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Impact of Board Diversity on Profitability of Selected Consumer Goods Manufacturing Firms in Nigeria

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Abstract
The declining financial performance, characterized by low profitability and insufficient board diversity, has been observed in Nigerian manufacturing firms over the past decade. The significant contributions of the consumer goods manufacturing sub-sector highlight the need for empirical investigation to enhance its performance. This study assesses the impact of board diversity attributes on the profitability of selected consumer goods manufacturing firms in Nigeria. Using Ex-post-facto and descriptive research designs, the study focuses on consumer goods firms listed on the Nigerian Exchange Group (NGX). Out of 25 firms listed, 10 were selected using homogeneous purposive sampling. Descriptive analysis was applied to study the variables, and panel regression was used to analyze the effects of board diversity on profitability, with tests conducted at a 5% significance level. Results show that educational background (p = 0.0167), ethnic diversity (p = 0.0018), and CEO duality (p = 0.0253) positively influenced profitability. The pooled regression analysis revealed that CEO duality (p = 0.001765), financial expertise (p = 0.000583), and educational diversity (p = 0.010698) significantly affected profitability, measured by Return on Assets (ROA). The study concluded that board diversity attributes, such as gender, educational, ethnic diversity, and financial expertise, positively impact the profitability of Nigerian consumer goods manufacturing firms. It recommends that firms promote initiatives to enhance gender and educational diversity and support financial expertise on their boards.

Keywords: *Board diversity; Profitability; Consumer Goods Manufacturing Firms; Return on Assets*

1. Introduction

The declining financial performance evidenced by low profitability anchored on board diversity attributes inadequacy have been observed on the manufacturing firms in the last decades. The colossal contributions of consumer goods manufacturing sub-sector have thus called for more empirical investigation on improving the performance for better economic contributions to nation's development. Previous studies like Bolouppremo and Ayekurobotaregha, (2024); Dancan, *et al.,* (2023); Adegboyegun; and Igbekoyi, (2022); Assenga, (2021) have identified inconsistencies in research findings due to variations in how board diversity is measured. This study aims to provide more recent research on the effect of board diversity on the profitability of selected consumer goods manufacturing firms in Nigeria.

In extant literature, arguments have been made for and against board diversity. For instance, Igbekoyi, Adegbayibi and Adesina (2021); Dancan, *et al.,* (2023); Aloupremo and Ayekurobotaregha, (2024) advocates board diversity premised on the notion that a more diverse board with varied skills and different perspectives will generate more efficiency and resource utilization. On the other hand, Adusei and Obeng (2019), Khaoula and Moez (2019) have argued against board diversity owing to the belief that a more diverse board will incur more cost to the firm as regards communication, coordination and conflict among the directors due to their varying backgrounds. Furthermore, most studies in extant literature especially in Nigeria such as that of Igbekoyi, *et al.,* (2021) and Aladejebi (2021) among others focused on the banking sector. Therefore, this study seeks to advance existing contributions by focusing on the manufacturing sector as the sector accounts for a significant portion of the nation's GDP. In addition, several contributions viewed diversity solely from different angles with most studies focusing on gender (Igbekoyi, *et al.,* 2021; Song, Yoon and kang, 2020; Mohsni, Otchere and Shahriar, 2021).

The consumer goods manufacturing sector in Nigeria stands as a vital driver of economic activity, contributing substantially to employment generation, revenue accrual, and overall economic development (Adegbite & Adegbite, 2021). As a cornerstone of the nation's industrial landscape, this sector navigates a dynamic environment marked by market volatility, regulatory intricacies, and global economic shifts. The sector's significance is underscored not only by its contribution to the country's Gross Domestic Product (GDP) but also by its role in meeting the essential needs of a burgeoning population. Thus, some listed firms in Nigeria Stock Exchange (NSE) have been recording mixed results on their financial performance as a result of taken poor decision and that has affected their financial performance (Adepoju & Onaolapo, 2012; Abubakar, et *al*, 2018). Over the last decades, this has led many listed firms across the different real sectors of Nigeria's economy to be delisted from the NSE. The reason behind such companies being delisted from the NSE was unclear and findings from past research seem to be divergent. In short, the decision that firms take will go a long way to determine whether they will survive in a competitive business environment or not and a diverse board structure could of greater advantage.

