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BOARD AGE HETEROGENEITY AND CASH FLOW PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA.

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Abstract

The objective of this study was to examine the effect of board age heterogeneity on cash flow performance of Deposit Money Banks (DMBs) in Nigeria. The study specifically examined the effect of board age heterogeneity on operating, investing and financing cash flow performance. The study adopted the ex-post facto research design; as the goal was not to manipulate any variable but rather to establish effect and mediation. The population comprised listed DMBs and the sample restricted to a purposive sample of six (6) banks whose annual reports were accessible for the period of 2005-2021 which was the time scope of this study. The data were analysed using techniques such as multiple regression model. The results showed that board age heterogeneity has no statistically significant effect on operating and financing cash flow performance. However, the study found a statistically significant effect on investing cash flow performance. Based on these findings, the study recommended that age heterogeneity should be encouraged on the boards of DMBs as it will help in improving the investing cash flow performances of the DMBs.

Keywords: Board Age Heterogeneity, Cash Flow

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1.0 Introduction

The Nigerian banking sector has been a major contributor to the market capitalization of the Nigerian stock exchange by providing a smooth and stable income to money and capital market. They play a significant role in the growth and development of every other sector and the economy at large by mobilizing funds from the surplus sector to the deficit sector. This attract potential investors which is another source of economic development. Banks help tosubstantially increase national savings and investment, hence, the volume of goods and services produced in the economy increases overtime through the multiplier effect and as such, the sector's performance especially its cash flow performance should not be left to chances. The cash flow performance of banks is of great importance because it determines the survival of the bank and provides liquidity for other deficit sectors and the economy as a whole. This performance of banks is a function of various factors such as regulatory scrutiny, degree of corporate diversification, level of financial development and deposit insurance systems which is largely characterized by complex agency conflicts than any other industry (Levine, 2004).

The anxiety and doubt about the corporate governance and cash flow performance of Deposit Money Banks occasioned by the incessant collapse of these banks have led several researchers to diversely look at the performance of DMBs with particular interest to its relationship with corporate governance. Many corporate governance reforms have pointed to the need to effect changes in the boardroom in terms of composition, structure and ownership configuration.

These changes in the boardroom configuration have been an issue of current discourse. Many practitioners and scholars alike have yelled for heterogeneity in the boardroom with the argument that it mitigates the effect of homogeneous board such as group think that is an occurrence in which members' effort to achieve consensus override their ability to convincingly appraise alternative courses of actions (Rhode and Packel, 2010). To this end, the United States Security and Exchange Commission in 2009 approved rules that require enhanced proxy statement disclosure regarding corporate governance and compensation matters. This rule requires public companies to disclose how they view diversity with respect to their boards. The concept of boardroom heterogeneity implies diversity and there are various dimensions along which it can be looked at in the case of board structure. Schwizer, Soana and Cucinelli (2012) identified diversity or heterogeneity in the boardroom in terms of ethnicity, age, education, nationality and gender. While some of these differences are observable, others are not.

Board heterogeneity are usually classified as occupational heterogeneity which relates to differences in professional background, tenure, education and social heterogeneity which refers to differences related to demographic features such as gender, age and race. This stimulates debate in the process of decision-making, and helps to eliminate stereotypes, mistrust and emotional conflict (Li, Liu and Gu, 2014). Some scholars pointed out that Directors' differences in professional background and experience may reduce effective communication and coordination, and hinder them from reaching agreement on strategic issues. Vigdor (2004) described Board heterogeneity as a double-edged sword; the results of benefits versus costs depend on the nature of the issue under discussion. Page (2007) argued that if the decision-making relies mainly on information and resources, the benefits of heterogeneity will be more evident; but, if the task requires more coordination between Board members, heterogeneity will increase internal friction. It is the decisions reached in the boardroom that are being sent down the line to the various levels of managements. The decision of the board determines the direction of the firm.

