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I. Title page
II. Abstract (150-250 words)
III. Keywords (3-5)
IV. Introduction
V. Literature Review
VI. Methodology
VII. Results and Discussion
VIII. Conclusion and Recommendations
IX. References (APA 7th Edition)
X. Appendices (if necessary)
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MODERATING EFFECT OF FREE CASH FLOW ON BOARD ATTRIBUTES AND VALUE OF LISTED CONSUMER GOODS FIRMS IN NIGERIA

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ABSTRACT

This study investigated the moderating effect of free cash flow on the relationship between board attributes and value of listed consumer goods firms in Nigeria. Using an ex-post facto research design, the study analyzed panel data from 18 firms over a ten-year period (2014–2023), focusing on board size, independence, and gender diversity, as well as the interaction of these factors with free cash flow. Panel dynamic regression was adopted has a technique. The results indicate that while board size, independence, and gender diversity alone do not significantly impact market value, free cash flow significantly moderates these relationships. Specifically, the study finds that the interaction between board size and free cash flow has a negative impact on market value. Conversely, board independence combined with free cash flow positively influences market value. Based on these results, the study recommends that regulators consider mandating higher proportions of independent directors on boards to improve free cash flow management and align management actions with shareholder interests, thus enhancing firm value.

Keywords: Free Cash Flow, Board Attributes, Market Value, Independent Directors, Board size and Board gender diversity.

1.0 Introduction

In the dynamic landscape of the global economy, the market value of firms emerges as a paramount metric, providing profound insights into not only the performance of individual companies but also the broader economic health (Moro-Visconti, 2022). This fundamental concept serves as a cornerstone in the evaluation of publicly traded companies across diverse industries. Consequently, market value stands as a pivotal indicator, reflecting investor sentiment and confidence in a company's current performance as well as its future prospects.

The destruction of investor value due to accounting malpractice has far-reaching consequences, not only for individual firms but also for entire financial systems (Brada et al., 2022). The global financial crisis (GFC) of 2007–2008 stands as one of the most significant economic downturns in modern history, and its impact on market values was profound and wide-reaching (Kotabe & Helsen, 2022). Beyond the GFC, more recent accounting scandals have continued to erode trust in financial markets and have contributed to significant drops in market values. A notable example is the Wirecard scandal in 2020. Another recent case is the Stallion Group scandal, which involved the misreporting of financial performance, including inflation of assets and revenues. The Oando scandal, one of the most significant corporate governance and financial reporting failures in Nigeria, further highlighted the destructive consequences of financial misreporting (Securities and Exchange Commission [SEC], 2019). As a result of these factors, policymakers and regulators were compelled to take decisive action to stabilize capital markets globally, restore investor confidence, and mitigate future systemic risks (Siegel et al., 2021; Grosse et al., 2017).

Corporate governance reform emerged as a critical component of these efforts, aimed at enhancing transparency, accountability, and risk management practices within financial institutions and corporations. One key area of corporate governance

reform focused on improving board oversight and accountability. The Nigerian Code of Corporate Governance (NCCG, 2018) for listed companies considers the role of the board of directors as an important mechanism for governance, which protects investors' interests (Fama & Jensen, 1983; Puni & Anlesinya, 2020). Characteristics of the board, namely board size, board independence, and gender diversity, are critical for ensuring effective corporate governance, which can have a significant impact on market value (Martinez-Jimenez et al., 2022; Alshirah et al., 2017).

Board size refers to the number of directors on the board, and research suggests that it plays a significant role in corporate governance (Lawal & Yahaya, 2024). A larger board may offer diverse perspectives, expertise, and a broad network, which can contribute to more effective decision-making and better corporate performance (Coulson-Thomas et al., 2023). However, excessive board size may lead to inefficiency, slower decision-making, and challenges in coordination (Al-Hiyari et al., 2024).