Studies such as Githaiga, *et al.,* (2022); Orazalin (2020); Othmani (2021); Saona, Muro, San Martín and Baier-Fuentes (2019) examine board gender diversity, none of these studies examines the expertise of the female gender on the board. Most studies in extant literature especially in Nigeria such as that of Igbekoyi, *et al.,* (2021) and Aladejebi (2021) did not focus on consumer goods manufacturing. In addition, several contributions from Igbekoyi, *et al.,* 2021; Obeitoh, *et al*., 2023: Bolоupremo and Ayekurobotaregha, (2024 viewed diversity solely from different angles with most studies focusing on gender (Kang, Mohsni, Otchere and Shahriar, 2021). Therefore, this study seeks to advance existing contributions by focusing on consumer goods manufacturing firms, evaluating the extent to which board diversity attributes affect their profitability measured by return on assets from 2011-2023.

2. Literature Review and Conceptual Underpinining

Board Diversity Attributes

Boards of directors, as the principal mechanism of corporate governance in decision making, are responsible for the implementation of organizational strategies. Different decisions can be adopted depending on the board composition, in particular, gender diversity (Nielsen and Huse, 2010). The selection of directors has been shown to not be gender-neutral but is influenced by the gender composition of the board (Birkner, 2020). Organizations, in response to the pressures of gender diversity, may select their female directors only among this elitist group, which does not provide a real increase in the presence of women on boards (Nili, 2019). Board diversity refers to the wide array of backgrounds, ethnicities, skills and experiences possessed by the board of directors as a whole. To ensure good corporate governance, boards must consist of individuals with a range of attributes, each bringing something different to the table. Without diversity on the board, decision-making can be suboptimal. A varied collection of perspectives can lead to insightful discussions and a more efficient board.

Diversification involves engaging individuals with diverse socio-economic characteristics and backgrounds to better represent consumers and stakeholders from those groups. An optimal board composition is essential for proper corporate governance. The composition of the board influences its effectiveness, the performance of its roles, and consequently, the financial performance of the company (Gordini & Rancati, 2017). The roles of the Board of Directors (BOD) are both crucial and irreplaceable. According to Soliman and AbdElsalam (2012), the board plays a vital role in corporate governance by monitoring top management and ensuring the reliability of financial reporting.

Greater board diversity is argued to foster interactions and shared ideas among board members, enhancing their understanding of the firm's environment (Nielsen & Huse, 2010). The knowledge and experience of board members, combined with resources from the external environment, can improve firm performance by enhancing decision-making quality (Hsu *et al.*, 2019). Additionally, diversity promotes teamwork and collaboration on the board, encouraging individuals with different genders, expertise, experiences, cultures, ethnic backgrounds, educational qualifications, and opinions to address a range of important challenges within the firm (Society for Corporate Governance in Nigeria, 2014). Kagzi and Guha (2018) categorized board diversity into two main types: structural diversity and demographic diversity. Structural diversity encompasses characteristics such as board size, CEO role duality, and board independence. In contrast, demographic diversity includes attributes like gender, nationality, education, and age diversity among board members. A firm with a diverse board of directors demonstrates its commitment to a varied workforce, which can attract human capital from diverse backgrounds. Board Diversity was recommended to include a variety of skills, experience, qualifications, ethnicity, etc., as it tends to bring balance to the board (Adegboyegun & Igbekoyi, 2022; Efenyumi, Nwoye & Okoye, 2022; Ogieh & Jeroh, 2022).

Consumer Goods Firms

The consumer goods sector is a category of stocks and companies that relate to items purchased by individuals and households rather than by manufacturers and industries. These companies make and sell products that are intended for direct use by the buyers for their own use and enjoyment.