Age heterogeneity on boards helps the company to benefit from the different perspectives of different age groups, and the value of having the perspectives of younger directors on boards is emerging as an aspect of heterogeneity worthy of attention (Walt and Ingley, 2003). Age heterogeneity on boards encourages board development and learning, which may foster creative and innovative ideas (Galia and Zenou, 2013). Kang *et al.* (2007) argued that heterogeneity in age of directors helps the board to bring different perspectives, and for example to target firm's customers in different age groups with a variety of products and services. Huse and Rindova, (2001) thus asserted that the best way to represent the interest of customers, and increase the customer-board interaction would be to have directors from different age groups.

The effect of board age heterogeneity has been researched on different performance outcomes. Talavera *et al*. (2018) focused on bank profitability and found a negative effect. In the same vein, Tarus and Aime (2014) found that age heterogeneity produces less strategic change in the firm. Research about the board of directors' age heterogeneity in Norway, Denmark and Sweden turned out not to be statistically significant on the stock market performance of firms (Randoy *et al.* 2006). Also, research by Darmadi (2011) could not find statistically significant results for age heterogeneity in Indonesian boards of directors on firm performance. On the other hand, some studies which investigate the relationship between board age diversity on the firm financial performance show positive results (e.g. Kim and Lim, 2010; Mahadeo *et al*., 2012). Kim and Lim (2010) argued that the age of directors can be associated with the skills and knowledge of individuals, where young directors are more productive and older board members feature longer experiences and as such age heterogeneity increases within a board. They assumed that the combination of productivity and knowledge or experience can create synergies which may positively affect the performance of a firm. Mahadeo *et al*. (2012) assume that differences in age indicate differences in social and cultural values which contribute positively to teamwork outcomes. It is against this backdrop that this study seeks to examine the effect of board age heterogeneity on cash flow performances as a panacea to the lingering issues of corporate failures in the Nigerian DMBs.

The cash flow performance of the banking sector has been questionable because of the incessant bank failures. According to Owolabi (2010), bank failure in Nigeria started in the 1930s. The crises of confidence in Nigerian banking industry is not a new one, it has been with us for quite a long time and it occurred in the 1930s when all indigenous banks except the National Banks, collapsed (Nwankwo, 1992). In the 1940s, all but four indigenous banks survived liquidation. Between the period of 1952 and 1954, 16 out of 21 indigenous banks collapsed. In the late 1990s, 26 failed banks were liquidated while others were either restructured, renamed, or completely acquired by new investors. In 2004, Nigerian banks experienced liquidity problem which was as a result of capital inadequacies which led to the raising of minimum capital base to N25 billion. This recapitalization downsized the number of banks to 25 in 2006 from 89 which existed in 2004. In 2009, management of five Nigerian banks were fired namely; Intercontinental, Oceanic, Union, Afri, and First Inland banks over suspected fraudulent activities which terrifically heightened public anxiety about the health of these banks and to some extent created doubts about the corporate governance and cash flow performance of these banks.

The anxiety and doubt about the corporate governance and cash flow performance of DMBs occasioned by the incessant collapse of these banks have led several researchers to diversely look at the performance of DMBs with particular interest to its relationship with corporate

governance. Many corporate governance reforms have pointed to the need for effect changes in the boardroom in terms of composition, structure and ownership configuration.

In order to implement these reforms, researchers have taken turn to investigate how board age heterogeneity affects firm performance. The effect of board age heterogeneity has been researched on different performance outcomes. Talavera *et al*. (2018) focused on bank profitability and found a negative effect. In the same vein, Tarus and Aime (2014) found that age heterogeneity produces less strategic change in the firm. Research about the board of directors' age heterogeneity in Norway, Denmark and Sweden turned out not to be statistically significant on the stock market performance of firms (Randoy *et al.* 2006). Also, research by Darmadi (2011) could not find statistically significant results for age heterogeneity in Indonesian boards of directors on firm performance. On the other hand, some studies which investigated the relationship between board age diversity on the firm financial performance show positive results (Kim and Lim, 2010; Mahadeo *et al*., 2012). Previous studies have shown inconclusive results and have not focused its effect on cash flow performance, hence this study seeks to examine the effect of board age heterogeneity on cash flow performances as a panacea to the lingering issues of corporate failures in the Nigerian DMBs.