Board independence is another key characteristic that affects corporate governance. Independent directors, who do not have material relationships with the company's management or major shareholders, are believed to provide an unbiased perspective in decision-making and oversight (Baysinger & Butler, 2019). Their primary role is to protect the interests of shareholders and ensure that management decisions align with shareholder interests (Mrabure & Abhulimhen-Iyoha, 2020). The presence of independent directors is often associated with more transparent financial reporting, better risk management, and stronger monitoring of management, all of which can improve a company's reputation and market value (Saona et al., 2020).

Gender diversity on boards is an increasingly important aspect of corporate governance. Diverse boards, which include a higher proportion of women, are often seen as having a broader range of perspectives, which can enhance decision-making and problem-solving capabilities. Studies have found that companies with a greater representation of women on their boards tend to have improved financial performance and higher market valuations (Abou-El-Sood, 2019).

The notion of free cash flow (FCF) as a moderating variable is particularly relevant in understanding the dynamics of corporate governance and its impact on firm performance (Renaldo et al., 2023). FCF can either enhance or hinder the effectiveness of corporate governance mechanisms depending on the context and how it is managed by the firm. The concept of FCF, particularly as discussed by Okofo-Dartey et al. (2021), suggests that when firms generate excessive cash that is not required for profitable investments, there is a tendency for management to engage in wasteful or suboptimal investment decisions. This “wasted” cash flow, if not properly monitored, can lead to inefficiencies and undermine the firm's value. Effective corporate governance, through board oversight and mechanisms such as independent directors, can mitigate such risks and enhance the firm's market value (Sari, 2023).

FCF can exacerbate agency problems, particularly in firms where managers have significant discretion over cash allocation (Kargi & Zakariya, 2021). In such firms, corporate governance mechanisms that align management's interests with those of shareholders, such as independent boards or diverse boards that bring various perspectives, become crucial for managing cash effectively and ensuring that it is invested in value-creating activities (Ozdemir et al., 2023). Therefore, in firms with abundant FCF, the need for strong governance is heightened, and the positive relationship between corporate governance and market value is likely to be stronger. Given the distinctive corporate governance landscape in Nigeria, understanding the role of free cash flow in board dynamics is crucial for improving market valuation and investor confidence.

In the Nigerian context, several studies have been carried out with inconclusive findings regarding the relationship between board characteristics and market value (Magai et al., 2024; Usman & Yahaya, 2023; Ajukwara et al., 2022). Despite their contributions, these studies have not provided clear insights into the relationship between board attributes and market value in Nigeria. A notable aspect that has been overlooked in most of these studies is the potential moderating role of FCF. This study seeks to address the literature gap by incorporating FCF as a moderating variable. This approach aims to provide a deeper understanding of the factors driving market valuation in emerging markets and inform strategies to enhance corporate governance practices and investor confidence.

2.0 Literature Review

Value

The concept of value in the context of corporate governance refers to a firm's capacity to create wealth for its stakeholders—including shareholders, employees, and customers—through effective management and efficient resource utilization (Björklund et al., 2022). The notion of value is intricately tied to various dimensions of a firm's performance, including financial performance, market valuation, and long-term sustainability. Scholars and practitioners have long debated the role of corporate governance mechanisms in driving value creation, identifying several key factors integral to understanding how firms enhance their market value.

Board Size

Board size is one of the most discussed elements in corporate governance. The relationship between board size and firm value has been widely researched, with mixed findings. Some studies suggest that larger boards may be more effective in providing diverse perspectives (Al-Shaer et al., 2024). Larger boards can offer a broader range of perspectives, skills, and expertise, which can lead to better decision-making and more comprehensive oversight (Baysinger & Butler, 2019). A diverse board may bring different viewpoints, allowing the firm to respond more effectively to challenges and opportunities, thus potentially enhancing firm performance and market value (Alshdaifat et al., 2024).

As board size increases, the ability to make decisions quickly and effectively can decrease (Pfeffer, 2019). Larger boards may suffer from coordination problems, with members potentially having conflicting views or struggling to reach consensus. This can lead to delays in decision-making and inefficiencies in managing the firm (Jensen, 1993). In very large boards, some members may not contribute as much as others, relying on the active participation of a smaller group of directors. This “free rider” problem can result in lower levels of oversight and reduced board effectiveness (Herdjiono & Sari, 2017). A lack of engagement can erode investor confidence and negatively impact the firm's market value.