This sector includes companies involved with food production, packaged goods, clothing, beverages, automobiles, and electronics. Nigeria, being one of the largest economies in Africa, is home to a diverse array of consumer goods manufacturing entities, encompassing food and beverages, personal care products, and household goods (Oxford Business Group, 2018). The environment is dynamic and constantly changing. This then creates opportunities and threats for consumer goods sub- sector of Nigeria. Prominent stakeholders and players in the consumer goods subsector include Nestle Food Nigeria Plc, Cadbury Nigeria Plc, Nigeria Bottling company Plc, and Dangote flourmill Plc to mention but a few. The lamentation of manufacturers especially those of the consumer goods sub- sector is that the operating environment in the country is poor and the cost of business operation is expensive. Thus inadequate management of macro-economic variables such as interest rate, unstable exchange rate, import, export and duplicating of essential infrastructures account for the challenges in this regard (Akpan, *et al*., 2016). The consumer goods sector in Nigeria, grappling with insider abuses and unaccounted drawings, faces additional challenges (Oshim and Igwe, (2024)

Theoretical Framework

This study is underpinned on agency theory and resource dependence theory. The board aims to resolve agency problems between managers and shareholders (Dang *et al.*, 2013). Based on this theory, the inclusion of women and foreign directors can enhance the board's effectiveness and improve firm performance. The fundamental premise is that diversity can reduce the likelihood of group think among board members (Ujunwa *et al.*, 2012). Agency theorists also suggest that having women, ethnic minorities, and foreigners as external stakeholders can bring fresh solutions to complex issues (Francoeur *et al.*, 2008). For instance, female directors may be more proactive in monitoring and controlling managers by asking more questions and offering different perspectives in the boardroom (Dang *et al.*, 2013). Additionally, diversity can increase board independence, as individuals with different genders, ethnicities, or cultural backgrounds might raise questions that traditional directors might not consider (Carter *et al.*, 2013). Further, the study is based on the assumption of the resource dependence theory. According to resource dependence theory, board diversity is a vital tool for accessing essential resources (Johnson *et al.*, 2016). Each director contributes unique attributes and a variety of resources, such as expertise, skills, information, and potential connections to stakeholders (Hillman *et al.*, 2009). The theory further assumed that there are interdependencies within a corporate environment where firms are largely affected by the activities and inactivates of other firms.

Empirical Review

Corporate board diversity research has become a new trend in accounting and corporate governance literature. Despite some studies on board diversity that are mostly predominant in developed countries less attention have been on the impact of board diversity on profitability of consumer goods manufacturing firms developing countries like Nigeria. Most studies were conducted outside Nigeria like Attia *et al.*, (2022) in Egypt, Dancan, *et al.*, (2023) in Kenya and Zhao and Abeysekera, (2022) in China. For example, Fitrasari, (2023) that was conducted outside Nigeria investigated the effect of board size, board independence, and the composition of board independence on mitigating accrual and real earnings management by using a sample from companies listed in the S&P 500 index from 2010 to 2019. Efenyumi and Okwudibe, (2023) that investigated the influence of corporate boards' diversity on earnings quality of listed firms in Nigeria did not focus on profitability and not on foods and beverages manufacturing firms.

A study by BOlоupremo and Ayekurobotaregha, (2024) investigated the impact of board diversity on the financial performance of quoted manufacturing companies in Nigeria. Taking into consideration the statement of the problems, objectives of the study, and research questions, a review of the literature and secondary data were used in line with the objectives of the study to elicit relevant data from the firms' published financials collected from the firms' website with the focus on a 5-year time series data on age diversity, gender diversity, educational diversity, nationality diversity and financial performance from 2018 to 2022 respectively. Findings revealed that there was a significant relationship between age diversity, gender diversity, national diversity, educational diversity, and firms' financial performance, with all the independent variables positively affecting the return on total assets of the surveyed listed manufacturing firms in Nigeria.

In Nigeria, Aziekwe and Okegbe (2024) investigated the impact of board diversity on the financial performance of listed consumer goods firms in Nigeria. The study aimed to determine the effects of nationality diversity (BND), gender diversity (BGD), and age diversity (BAD) on the cash flow return on investment (CROI) of these firms, with firm size (FSZ) as a control variable. An ex-post facto research design was adopted, focusing on a population of twenty-one listed consumer goods firms on the Nigerian Exchange Group. A sample of fifteen firms was selected through purposive sampling. Secondary data were collected from the firms' annual reports over a ten-year period (2013 to 2022). Panel-corrected standard errors (PCSE) regression was used to test the hypotheses, revealing the following results: nationality diversity had a negative but insignificant effect on CROI, gender diversity had a positive but non-significant effect on CROI and age diversity had a positive and significant effect on CROI.