1.1 Objective of the Study

The objective of the study in a broad sense was to examine the effect of board age heterogeneity on the cash flow performance of Deposit Money Banks in Nigeria. In specific terms, the study sought to ascertain:

1. The effect of board age heterogeneity on the operating cashflow performance of DMBs in Nigeria.
2. The effect of board age heterogeneity on the investing cashflow performance of DMBs in Nigeria.
3. The effect of board age heterogeneity on the financing cashflow performance of DMBs in Nigeria.

1.2 Research Hypotheses

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

1. **Ho:** There is no significant effect of board age heterogeneity on the operating cashflow performance of DMBs in Nigeria.
2. **Ho:** There is no significant effect of board age heterogeneity on the investing cashflow performance of DMBs in Nigeria
3. **Ho:** There is no significant effect of board age heterogeneity on the financing cash flow performance of DMBs in Nigeria

2.0 Literature Review

2.1 Board Age Heterogeneity and Cash Flow Performance

The effect of board age heterogeneity has been researched on different performance outcomes. Talavera *et al*. (2018) focused on bank profitability and found a negative effect. In the same vein, Tarus and Aime (2014) found that age heterogeneity produces less strategic change in the firm. Research about the board of directors' age heterogeneity in Norway, Denmark and Sweden turned out not to be statistically significant on the stock market performance of firms (Randoy *et al.* 2006). Also, research by Darmadi (2011) could not find statistically significant results for age heterogeneity in Indonesian boards of directors on firm performance. On the other hand, some studies which investigate the relationship between

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Age heterogeneity on boards helps the company to benefit from the different perspectives of different age groups, and the value of having the perspectives of younger directors on boards is emerging as an aspect of heterogeneity worthy of attention (Walt and Ingley, 2003). Age heterogeneity on boards encourages board development and learning, which may foster creative and innovative ideas (Galia and Zenou, 2013). Kang *et al.* (2007) argue that heterogeneity in age of directors helps the board to bring different perspectives, and for example to target firm's customers in different age groups with a variety of products and services. Huse and Rindova, (2001) thus asserted that the best way to represent the interest of customers, and increase the customer-board interaction would be to have directors from different age groups.