Additionally, larger boards can incur higher operational costs, including greater compensation for directors and administrative costs for coordinating meetings and activities (Bijoy & Mangla, 2023). These costs may offset any potential benefits from increased expertise and oversight, potentially reducing the firm's profitability and market value (Chaudhary, 2020). Based on these mixed effects, we develop the following hypotheses:

$H0_1$: Board Size has no significant effect on value

Board Independence

Board independence is a critical aspect of corporate governance, playing a key role in ensuring effective oversight and accountability of management (Sari, 2023). Independent directors, typically those who do not have any material relationships with the firm, are often seen as a safeguard against potential agency problems (Wang, 2023). The relationship between board independence and firm value is an area of significant academic interest, as independent boards are believed to promote transparency, reduce conflicts of interest, and enhance decision-making, all of which can positively influence the market value of firms. Independent directors are less likely to have conflicts of interest compared to insider directors, enabling them to objectively monitor and evaluate the actions of management. This enhanced monitoring can reduce the likelihood of managerial misbehavior, fraud, and other forms of financial misconduct (Bonini et al., 2022). Effective oversight helps improve the credibility of financial reporting, boosting investor confidence and increasing firm value (Olie et al., 2024).

While independent directors can provide valuable external perspectives, they may lack the in-depth, firm-specific knowledge that insiders possess (Marra, 2021). This lack of knowledge may lead to poor decision-making in some cases, as independent directors may not fully understand the unique challenges and opportunities the firm faces, potentially harming firm performance and reducing market value (Mire, 2016). An overly independent board may sometimes result in inefficiencies due to the lack of a strong relationship between the board and the firm's management. If independent directors are too distant from daily operations, their oversight might become less effective, potentially leading to missed opportunities or delayed decision-making (Higgs, 2033). These inefficiencies could lower firm value if not managed properly. Given the mixed effects, the following hypothesis was developed:

$H0_2$: Board independence has no significant effect on value.

Board Gender Diversity

Board gender diversity refers to the inclusion of both male and female directors on the board of a company (Martinez-Jimenez et al., 2020). Diverse boards are believed to offer a variety of perspectives and experiences, which can improve decision-making processes. Female directors bring unique insights, particularly related to consumer behavior, risk management, and human resource policies, which may benefit companies in competitive and rapidly changing markets. Increased diversity has been shown to foster creativity and innovation, leading to better strategic decisions that can positively influence firm value (Fernández-Temprano & Tejerina-Gaite, 2023). Gender-diverse boards are thought to improve corporate governance practices, with a reduced likelihood of groupthink and more effective risk management (Kamalnath, 2021). Women on boards can bring attention to issues such as sustainability, ethics, and long-term shareholder value, which can help mitigate business risks. This enhanced governance, coupled with a more balanced decision-making process, can lead to improved financial performance and higher firm value (Reguera-Alvarado et al., 2017).

One potential downside of board gender diversity is the risk of tokenism, where female directors are appointed not for their skills and expertise but merely to fulfill diversity quotas (Rixom, 2017). This could undermine the overall effectiveness of the board and the potential value gained from gender diversity

(Kang et al., 2007). While diversity can lead to better decision-making, it can also introduce conflicts within the boardroom, especially if different perspectives are not managed effectively. Gender-diverse boards may experience more tension or disagreements due to varying viewpoints and communication styles. If not handled well, these conflicts could undermine board cohesion and decision-making effectiveness, potentially harming firm performance and, consequently, firm value (Hamplová, 2017). Increasing gender diversity on corporate boards may require firms to invest in diversity initiatives, training programs, and recruitment processes. These costs, though potentially valuable in the long run, can be burdensome in the short term. For companies facing financial constraints, these expenditures could negatively impact their profitability and overall firm value, particularly if the expected benefits from diversity are not realized quickly (Tessaro, 2021). While gender diversity is often linked to enhanced decision-making, some studies reveal the risk of tokenism, where diversity quotas may not translate to effective governance (Rixom, 2017; Kang et al., 2007).