Adegboyegun and Igbekoyi, (2022) examined the effect of board diversity on the financial performance of manufacturing firms in Nigeria. The motivation for the study lies in the increased quest to establish the most appropriate board with the optimum mix needed to guarantee the absence of corporate failure. The study comprises of 64 listed manufacturing firms as at 31st December 2020, and sample size of 20 listed manufacturing firms were selected using purposive sampling technique. Data were obtained from annual reports of the selected firms from 2011 to 2020. Descriptive statistics and panel regression estimation techniques were used to analyze the data collected. The findings shown that board diversity has an insignificant effect on performance except for financial expertise diversity with a positive effect on financial performance, and there is a presence of long run relationship with firm performance. Based on these findings, the study therefore concludes that diversity on the board in terms of gender, ethnicity and educational background will not really improve or reduce performance of the firms while diversity in terms of financial expertise will do.

Fitrasari, (2023) investigated the effect of board size, board independence, and the composition of board independence on mitigating accrual and real earnings management by using a sample from companies listed in the S&P 500 index from 2010 to 2019. The study used random effect regression analysis and finds evidence that large board size is an ineffective tool for reducing earnings management. In contrast, larger board independence proves to mitigate earnings manipulation. However, when board size interacts with board independence, the result becomes more positive indicating that board independence strengthens the positive effect of board size on earnings management. It can be suggested that a small board with small independent directors is more effective in reducing both accrual and real earnings management than a larger board with larger outside directors. They found that board characteristics are not separate individuals but complementary characters.

In Kenya, Dancan, *et al.,* (2023) evaluated the effect of board diversity on small-holder coffee processors' financial performance in Kenya. They used data from 41 small-holder coffee processors and a 2-stage least squares regression analysis to evaluate board diversity's effect on the processors' financial performance. They found that board age, the proportion of independent board members, and the proportion of female board members positively and significantly affected the return on assets of the small-holder coffee processors. Based on their findings emphasis was made for more female board members which requires further empirical evidence from other socio-cultural context.

In a study from Tanzanian, Assenga, (2021) investigated the impact of foreign directors on the financial performance of the Tanzanian listed firms. Their study applied balanced panel data Ordinary Least Square (OLS) regression analysis on 120 firm-years observations obtained from the firms' audited annual reports and from the OSIRIS database from 2006 to 2018. Their study support found that foreign directors have a positive relationship with the firms' financial performance. They also found that foreign directors enhanced firm performance by providing the firm's Board of Directors with effective and efficient overseeing and advice to the CEO and the top management.

In Indonesian, Triasesiarta and Quinnshe, (2022) investigated if gender diversity on boards effectively drives firm profitability. They used two periods, before and during COVID -19 pandemic, to analyze how gender diversity existence strengthens or weakens the impact of the Board of Commissioners (BOC), Board of Directors (BOD), Independent Commissioner (IC) and Directors (ID) on firm profitability. They collected sample of 40 Food and Beverage companies listed on the Indonesian Capital Market from the period 2011 - to 2021. The research models were estimated using panel data regression. Their findings showed that before Covid 19 – Pandemic, BOC and BOD had a significant negative impact on firm profitability. In contrast, IC and ID had a positive and significant impact on firm profitability. The existence of women in BOC, BOD, and as independent commissioners do not moderate the impact of BOC, BOD, and IC on firm profitability, while female directors had a positive role in moderating the impact of ID on firm profitability. During the Pandemic, BOD did not influence firm profitability, while BOC and ID had a negative influence, and IC positively influenced firm profitability. Interestingly during a pandemic, the existence of women in BOC and BOD negatively moderates the influence of the BOC and BOD on firm profitability. On the contrary, the women's role as independent commissioners and director positively moderates the influence of independent commissioners and directors on firm profitability.