2.2 Conceptual Framework

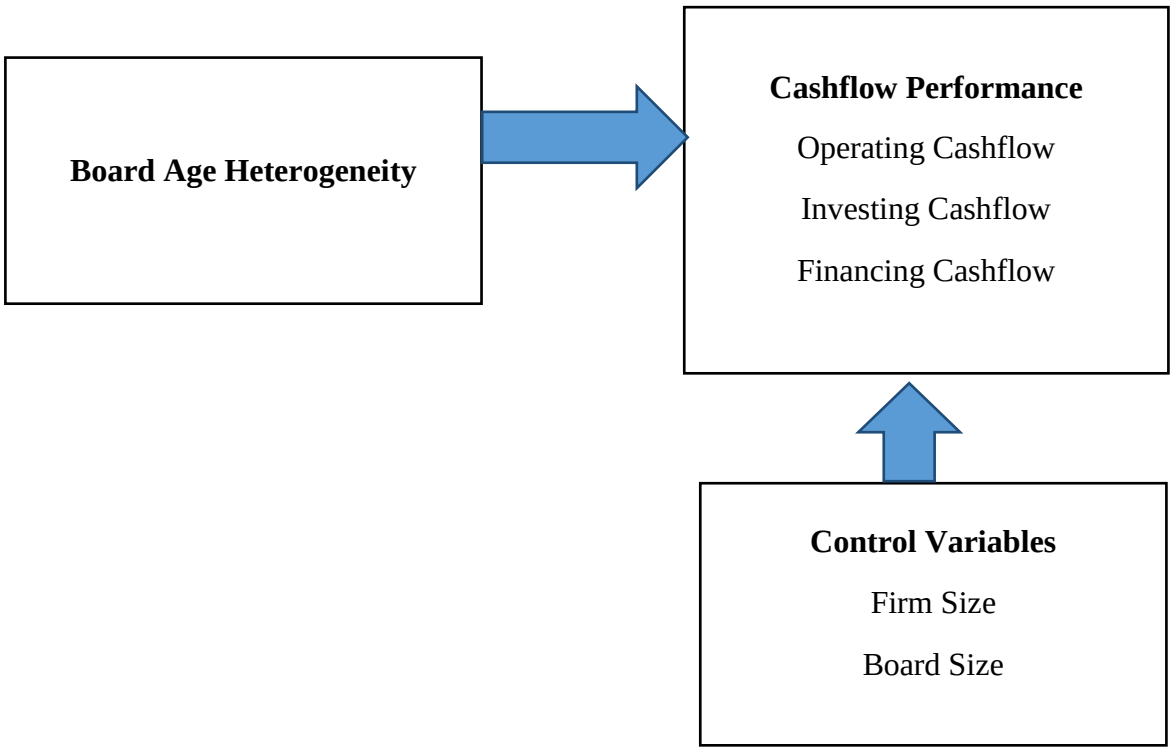


Figure 1: Author's diagrammatic representation of the conceptual framework

2.3 Theoretical Framework

The theory for this study dealing with board age diversity, corporate and its effect on cash flow performance is the Upper Echelons Theory (UET) propounded by Hambrick and Mason in 1984. The upper echelons theory states that organizational outcomes, strategic choices and performance levels are partially predicted by managerial background characteristics. The basic foundation of upper echelons theory is connected with the prior notions about the features of the executive management and viable behaviours displayed by them. Hence,

competitive behavioural characteristics at upper echelons level could have a positive relationship with the performance of the organization. The essential foundation of upper echelons theory is that executives' experiences, values, beliefs and personalities greatly influence their interpretations of the situations they face and in turn, affect their choices.

In view of this, top management members could with greater demographic diversity, influence decision making process in the top management and positively contribute to firm performance. In this theory, they stated that in stable environment, team homogeneity will be positively associated with profitability and that in turbulent environment, especially discontinuous environment, team heterogeneity will be positively associated with profitability. They argued that top management's characteristics (e.g. demographic) influences the decisions that they make and therefore the actions adopted by the organizations that they lead. It occurs because demographic characteristics are associated with many cognitive bases, values and perceptions that influence the decision making of top management.

The UET has however been heavily criticised by Priem, Douglas and Gregory (1999), stating that demographics–based top management team (TMT) researches are sacrificing construct validity, explanatory power and prescription practicality. They argue that the use of demographics partly stemmed from the ease with which demographics can be measured, stating that one is not sure which aspect of the deep-level attribute is being captured or the appropriate combination of the demographics that capture a particular deep-level attribute. In other words, in demographics–based studies, one is unsure of what the demographics being measured reflect. Secondly, the theory was criticised on the basis that the demographics identified through empirical studies are not necessarily under the control of the CEO and practitioners or are less amenable to manipulation by them. Finally, UET was criticised on the bases that demographics–based studies can be said to be unsuccessful when viewed against psychological research in terms of goals of Psychology, as research, according to psychologists, must be able to describe, explain, predict and control the phenomenon being studied. They argue that demographic–based studies have been quite successful at describing the relationships between top management team characteristics and firm performance and to some extent predict but unsuccessful at explaining and controlling. This is to say that such demographic-based studies have been successful at generating causal descriptions and predictions rather than causal explanations of the mechanisms through which demography affects organizational outcomes.

Consequently, Priem *et al.* (1999) suggested that studies should move beyond the current interest in demography into studying the factors that the demographics are construed to proxy. They suggested that researchers should focus on judgment, psychographics, and power distribution within the top management teams. However, empirically these deep-level variables such as those mentioned above are more salient and may not be quantitatively measured.

Having reviewed the UET theory and discovered after the criticism that the theory is perfect in predicting causal relationship or effect and this present study is to ascertain the causal effect of boardroom heterogeneity and corporate diversification on cash flow performance of DMBs, as against its explanatory effect. We therefore adopted the Upper Echelon Theory to underpin our study.

2.4 Empirical Review

Roy (2022) investigated the impact of workforce diversity (in terms of employee age, gender, and ethnicity) on organizational performance in Bangladesh's banking sector. The sample data was acquired from ten randomly chosen banks in Dhaka, Bangladesh, using a standardized questionnaire and a personal survey. Using structural equation modeling (SEM), the study revealed that age, gender, and ethnic diversity have a statistically significant positive impact on organizational performance. Among them, age diversity has the most significant effect on organizational performance, and gender diversity has less impact.

