Plc, Mnichols Plc, N Nigeria Flour Plc, Nascon Allied Industries Plc, Nestle Nigeria Plc, Nigerian Breweries Plc, Nigerian Enamelware Plc, P Z Cussons Nigeria Plc, Unilever Nigeria Plc, Union Dicon Salt Plc

to Vita foam Nigeria Plc.

Based on this, a total of 18 firms formed our sample size with 90 observations. The data were obtained from the Annual Reports and Accounts of the sampled firms. OLS Model was employed and data were collected from the annual reports and accounts of the selected consumer goods firms in Nigeria.

### 3.1 Operationalization and Measurement of Variables

#### 3.1.1 Dependent and Independent Variable

The dependent variable used in the study cash flow performance and was proxy using operating cash flow performance, financing cash flow performance and investing cash flow performance. The Independent variable of board heterogeneity was captured using Board Gender heterogeneity (BGH) as shown on Table 1 below:

**Table 1: Measurement for Independent Variable**

Variable	Measurement	A Priori Expectations
<b>Independent</b>		
<b>Board Gender Heterogeneity</b>	Proportion of women in management to total number of board	Daniel et al (2020)
<b>Dependent</b>		
<b>Operating Cash Flow Performance</b>	Operating Cash Flow to Total Assets	Ndubuisi et al (2021)
<b>Financing Cash Flow Performance</b>	Financing Cash Flow to Total Assets	Ndubuisi et al (2021)
<b>Investing Cash Flow Performance</b>	Investing Cash Flow to Total Assets	Ndubuisi et al (2021)

Source: Empirical Survey (2022).

### 3.2 Model Specification and Justification

The study adapted and modified the model of Imade (2019) in examining the relationship between board heterogeneity and cash flow performance of quoted firms in Nigeria as shown below;

Imade (2019):  $RETOA = \beta_0 + \beta_1 BGENDIV + \beta_2 FSIZE + e$

The modified model for the study is shown as thus

$OCF_t = \beta_0 + \beta_1 BGH_t + \mu$



$$FCF_t = \beta_0 + \beta_1 BGH_t + \mu$$

$$ICF_t = \beta_0 + \beta_1 BGH_t + \mu$$

Where:

OCF = Operating Cash Flow

BGH = Board Gender Heterogeneity

FCF = Financing Cash Flow

ICF = Investing Cash Flow

$\mu$  = error term

#### 4.0: Data Analysis and Results

**Table 2: Descriptive Statistics**

	OCF	FCF	ICF	BGH
Mean	2.125778	3.173333	2.073333	2.751556
Std. Dev.	.9546492	4.319509	1.524467	.6806122
Maximum	9	13	9	7
Minimum	.8	1.4	0	.9
Observations	90	90	90	90

**Source: Researcher's Computation (2022).**

Table 2 helps to provide some insight into the nature of the selected listed consumer goods firms in Nigeria. Firstly, it was observed that on the average, in a 5-year period (2016-2020), the listed consumer goods firms in Nigeria were characterized by positive operating cash flow (PCF), financing cash flow and investing cash flow value of 2.125778, 3.173333 and 2.073333 respectively. This is an indication that the entire consumer goods firms in Nigeria have positive operating cash flow, financing cash flow and investing cash flow value with a standard deviation value of .9546492, 4.319509 and 1.524467 respectively. The average board gender heterogeneity (BGH) for the sampled firms was 2.751556 with a standard deviation value of .6806122. This means that firms with BGH values of 2.751556 and above have positive cash flow performance (operating, financing and investing). There is also a high variation in maximum and minimum values of BGH which stood at 7 and 0.9 respectively. This wide variation in BGH values among the sampled firms justifies the need for this study as the researcher assumes that firms with higher BGH values are firms with higher cash flow performance (operating, financing and investing) than those firms with low BGH values.

#### 4.1 Test of Hypothesis

**Table 3: Result on the Relationship between Board Heterogeneity and Operating Cash Flow Performance of Consumer Goods Firms in Nigeria**

Source	SS	df	MS			
Model	50.6624552	1	50.6624552	Number of obs =	90	
Residual	30.4481401	88	.346001592	F (1, 88)	= 146.42	
Total	81.1105953	89	.911355003	Prob > F	= 0.0000	
				R-squared	= 0.6246	
				Adj R-squared	= 0.6203	
				Root MSE	= 0.5882	

OCF	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
BGH	.01108532	.0091610	12.10	0.000	.0926476	.1290589
_cons	1.8207590	.0669317	27.20	0.000	1.687746	1.953772

Source: Result output from STATA 15.