In Nigeria, Aziekwe and Okegbe (2024) investigated the impact of board diversity on the financial performance of listed consumer goods firms in Nigeria. The study aimed to determine the effects of nationality diversity (BND), gender diversity (BGD), and age diversity (BAD) on the cash flow return on investment (CROI) of these firms, with firm size (FSZ) as a control variable. An ex-post facto research design was adopted, focusing on a population of twenty-one listed consumer goods firms on the Nigerian Exchange Group. A sample of fifteen firms was selected through purposive sampling. Secondary data were collected from the firms' annual reports over a ten-year period (2013 to 2022). Panel-corrected standard errors (PCSE) regression was used to test the hypotheses, revealing the following results: nationality diversity had a negative but insignificant effect on CROI, gender diversity had a positive but non-significant effect on CROI and age diversity had a positive and significant effect on CROI.

In another study, Matthew *et al.*, (2023) investigated as of December 2022. Gender diversity was measured by the percentage of women directors on the board, the percentage of women directors on the audit committee, and board independence. The financial performance was proxied by the asset efficiency ratio. Their study included a sample of 16 companies from the Nigerian Stock Exchange, and the data were analyzed using robust fixed effect regression. The findings revealed a negative and statistically significant relationship between gender diversity variables and company performance, while board size had a statistically insignificant effect on financial performance. Their study concluded that gender diversity on the board and audit committee diminished the financial performance of listed fast-moving consumer and industrial goods firms in Nigeria.

Oladejo *et al.*, (2021) investigated impact of corporate board and external audit attributes on earnings quality: Experience from Nigeria quoted foods and beverages firms. They showed that there is statistically significant relationship between audit independence and the absolute value of discretionary accruals. They stressed further that the implication of this is that, auditors' independence improves earnings quality because when the auditors become independence, management is compelled to eschew earnings manipulation. The study also found a statistical significance negative relationship between audit firm size and absolute discretionary accruals. Board Size reports a negative insignificant relationship with absolute discretionary accruals. This means that increasing the number of members of the board does not necessarily reduce the degree of discretionary accruals. Board independence also reports an insignificant positive association with discretionary accruals. This means that boards may contain less effective independent directors and they are ineffective in restricting discretionary accruals in sampled listed foods and beverages in Nigeria.

Abubakar, *et al.*, (2021) investigated the relationship between board attributes and real earnings management of listed Nigerian financial institutions. The residuals from Roychowdhury (2006) was used to proxy real earnings management. Data were collected from 45 financial institutions quoted on the Nigerian Stock Exchange (NSE) from 2011 to 2016. For analysis purpose, the Panel Corrected Standard Errors (PCSEs) regression was utilized. The regression result shows that board meeting and board expertise had a significant positive impact on real earnings management. Whereas, female directors had a significant negative influence on real earnings management. However, there is the need for an informed study of this nature that examines how board diversity attributes influence profitability from the perspectives of consumer goods manufacturing firms in Nigeria

3. Methodology

The study adopts Ex-post-facto research and descriptive research design and covered all on the consumer goods manufacturing firms listed on the Nigerian Exchange Group (NGX), Lagos state, Nigeria. Out of the twenty five (25) consumer goods manufacturing ten (10) of them were selected using homogeneous purposive sampling technique. The purposive choice of the sampled selected consumer goods firms is based on their performance and ease of accessibility to their report. The annual reports of sampled selected consumer goods firms covering (2011-2023) were analyzed to achieve the objectives of the study. The sampled firms include Guinness, Cadbury, NESTLE, 7UP Nigerian Bottling Company, Flour Mills, Dangote Sugar, Nigeria Brewery, Honey Well Flour mill, De United Foods Industries Ltd, International Brewery. The study collected secondary data from audited annual reports submitted to the Nigerian Exchange Group for 13 consecutive years. The period witnessed renewed efforts in repositioning the corporate governance mechanism in Nigeria.

Model Specification

This study model was based on the model of Assenga (2021) in which financial performance measured in terms of return on asset (ROA) and return on equity (ROE) was expressed as a function of Foreign directors with control variables which are outside directors, board size, firm debt, firm size and firm age. Hence, the models for this study were specified with respect to the objective based on relative modification of the model used by Assenga (2021) as presented in equation 3.1.

$$Yit = \alpha + B4FODIRit + \beta 1BSIZEit + \beta 2OUTSIDEit + \beta 3CEODit + B7FDEBTit + \beta 8FMSIZEit + \beta 9FMAGEit + \varepsilon it \ldots\ldots\ldots\ldots \quad (3.1)$$

Where: Y represents performance measures (ROA and ROE)
FODIR represents Foreign Directors
BOUTSIDE represents outside directors
BSIZE represents Board size
FDEBT represents Firm debt
FMSIZE represents Firm size
FMAGE represents Firm age.