Bashir, Hameed, Bari and Ullah (2021) explored the impact of the age-diverse workforce (young and old employees) on organization's performance (financial and non-financial) and how job crafting mediates the relationship between age-diverse workforce and organization's performance. By following the administrative survey approach, a total of 450 questionnaires were distributed to the employees of the Pakistan Post Office. The partial least squares–structural equation modeling (PLS-SEM) approach was used for data analyses. The outcomes of the study explained that there is a significant relationship between both age groups of employees (young and old) and an organization's financial and non-financial performance. In addition, job craft partially mediates the relationship between young-age employees and organization's financial and non-financial performance. However, job crafting failed to mediate the association between old-age employees and organization's financial and non-financial performance.

Aluoch *et al*. (2020) examined the relationship between board structure and performance of firms listed at the Nairobi Securities Exchange. The study was anchored on agency theory, resource dependency theory, transaction cost theory, political theory and a census approach. Population of the study comprised sixty five (65) companies listed at the Nairobi Securities Exchange between 2002 and 2016. The study employed longitudinal descriptive research design to determine the relationship, and panel data regression analysis was conducted using the random effects model. The results revealed that gender diversity and occupational expertise had significant effect on Return on Assets, while board independence and board age had significant effect on Tobin's Q of listed firms in Kenya. On the other hand, board size had an insignificant effect on both Return on Assets and Tobin's Q. The overall effect of board structure on Returns on Assets and Tobin's Q was significant. The study concluded that various board structure mechanisms except board size have significant effect on performance of listed firms in Kenya, and the overall board structure had significant effect on performance of listed firms. The study recommended that management should incorporate board structure mechanisms to enhance performance of firms and regulatory authorities should review the current board structure variables to make them more relevant to improve performance of listed firms in Kenya.

Nwezoku and Egbunike (2020) investigated the effect of board diversity on corporate tax aggressiveness of quoted healthcare manufacturing firms in Nigeria. The study specifically examined nationality diversity, age diversity and gender diversity. The study adopted the *ex-post facto* research design. The sample was restricted to eleven companies quoted under the healthcare sector of the Nigerian Stock Exchange. The study relied on secondary data obtained from annual reports and accounts for the periods 2011 to 2018. The hypotheses were tested using Panel Estimated Generalised Least Squares; and, Two Stage Least Squares for Robustness check. The results of the empirical data analysis revealed that nationality diversity has a non-significant positive effect; age diversity and gender diversity were significant and positive. The study concluded that board diversity affects the effective tax rate

of quoted healthcare manufacturing firms in Nigeria. Based on these, the study recommended among others; that the inclusion of directors from different ethnic groups, tribes or nationalities. The age of a director should be considered a crucial factor in appointing an individual.

Alqatan (2019) examined the consequences of board diversity, with the objectives of measuring the impact of gender, age, national diversity on earnings management (EM). The research used data from 103 non-financial Kuwaiti listed companies in the period from 2010 to 2017. The data was from secondary sources such as their annual reports. The data analysis methods were correlation, multi-regression and robust regression. Earnings management was measured using the model modified by Jones (1995) and Kothari et al. (2005). Firm performance measured by ROA, ROE, Tobin's Q and total shareholder return. Findings from the study showed that gender diversity, age diversity, nationality diversity are negatively associated with earnings management whereas board size, board independent and role duality are positively associated with earnings management.

Karimi and Busolo (2019) examined the influence of age diversity on organizational performance of African Air Rescue (AAR) group. The study adopted a descriptive research design as it permitted the researcher to describe the influence of organizational performance and age diversity. The population for this study comprised of 90 employees of an insurance company in Nairobi. The study found that the Pearson correlation co-efficient value for age diversity and organizational performance was a significant and positive though weak. The study concluded that, age diversity is a very crucial resource for firms that intend to have sustainable workforce. It recommended that managers should perceive age diversity as a source of competitive advantage within the firm. They should embrace age diversity for the potential influence that it has for creativity and innovativeness in the firm.