Given the above analysis, the following hypothesis was developed:

H0₃: Board gender diversity has no significant effect on firm value.

Free Cash Flow

Free cash flow (FCF) refers to the cash a company generates after accounting for capital expenditures required to maintain or expand its asset base. It is an important measure of financial health, as it represents the cash available to be reinvested in the company, pay dividends, reduce debt, or repurchase shares (Hameed et al., 2024).

FCF can be seen as a double-edged sword. On one hand, it provides companies with the financial flexibility to undertake growth initiatives and investments. On the other hand, excessive free cash flow might lead to inefficiencies, overinvestment, or even managerial entrenchment, especially if the firm lacks strong governance mechanisms. Therefore, the availability of FCF can influence how board characteristics affect firm value, either enhancing or undermining the positive impacts of board attributes such as size, independence, or gender diversity. Larger boards may have a greater pool of resources and expertise to allocate and monitor the firm's free cash flow. However, when a company has substantial free cash flow, a larger board might become inefficient, leading to decision-making delays and potential agency problems. In contrast, smaller boards may be more agile and focused in managing free cash flow, potentially enhancing firm value in high cash flow situations (Zhang, 2024).

Independent directors are expected to monitor management effectively, ensuring that free cash flow is used efficiently and for the firm's long-term benefit (Susanto et al., 2017). When there is an abundance of free cash flow, independent directors are better positioned to prevent the potential misuse of resources, such as overinvestment or entrenchment, which could harm firm value. Therefore, the presence of independent directors may strengthen the positive relationship between FCF and firm value (Nekhili et al., 2016). Gender-diverse boards may bring varied perspectives on financial decisions, particularly in managing free cash flow. While gender-diverse boards are associated with improved decision-making, there may be challenges in integrating diverse viewpoints into firm strategies, particularly when there is a large amount of free cash flow to allocate. Therefore, free cash flow could influence the ability of gender-diverse boards to effectively manage firm resources and make value-enhancing decisions. Given the conceptual framework described above, the following hypothesis was developed:

H0₄: Free cash flow does not significantly moderate board attributes and value.

Agency Theory

Jensen and Meckling (1976) introduced Agency Theory, describing the principal-agent relationship wherein shareholders (principals) delegate decision-making authority to managers (agents). This delegation can lead to conflicts of interest, as managers may prioritize their interests over those of shareholders. According to agency theory, the separation of ownership and control can result in conflicts, particularly as managers may pursue personal gains at the expense of shareholders, especially when substantial free cash flow is available. Board attributes such as size, independence, and gender diversity can mitigate these agency conflicts by ensuring effective oversight and aligning managerial actions with shareholder interests. Agency theory posits that the presence of free cash flow increases the need for strong governance to prevent managerial misuse of resources, amplifying the importance of independent, diverse, and appropriately sized boards.

3.0 Methodology

This study employed an ex-post facto research design, which is particularly suitable as it allows for the examination of historical data to understand the moderating effect of free cash flow on the relationship between board characteristics and market value. The population of this study comprises all 21 listed consumer goods firms on the Nigerian Exchange Group (NGX) as of 2023, including BUA Foods, Cadbury Nigeria, Champion Breweries, Dangote Sugar Refinery, DN Tyre & Rubber, Flour Mills

Nigeria, Golden Guinea Breweries, Guinness Nigeria, Honeywell Flour Mill, International Breweries, McNichols, Multi-Trex Integrated Foods, Nigeria Flour Mills, NASCON, Nestlé Nigeria, Nigerian Breweries, Enamelware, PZ Cussons Nigeria, Union Dicon Salt, and Vitafoam Nigeria.

To select the sample, a filtering criterion was employed based on the following conditions:

1. Firms must not have been delisted during the study period (2014 to 2023).
2. Availability of complete data: Firms must have all the necessary data required to measure the variables within the period from 2014 to 2023.

After applying these criteria, DN Tyre & Rubber PLC, Unilever Nigeria, Multi-Trex Integrated Foods PLC, and BUA Foods PLC were excluded due to incomplete data, resulting in a final sample of 18 consumer goods firms.