The current study made adjustment to Assenga, (2021) as follows:

$$Yit = \alpha + \beta_1(Gend)_1 + \beta_2(Ethd))_2 + \beta_3(EduD)_3 + \beta_4(FexD)_4 + \beta_5(CeoD)_5 + \varepsilon it\ldots\ldots \quad (3.2)$$

Specifically;

$$PROFITroa_{it} = \alpha + \beta_1(Gend)_1 + \beta_2(Ethd))_2 + \beta_3(EduD)_3 + \beta_4(FexD)_4 + \beta_5(CeoD)_5 + \varepsilon it \ldots\ldots\ldots\ldots \quad (3.3)$$

Y= dependent variable and represented by Profitability measured by return on assets (ROA) while independent variables are board diversity attributes
Gend represents gender diversity

Ethd represents ethnic diversity
EduD represents educational background diversity
FexD represents financial expertness diversity
CeoD represents CEO Duality

4. Results and Discussions

Descriptive statistics of board diversity attributes in selected consumer goods manufacturing firms in Nigeria

Table 1 showed the descriptive statistic of corporate board diversity attributes in selected consumer goods manufacturing firms in Nigeria. The CEO duality (CEOD) metric reflects whether the same individual holds both the CEO and board chair positions. The mean value of 14.93 suggests that CEO duality is common among the firms in the sample, indicating that a significant proportion of firms allow their CEOs to also serve as board chairs. This may point to a consolidation of power at the top, which can have both positive and negative effects on firm performance. The moderate variability, reflected by the standard deviation (10.79), and near-normal distribution (skewness of 0.27) indicate that CEO duality is neither excessively concentrated nor highly distributed across firms. However, the existence of firms with negative values (minimum of -14.90) suggests some companies avoid CEO duality, opting for a clear separation of powers.

Gender diversity (GEND) shows a relatively low mean of 1.11, indicating that the representation of women on boards is limited. This underrepresentation is a reflection of the broader gender inequality challenges within corporate leadership in Nigeria. The skewness of 1.52 and high kurtosis (7.17) suggest that most firms have very low gender diversity, with a few firms having significantly higher representation of women. The wide range (maximum of 3.56 and minimum of -0.51) implies that while some companies have made strides toward gender inclusion, others are still lagging behind. These findings highlight the need for more initiatives aimed at promoting gender diversity in corporate governance.

Ethnicity diversity (ETHD), with a mean of 1.30, indicates moderate representation of different ethnic groups on corporate boards. Given Nigeria's multi-ethnic composition, it is somewhat expected that firms would reflect this diversity to some extent. However, the skewness of 1.99 and high kurtosis (7.83) again reveal that most firms have low ethnic diversity, with a few exceptions. The wide range between the maximum (4.69) and minimum (-0.51) suggests that while some companies value ethnic diversity in their board composition, others are homogeneous in terms of ethnicity. This could limit the variety of perspectives and ideas in those firms, potentially stifling innovation and adaptability in a diverse market like Nigeria.

The financial expertise diversity (FEXT) metric, with a mean of 0.30, reveals that most boards have limited diversity in terms of financial expertise. The skewness of 2.62 and kurtosis of 13.01 show that a few firms have high levels of financial expertise diversity, while the majority do not. This could point to a lack of diverse financial backgrounds among board members, which may impact firms' ability to navigate complex financial challenges.

Educational background diversity (EDUD) shows a mean of 1.35, indicating moderate diversity in the educational qualifications of board members. Educational diversity is essential as it brings a variety of knowledge and skills to the boardroom, which can improve strategic decision-making. However, like other diversity attributes, the skewness (1.96) and high kurtosis (7.66) suggest that most firms have lower educational diversity, with a few firms having boards composed of members with diverse educational backgrounds. This concentration around low values could be a disadvantage in industries that require a broad range of knowledge and expertise to keep pace with global trends and challenges.