Arnaboldi *et al* (2018) examined the impact of board characteristics on the performance of EU listed banks in the wake of the global financial crisis. The study considered standard board features such as type, tenure, size, and age of board members) as well as board diversity features (gender diversity, employee representation, internationalisation, and age diversity). Data on publicly listed commercial banks from EU countries over the period 2007-2015 were used for the study and were analysed using the Dynamic Panel System (DPS) and Generalised Method of Moments (GMM). The study also proposed a diversity index which summarised the different dimensions of diversity and control for unobserved heterogeneity and reverse causality. The findings indicated that overall board diversity has a positive impact on bank performance and that board diversity matters more for banks whose boards are less heterogeneous and its impact is stronger in countries more open to diversity.

Odhiambo, Gachoka and Rambo (2018) studied the relationship between age diversity and employee performance of public universities in Western Kenya. The target population composed of four public universities and the respondents were 120 head of departments. The study adopted a mixed method design and a survey method was used to collect primary data using a questionnaire pretested for validity and reliability. Descriptive and inferential statistics were used to analyze the data. Regression and correlation analysis established a statistically significant positive relationship between age diversity and employee performance.

Woschkowiak (2018) examined the relationship between demographic diversity in the board of directors and the financial performance of European firms. Demographic board diversity was conceptualised as gender, nationality and age diversity as well as a diversity index was

constructed to investigate the combined overall diversity effect. The study was focused on the largest European companies listed on the STOXX Europe 600 Index in the year 2016. Collected data were analysed using the correlational matrix. The findings revealed that overall demographic board diversity has a significant and positive effect on the financial performance of firms. Also, gender and nationality board diversity significantly improve the financial performance, while the influence of age diversity is insignificant.

Ciavarella (2017) explored the relationship between board diversity and firm performance for a sample of companies listed in Italy, France, Germany, Spain and United Kingdom. The study considered the different dimensions of diversity, both demographic (gender, age and nationality diversity) and cognitive or non-observable (diversity in directors' experience and education), and focused on diversity of both the entire board and its executive members only. The study used a fixed effect regression model with standards errors adjusted for potential heteroschedasticity to analyse the data. Results of the analysis showed an insignificant relationship between firms' performance and board diversity. However, when considering executive directors alone, results showed that firms where female and foreign directors are more represented have better performance than others. As for cognitive diversity, results indicated that performance increases when directors have a longer tenure.

3.0 Methodology

This research work adopted the *ex-post facto* research design because the event under investigation had already taken place. 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.

Judgemental sampling technique being a type of non-probability sampling method was used to select six (6) DMBs out of the thirteen (13) DMBs that make up the population of the study. The selection was based on the DMBs that have their annual reports on their websites for the period under study. The DMBs that formed part of the sample size were: Access Bank Nig. Plc, Fidelity Bank Nig. Plc, Guarantee Trust Bank Nig. Plc, United Bank for Africa Nig. Plc, Wema Bank Nig. Plc and Zenith Bank Nig. Plc.

The study employed two distinct techniques to analyse the data. *First*, descriptive statistics were computed such as the mean, median, standard deviation, minimum, maximum values statistics. This was used to describe the nature of data and also aid data visualization. *Second,* multiple regression was used to validate hypotheses one to three.

3.6 Definition of Variables/Proxies

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	
Board Age Heterogeneity	Blau Index of Heterogeneity (Youth (15-35years) vs Mid-age (36-64years) vs Elderly/Retired (above 65 years))
Control Variables	
Firm Size	The natural log of total assets
Board Size	This is the total number of directors sitting on the board as at financial year end

3.7 Model Specification

The first model adapted for this study was the multiple regression model stated as:

$$y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_p x_p + \varepsilon_i$$

Where β_0 is the intercept and $\beta_1, \beta_2, \beta_P$ are the coefficients and x_1, x_2, x_p are the observed predictors and ϵ is the residual.