The data utilized in this study were exclusively derived from secondary sources, specifically panel data, to examine the relationship between the study variables. Secondary data were deemed appropriate for this quantitative research study as it aimed to analyze historical data to determine the after-effects of various factors. By utilizing existing data from annual reports and financial statements, the study assessed the impact of independent variables on the dependent variable.

The study employed dynamic panel regression as a data analysis technique. Dynamic panel regression models include lagged dependent variables among the regressors to capture the dynamic nature of the data. This method is particularly suited to account for endogeneity issues and provide a deeper understanding of how past values of firm performance contribute to current market value in the presence of board and cash flow factors.

The model specification and measurements were based on established econometric practices. The basic panel econometric model is given by:

$$VAL_{it}=\alpha+\beta 1VAL_{it}-1+\beta 2BS_{it}+\beta 3BI_{it}+\beta 4BGD_{it}+\beta 5FCF_{it}+\beta 6BS\times FCF_{it}+\beta 7BI\times FCF_{it}+\beta 8BGD\times FCF_{it}+\epsilon_{it}$$

Where:

VAL= Value of firm i at time t

β0= Intercept

VALit−1: Lagged firm value for capturing dynamic effects.

BSit: Board size for firm i at time t

BIit: Board independence,

BGDit: Board gender diversity,

FCFit: Free cash flow for firm i at time

Table 3.1

Measurement of variables

s/n	Variables	Variables measurement	Source
1	MV Dependent Variable	Market Value of Equity - Total Invested Capital.	Behera (2020); Damodaran. (2024).
2	BS Independent Variable	Measured by the total number of directors on the company's board.	Pfeffer (2019); Attia, et al 2022
3	BI Independent Variable	Measured by the proportion of independent directors to the total number of board members.	Cavaco et al. (2015); Khosa, et al. (2017)
4	BGD independent Variable	Ratio of female directors to total board members.	Deschenes et al. (2015); Kuo and Yu, 2014
5	FCF Moderator Variable	Measured by the cash flow from operating activities minus capital expenditures.	Nasrulloh et al. 2024; Bahrun et al. (2020)

Researcher's computation, 2024

This study's methodology provides a comprehensive approach to understanding the interaction between board attributes and firm value while incorporating free cash flow as a moderating variable to reveal deeper insights into corporate governance practice in Nigeria's consumer goods sector.

4.0 Result and Discussion

In this section results are presented and discussed in the light of the research findings. First, a set of descriptive statistics are presented, then followed by the regression results.The correlation matrix reveals

Variable	Obs	Mean	Std. dev.	Min	Max
val	180	3.584056	2.289015	-6.23	9.94
bs	180	10.26111	2.658104	6	15
bi	180	.2329233	.1164791	.0666667	.4444444
bgd	180	.1525353	.1487326	0	.5555556
fcf	180	2.748611	4.333807	-25.43	20.76
bs_fsf	180	27.88873	41.78527	-203.4653	166.0404
bi_fcf	180	.6419104	1.294534	-8.980795	7.783142
bgd_fcf	180	.4583047	1.360656	-9.537438	10.37752

Source: Descriptive Statistics Result using STATA 17

The mean value of VAL is 3.584, indicating that, on average, the firms in the study have created value for their shareholders beyond the capital initially invested. The standard deviation of 2.289 indicates considerable variability in the performance of the firms, with some creating significant value and others potentially destroying value. The minimum value of -6.23 indicates that there are some firms in the sample that have destroyed valueConversely, the maximum value of 9.94 indicates that other firms have created substantial value, reflecting highly positive financial performance relative to their capital base.

The mean value of Board Size (BS) is 10.261, with a standard deviation of 2.658. This suggests that, on average, the firms in the sample have boards consisting of approximately 10 members, with a moderate level of variation. The minimum value of 6 and the maximum value of 15 indicate that board sizes vary across firms, with some firms having smaller boards, while others have larger boards.