The wide range of values across all diversity attributes, particularly the maximum and minimum values, shows that some firms in the foods and beverages manufacturing sector have made significant strides in fostering board diversity, while others have remained relatively homogeneous. This disparity could influence the competitiveness of firms, as diverse boards tend to be more innovative and better equipped to understand and respond to diverse customer needs. Firms with lower diversity may struggle to connect with the diverse Nigerian market, limiting their profitability and growth potential. Moreover, the high skewness and kurtosis values across most diversity attributes, except for CEO duality, indicate that the distributions are heavily skewed, with a concentration of firms having low diversity levels. The deviation from normality, as confirmed by the Jarque-Bera test, implies that these attributes do not follow a normal distribution and that there are significant outliers, particularly for gender, ethnicity, financial expertise, and educational diversity. The descriptive analysis reveals a lack of uniformity in board diversity across selected consumer goods manufacturing firms in Nigeria.

Table 1: Descriptive analysis of the board diversity attributes in selected consumer goods manufacturing firms in Nigeria

	CEOD	GEND	ETHD	FEXT	EDUD
Mean	14.93007	1.108542	1.299595	0.299020	1.346113
Median	12.24915	0.967150	1.045950	0.130200	1.143850
Maximum	41.98870	3.559700	4.689800	4.432400	4.689800
Minimum	-14.89640	-0.508000	-0.508000	-1.767400	-0.508000
Std. Dev.	10.79749	0.547911	0.771974	0.760977	0.787501
Skewness	0.269190	1.524623	1.988405	2.622337	1.955297
Kurtosis	2.359911	7.173822	7.835178	13.01491	7.664097
Jarque-Bera	3.789323	144.7262	212.3006	692.2770	200.6687
Probability	0.150369	0.000000	0.000000	0.000000	0.000000
Sum	1940.909	144.1105	168.9474	38.87256	174.9947
Sum Sq. Dev.	15039.58	38.72659	76.87683	74.70200	80.00030
Observations	130	130	130	130	130

Source: Researcher's Computation, 2024

Pool regression analysis on the extent to which board diversity affect profitability of selected consumer goods manufacturing firms in Nigeria

The pooled regression analysis provides insights into the relationship between board diversity and profitability, measured by the return on assets (ROA), for selected consumer goods manufacturing firms in Nigeria. From Table 2 each board diversity variable is examined to see how it contributes to profitability. The constant term (C) is 0.861080 with a highly significant p-value of 0.0000, indicating that when all board diversity attributes are held constant, the average profitability (ROA) of the firms is approximately 86.1%. This high intercept suggests that even without considering board diversity, the firms are quite profitable. The coefficient for CEO duality (CEOD) is 0.001765, and its p-value is 0.0253, which is statistically significant at the 5% level. This means that CEO duality has a positive and significant impact on profitability. For each unit increase in CEO duality, profitability increases by 0.18%. This supports the notion that when the roles of CEO and board chair are combined, it can positively influence firm performance due to more centralized leadership and decision-making efficiency, consistent with the results from prior studies like Boyd (1995). The positive and significant relationship between CEO duality and profitability (coefficient = 0.001765, $p = 0.0253$) suggests that combining the roles of CEO and board chair enhances firm performance. This finding aligns with the agency theory, which argues that CEO duality provides unified leadership, potentially reducing conflicts and improving decision-making efficiency. Boyd (1995) similarly found that firms with CEO duality perform better, particularly in situations requiring strong leadership. However, other studies, such as Brickley, Coles, and Jarrell (1997), caution that CEO duality may lead to entrenchment and a lack of oversight, but in this context, the benefits of central leadership appear to outweigh such risks.