The model was modified by the researchers and restated as follows below:

$OCF_{i,t} = \beta_0 + \beta_1 AH_{i,t} + \beta_2 FS_{i,t} + \beta_3 BOS + \varepsilon_{i,t}$ ……(1)

$ICF_{i,t} = \beta_0 + \beta_1 AH_{i,t} + \beta_2 FS_{i,t} + \beta_3 BOS + \varepsilon_{i,t}$ ……(2)

$FCF_{i,t} = \beta_0 + \beta_1 AH_{i,t} + \beta_2 FS_{i,t} + \beta_3 BOS + \varepsilon_{i,t}$ ……(3)

Where:
OCF= Operating Cash flow
ICF = Investing Cash flow
FCF = Financing Cash flow
AH = Age Heterogeneity
FS = Firm Size
BOS = Board Size
β_0 = The constant
$\beta_1 - \beta_5$ = The regression coefficients of predictor variables
$\varepsilon_{i,t}$ = error term

4.1 Data Presentation

Table 4.1: Variables Averages

	Independent Variable	Dependent Variables			Control Variables	
	AH	**OCF**	**ICF**	**FCF**	**BoS**	**FS**
Access Bank	0.163125	0.015625	-0.00813	0.02	14	2252.306
Fidelity Bank	0.363125	0.07	-0.02188	0.035635	14	1019.406
Guarantee Trust Bank (GTB)	0.243125	0.0375	-0.02063	0.00375	13	1792.375
United Bank of Africa (UBA)	0.435	0.055625	-0.045	0.0125	18	2208.419
Wema Bank	0.38	0.004375	-0.035	0.04625	10	336.0125
Zenith Bank	0.475625	0.041875	-0.01875	0.0225	13	3009.8

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

4.2 Descriptive Statistics

The descriptive statistics of the main independent variables utilised in the study are presented in Table 4.2 below; the table 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.

Table 4.2: Summary statistics of independent variables

Variable	Obs	Mean	Std. Dev.	Min	Max
AH	6	.3433333	.118454	.163125	.475625
Bos	6	13.66667	2.581989	10	18
FS	6	1769.72	957.3031	336.0125	3009.8

Source: STATA ver. 15
Where: AH-Age Heterogeneity, Bos- Board Size, FS- Firm Size.

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.

The mean value for AH (Age Heterogeneity) is .343; being that the sampled banks had on the average 34% age heterogeneous boards during the study period. The SD indicates that the values are spread out over a large range of values. 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 3.009 billion. The SD of 957.3 million indicates that the values are spread out over a large range of values.

4.3 Testing of Hypotheses

Hypothesis One

Ho: There is no significant effect of board age heterogeneity on the operating cashflow performance of DMBs in Nigeria

Table 4.3 Hypothesis One Test

Equation	Obs	Parms	RMSE	"R-sq"	F	P
OCF	6	5	.0247338	0.7947	.9676693	0.6332

OCF	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
AH	.0967014	.0978858	0.99	0.504	-1.147056	1.340459
BoS	.0123198	.0071729	1.72	0.336	-.0788212	.1034607
FS	4.16e-06	.000015	0.28	0.827	-.000186	.0001943
_cons	-.1458978	.0955481	-1.53	0.369	-1.359952	1.068156

Source: STATA ver. 15

The table 4.3 above showed the dependent variable (operating cash flow) with the independent variables (age heterogeneity) 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 effect of the independent variables on the dependent variable. For hypothesis one, the R-square is 0.7947which is a very high prediction far above the 0.20 threshold. Also the F degrees of freedom has a value of 0.968 with p-value of 0.504 which is > than 0.05 margin of error. This means that the coefficient of multiple determination R is not significantly different from zero.

Decision: Since the p-value of 0.504 is higher than the margin of error of 0.05, we therefore accept the null hypothesis: there is no significant effect of age heterogeneity on the operating cashflow performance of DMBs in Nigeria

Hypothesis Two

2b. **Ho:** There is no significant effect of board age heterogeneity on the investing cashflow performance of DMBs in Nigeria

Table 4.4 Hypothesis Two Test

Equation	Obs	Parms	RMSE	"R-sq"	F	P
ICF	6	5	.0001518	1.0000	9246.632	0.0078

ICF	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
AH	-.0503486	.0006009	-83.79	0.008	-.0579836	-.0427137
BoS	.0004097	.000044	9.30	0.068	-.0001498	.0009692
FS	.0000127	9.19e-08	138.41	0.005	.0000115	.0000139
_cons	-.0222643	.0005865	-37.96	0.017	-.0297169	-.0148117

Source: STATA ver. 15

The table 4.4 above showed the dependent variable (investing cash flow) with the independent variables (age heterogeneity) 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 two, the R-square is 1.0000which is a perfect prediction. Also the F degrees of freedom has a value of 9246.632 with p-value of 0.008 which is < than 0.05 margin of error. This means that the coefficient of multiple determination R is significantly different from zero.