The mean value of Board Independence (BI) is 0.2329, with a standard deviation of 0.1165. This indicates that, on average, about 23% of the board members in the sample are independent directors. The minimum value of 0.0667 suggests that some firms have a very low proportion of independent directors, while the maximum value of 0.4444 indicates that some firms have nearly half of their board members as independent directors.

The mean value of Board Gender Diversity (BGD) is 0.1525, with a standard deviation of 0.1487. This means that, on average, about 15.25% of board members in the firms are women. The minimum value of 0 indicates that some firms have no female directors, while the maximum value of 0.5556 indicates that some firms have a substantial proportion of female board members.

The mean value of Free Cash Flow (FCF) is 2.7486, with a standard deviation of 4.3338. This indicates that, on average, the firms have a positive level of free cash flow, suggesting they generate enough cash to cover their operating expenses and make investments.

	val	bs	bi	bgd	bs_fsf	bi_fcf	bgd_fcf
val	1.0000						
bs	-0.1895	1.0000					
bi	0.2444	-0.5631	1.0000				
bgd	-0.1095	0.0518	-0.0469	1.0000			
bs_fsf	-0.0996	0.1640	-0.1076	0.0735	1.0000		
bi_fcf	0.0578	-0.1787	0.2088	0.0853	0.7504	1.0000	
bgd_fcf	-0.0644	0.0016	0.0475	0.4202	0.7086	0.6824	1.0000

Source: Output of data analysis using stata 17

several important relationships between the variables in the study. First, there is a weak negative correlation between Value and Board Size (BS) (-0.1895), indicating that larger boards may be associated with slightly lower value. In contrast, Board Independence (BI) shows a positive correlation with VAL (0.2444), suggesting that a higher proportion of independent directors on the board may contribute to an increase in market value, albeit weakly. Additionally, Board Gender Diversity (BGD) is negatively correlated with VAL (-0.1095), suggesting a slight inverse relationship between the proportion of female directors on the board and the market value.

Table 4.3

Summary of dynamic panel Regression Result

Number of instruments = 43   Wald chi2(7) = 34.55   Prob > chi2 = 0.0000

One-step results

(Std. err. adjusted for clustering on id)

val	Coefficient	Robust std. err.	z	P>|z|	[95% conf. interval]	
val L1.	.2254402	.1526403	1.48	0.140	-.0737293	.5246096
bs	.5123252	.8759732	0.58	0.559	-1.204551	2.229201
bi	.3017208	2.272882	0.13	0.894	-4.153046	4.756487
bgd	.2113335	2.388808	0.09	0.930	-4.470643	4.89331
bs_fsf	-.0144262	.003705	-3.89	0.000	-.0216878	-.0071646
bi_fcf	.5758096	.2074677	2.78	0.006	.1691803	.9824388
bgd_fcf	-.1882552	.1422149	-1.32	0.186	-.4669914	.090481
_cons	-2.519009	9.003994	-0.28	0.780	-20.16651	15.12849

Source: Output of data analysis using stata 17

The one-step regression results provide several insights into the relationships between board characteristics, free cash flow (FCF), and market value (VAL) of firms. The lagged value of market value (L1) has a positive coefficient (0.2254), indicating a weak positive relationship between past and current market value, but it is not statistically significant (p = 0.140), suggesting that this effect is not robust. The Wald chi-squared statistic of 34.55 with a corresponding p-value of 0.0000 indicates that the overall model is statistically significant. This suggests that at least one of the predictors in the model (board size, board independence, board gender diversity, and their interactions with free cash flow) significantly affects the dependent variable,

Board size (bs) and board independence (bi) both show positive coefficients (0.5123 and 0.3017, respectively) but are not statistically significant (p = 0.559 and p = 0.894), implying that these board characteristics alone do not have a significant impact on market value in this context. Similarly, the coefficient for board gender diversity (bgd) is positive (0.2113), but it is also not statistically significant (p = 0.930), indicating that gender diversity does not strongly influence market value in this study. This finding contradicts the argument of Jensen and Meckling (1976) and Fama and Jensen (1983) in agency theory, which suggests that larger boards and boards with more independent directors can help reduce agency costs by improving oversight and aligning the interests of management with those of shareholders. Similarly, the lack of significance for board gender diversity (bgd), despite its positive coefficient, challenges the view that gender-diverse boards improve decision-making and corporate performance by bringing diverse perspectives, as suggested by Adams and Ferreira (2009).