The coefficient for gender diversity is -0.013532, and it has a p-value of 0.3797, making it statistically insignificant. This implies that gender diversity does not have a significant influence on profitability in the listed foods and beverages firms. Although gender diversity may bring diverse perspectives, in this case, its contribution to profitability is neither positive nor significant. This aligns with some studies, such as Adams and Ferreira (2009), which argue that the effect of gender diversity on firm performance is context-specific. However, studies like Ahern and Dittmar (2012) found that forced gender diversity mandates in Norway led to short-term declines in profitability, reflecting that diversity's impact is highly context-specific

The coefficient for ethnicity diversity is -0.034609, with a p-value of 0.0018, making it statistically significant at the 1% level. This negative relationship suggests that higher ethnicity diversity is associated with a decrease in profitability. For every unit increase in ethnicity diversity, profitability decreases by 3.46%. This could indicate that managing ethnic diversity in these firms is challenging and might lead to conflicts or inefficiencies, thereby negatively impacting performance. This finding suggests that increasing ethnic diversity within boards may lead to challenges in coordination, communication, or decision-making, which can hinder profitability. Studies like Horwitz and Horwitz (2007) highlight that while diversity can bring fresh ideas and perspectives, it may also create friction if not properly managed, leading to inefficiencies.

The coefficient for financial expertise diversity is 0.000583, but its p-value is 0.9580, indicating that it is not statistically significant. This suggests that financial expertise diversity does not significantly influence profitability in these firms. While financial expertise is important for board effectiveness, this result may indicate that a variety of financial expertise on the board does not necessarily translate into better financial performance, possibly due to conflicting perspectives or ineffective application of diverse knowledge. Studies like Krishnan and Parsons (2008) suggest that the influence of financial expertise on firm outcomes depends on how well the board can integrate and apply this expertise. The lack of significance here could indicate that financial experts on the board may not be fully aligned or are unable to translate their knowledge into improved firm outcomes.

The coefficient for educational background diversity is 0.010698, and it is statistically significant with a p-value of 0.0167. This suggests that educational diversity has a positive and significant effect on profitability. For each unit increase in educational diversity, profitability increases by 1.07%. This result aligns with the idea that diverse educational backgrounds contribute to better decision-making and problem-solving, which in turn can enhance firm performance. This finding is consistent with *Ruigrok et al.,* (2007), who argue that educational diversity contributes to better decision-making and problem-solving.The R-squared value is 0.725669, meaning that approximately 72.57% of the variation in profitability can be explained by the board diversity variables in the model. This is a relatively high R-squared, indicating that the model provides a good fit for the data. The adjusted R-squared is 0.690414, which adjusts for the number of predictors in the model and still shows that about 69.04% of the variance in profitability is accounted for by the diversity attributes. The overall high R-squared suggests that board diversity plays an important role in influencing profitability, but the direction and significance of these effects depend on the specific attribute being considered. These findings highlight the importance of a well-balanced and effectively managed board to enhance corporate performance in the Nigerian consumer goods sub- sector.

Table 2: Pool regression analysis on the extent to which board diversity affect profitability of selected consumer goods manufacturing firms in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.861080	0.028616	30.09045	0.0000
CEOD	0.001765	0.000779	2.264459	0.0253
GEND	-0.013532	0.015349	-0.881634	0.3797
ETHD	-0.034609	0.010870	-3.183777	0.0018
FEXT	0.000583	0.011028	0.052823	0.9580
EDUD	0.010698	0.010640	2.005406	0.0167

R-squared	0.725669	Mean dependent var	0.842030
Adjusted R-squared	0.690414	S.D. dependent var	0.099231
S.E. of regression	0.094638	Akaike info criterion	-1.832450
Sum squared resid	1.110599	Schwarz criterion	-1.700102
Log likelihood	125.1093	Hannan-Quinn criter.	-1.778673
F-statistic	3.564541	Durbin-Watson stat	0.607163
Prob(F-statistic)	0.004791		

Source: Researcher's Computation, 2024

5. Conclusion and Recommendations

Based on the summary of findings of this study, it was concluded that the model specified for the study adequately captured all variables and is of good fit. Also, Gender diversity, educational diversity ethnicity diversity, and financial expertise have significant effect on profitability of selected consumer goods manufacturing firms in Nigeria. Based on the findings from the studies, the following recommendations are proposed:

- Consumer goods manufacturing firms in Nigeria should undertake regular assessments to identify the current composition of their boards. This includes evaluating gender, ethnicity, educational background, financial expertise, and CEO duality

- Firms in should encourage and support initiatives aimed at increasing gender and educational diversity, as well as financial expertise on boards. This can include mentorship programs for women and underrepresented groups, scholarships, and partnerships with educational institutions that promote diverse talent pipelines for board positions.

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