Decision: Since the p-value of 0.008 is lower than the margin of error of 0.05, we therefore reject the null hypothesis: there is a significant effect of age heterogeneity on the investing cashflow performance of DMBs in Nigeria.

Hypothesis Three

2c. **Ho:** There is no significant effect of board age heterogeneity on the financing cashflow performance of DMBs in Nigeria

Table 4.5 Hypothesis Three Test

Equation	Obs	Parms	RMSE	"R-sq"	F	P
FCF	6	5	.0169126	0.7595	.7893007	0.6767

FCF	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
AH	.0593411	.0669329	0.89	0.538	-.7911223	.9098045
BoS	.0001314	.0049048	0.03	0.983	-.0621895	.0624523
FS	-5.62e-06	.0000102	-0.55	0.680	-.0001356	.0001244
_cons	.0207558	.0653344	0.32	0.804	-.8093969	.8509086

Source: STATA ver. 15

The table 4.5 above showed the dependent variable (financing cash flow) with the independent variables (age heterogeneity) 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 three, the R-square is 0.7595which is a very high prediction far above the 0.20 threshold. Also the F degrees of freedom has a value of 0.789 with p-value of 0.538 which is > than 0.05 margin of error. This means that the coefficient of multiple determination R is not significantly different from zero.

Decision: Since the p-value of 0.538 is higher than the margin of error of 0.05, we therefore accept the null hypothesis: there is no significant effect of age heterogeneity on the financing cashflow performance of DMBs in Nigeria

4.4 Discussion of Findings

The focal point of this research was to investigate the effect of board age heterogeneity on cash flow performance. The study of board age heterogeneity has however shown mixed

results from the prior researches. This present study found an insignificant effect of age heterogeneity on cash flow performance, except for investing cash flow that age heterogeneity showed a statistically significant effect. This implies that for a firm to improve its investing cash flow figures, the board of that firm should be dynamically diversified age wise. Prior studies showed mixed results; e.g Dagsson (2011) found that age diversity significantly affects firm performance, Galia and Zenou (2013) found that age diversity showed a positive relationship with product innovation, and a negative impact on organizational innovation, Eulerich et al (2014) found an insignificant negative effect of age heterogeneity on corporate performance in Germany.

Conclusion

Board age heterogeneity has been an issue of recent discourse primarily because of the perceived unsuitability of homogeneity given the diverse levels of human existence. Several studies have taken turns to examine the effect of board age heterogeneity on various performance indices of different industries. This study examined what effect board age heterogeneity will have on cash flow performance of DMBs in Nigeria. Several empirical literatures were reviewed both locally and internationally. The Upper Echelon Theory (UET) was the theoretical anchor of this study. Ex post facto research design was adopted for this study because of the unalterable nature of the independent variables utilised in the study. The population of the study comprised theDMBs on the Nigerian Stock Exchange. The sample was delimited to six (6) DMBs that has their annual reports from 2005-2021 online. The study employed the multiple linear regression techniqueto analyse the data. This study majorly found a non-significant effect of board age heterogeneity on operating and financing cash flow performance and a significant effect on the investing cash flow performance of DMBs. The study made several contributions and recommendations based on the findings.

5.3 Recommendations

1. Age heterogeneity should be encouraged on the boards of DMBs as it has a positive significant effect on the investing cash flow performances of the DMBs.
2. The size of the board should be a determining factor of the level of age heterogeneity expected on the board.
3. The cash flows from the operating and financing activities should be strengthened based on the operating and financing policies of the bank as it against its boardroom diversity.

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