However, the interaction between board size and free cash flow (bs_fsf) has a significant negative coefficient (-0.0144, p = 0.000), suggesting that the relationship between board size and market value becomes negative when free cash flow is high. This could indicate inefficiencies in decision-making on larger boards when free cash flow is abundant. This finding aligns with Jensen's (1986) free cash flow hypothesis, which argues that when firms accumulate excessive free cash flow, it can lead to inefficiencies and suboptimal decision-making. In larger boards, there may be more coordination and communication challenges, which can exacerbate these inefficiencies. On the other hand, the interaction between board independence and free cash flow (bi_fcf) shows a

positive and statistically significant coefficient (0.5758, p = 0.006), implying that independent directors help to manage free cash flow more effectively, thereby enhancing market value. This finding supports the view that independent directors, by virtue of their external perspective and impartiality, are better positioned to oversee and control the use of free cash flow, reducing agency costs and ensuring that resources are allocated in ways that benefit shareholders. The presence of independent directors may increase the quality of decision-making by mitigating conflicts of interest, which is consistent with Fama and Jensen's (1983) agency theory, which emphasizes the importance of independent monitoring to reduce managerial opportunism. Independent directors are generally more likely to implement stringent financial controls and make decisions that align with shareholders' interests, which can lead to improved financial performance and, ultimately, a higher market value. These results reinforce agency theory by demonstrating that board independence plays a pivotal role in curbing agency costs, especially in contexts of high free cash flow (Jensen & Meckling, 1976).

Lastly, the interaction between board gender diversity and free cash flow (bgd_fcf) is negative (-0.1883) but not statistically significant (p = 0.186), suggesting a potential but weak relationship between these variables and market value. This finding implies that while gender-diverse boards may bring different perspectives to decision-making, their impact on the effective management of free cash flow may not be as strong as that of independent directors. It could be that gender diversity, while important for overall board dynamics, does not directly influence the management of excess cash in the same way that independent directors do.

5.0 Conclusion and Recommendations

This study explored the relationship between board attributes such as board size, board independence, and board gender diversity and market value, with a focus on the moderating effect of free cash flow. The results indicate that while board size, board independence, and board gender diversity show positive associations with market value, these relationships are not statistically significant be the moderation. This finding challenges the expectations of agency theory, which posits that larger boards and boards with more independent directors help reduce agency costs and improve firm performance. Additionally, board gender diversity did not demonstrate a strong impact on market value.

However, the interaction between board attributes and free cash flow revealed more meaningful insights. Specifically, the negative relationship between board size and market value in the presence of high free cash flow suggests inefficiencies in decision-making on larger boards. Conversely, board independence positively influenced the management of free cash flow, enhancing market value, highlighting the importance of independent directors in reducing agency costs and improving firm performance. Gender diversity, while important for board dynamics, did not significantly impact the management of free cash flow or market value.

Moreover, the study highlights the importance of independent directors in managing free cash flow to improve market value, while other board characteristics like size and gender diversity may not play as significant a role.

Recommendations

Based on the conclusions, several policy recommendations were made to enhance corporate governance and improve market value:

Regulators should consider policies that require a greater presence of independent directors on boards, as the findings indicate that independent directors are instrumental in managing free cash flow effectively and aligning management's goals with those of shareholders, ultimately boosting market value.

The study suggests that larger boards may face coordination and communication challenges, particularly when there is abundant free cash flow. Therefore, firms should reconsider the optimal board size. Policy guidelines could focus on establishing best practices for board composition to optimize effectiveness.

While the study did not find significant effects of board gender diversity on market value, However, policies should focus on ensuring that gender diversity is balanced with other factors, such as expertise and independence, to enhance overall board effectiveness. Policy guidelines should address best practices for maintaining board efficiency and diversity, with an emphasis on balancing gender representation with relevant expertise and independence.

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