**Table 4: Result on the Relationship between Board Heterogeneity and Financing Cash Flow Performance of Consumer Goods Firms in Nigeria**

Source	SS	df	MS			
Model	3.02837916	1	3.02837916	Number of obs =	90	
Residual	2.67573645	88	.030406096	F (1, 88)	= 99.597	
Total	5.70411561	89	.006409118	Prob > F	= 0.0068	
				R-squared	= 0.4578	
				Adj R-squared	= 0.4109	
				Root MSE	= 0.2567	

FCF	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
BGH	.0271026	.0675923	0.40	0.003	.1072228	.1614280
_cons	3.098759	.4938383	6.27	0.000	2.117359	4.080159

Source: Result output from STATA 15.

**Table 5: Result on the Relationship between Board Heterogeneity and Investing Cash Flow Performance of Consumer Goods Firms in Nigeria**

Source	SS	df	MS			
Model	.9.1513817	1	9.15138173	Number of obs =	90	
Residual	197.684618	88	2.24641611	F (1, 88)	= 4.07	
Total	206.835999	89	2.32399999	Prob > F	= 0.0466	
				R-squared	= 0.4420	
				Adj R-squared	= 0.3340	
				Root MSE	= 1.4988	

ICF	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
BGH	.0471138	.0233427	2.02	0.047	.0007252	.0935025
_cons	1.943697	.1705447	11.40	0.000	1.604775	2.282619

Source: Result output from STATA 15.

#### 4.2: Discussion of Findings

The result of the analysis of the study using OLS Model is expressed as follows:

**H<sub>01</sub>:** Board Heterogeneity has no significant relationship with Operating Cash Flow Performance of Consumer Goods Firms in Nigeria

In view of the above analysis as shown on table 3, the result shows that there is a significant and positive relationship between board gender heterogeneity and operating cash flow performance of listed consumer goods firms in Nigeria. With a P-value of 0.000, the test is considered statistically significant at 1% level. This could be verified with the coefficient of correlation of 1.1% which indicates that board gender heterogeneity ensures corporate operating cash flow performance by 1.1%. Based on this, we rejected the null hypothesis and accepted alternate hypothesis which contends that board gender heterogeneity has significant relationship with operating cash flow performance of consumer goods firms in Nigeria. By implication, corporate organizations with high proportion of women in board composition have a higher operating cash flow performance.

This agrees with the a priori expectations of Onyali and Okereke (2018), Bukar et al (2020), Iyafekhe and Ohiokha (2017), Endraswati (2018), Daniel et al (2020) who found significant relationship between board gender diversity and corporate performance.

**H<sub>02</sub>:** Board Heterogeneity has no significant relationship with Financing Cash Flow Performance of Consumer Goods Firms in Nigeria

In view of the above analysis as shown on table 4, the result shows that there is a significant and positive relationship between board gender heterogeneity and financing cash flow performance of listed consumer goods firms in Nigeria. With a P-value of 0.003, the test is considered statistically significant at 1% level. This could be verified with the coefficient of correlation of

2.7% which indicates that board gender heterogeneity ensures financing cash flow performance by 2.7%. Based on this, we rejected the null hypothesis and accepted alternate hypothesis which contends that board gender heterogeneity has significant relationship with financing cash flow performance of consumer goods firms in Nigeria. The implication of this is that corporate organizations with high proportion of women in the board have higher financing cash flow performance.

This is in tandem with the study of Ilogho (2017), Iyafekhe and Ohiokha (2017), Daniel et al (2020) who found the relationship between board heterogeneity and corporate performance significant.

**H<sub>03</sub>:** Board Heterogeneity has no significant relationship with Investing Cash Flow Performance of Consumer Goods Firms in Nigeria

In view of the above analysis as shown on table 5, the result shows that there is a significant and positive relationship between board gender heterogeneity and investing cash flow performance of listed consumer goods firms in Nigeria. With a P-value of 0.047, the test is considered statistically significant at 5% level. This could be verified with the coefficient of correlation of 4.7% which indicates that board gender heterogeneity ensures investing cash flow performance by 4.7%. Based on this, we rejected the null hypothesis and accepted alternate hypothesis which contends that board gender heterogeneity has significant relationship with investing cash flow performance of consumer goods firms in Nigeria.

This agrees with the a priori expectations of Ilogho (2017), Daniel et al (2020) who found significant relationship between the variables.

## 5.1 Conclusion and Recommendation

The study having developed a model fit on board gender heterogeneity captured that board gender heterogeneity has joint effect on firms' cash flow performance. Based on this, the study concludes that board heterogeneity ensures cash flow performance of listed firms in Nigeria. Thus, the study recommended that firms should increase the number of female directors in the board as high proportion of female directorship presence ensures cash flow performance.

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