

## CEO OWNERSHIP AND FINANCIAL DISTRESS RISK: ALTMAN Z-SCORE APPROACH

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### Abstract

The study investigated CEO ownership and financial distress risk by employing samples from listed consumer goods firms in Nigeria from 2012 to 2021. *The ex-post facto* design was employed, CEO ownership is the explanatory variable while financial distress risk measured in terms of the Altman Z-score Model is the dependent variable. All the 20 consumer goods firms listed on the floor of the Nigerian Exchange Limited (NGX) as at December 31<sup>st</sup>, 2021 is the population of the study. 16 firms were selected as samples based on the purposive sampling technique. The robust regression technique was employed to test the hypotheses of the study. Findings revealed that CEO ownership has a significant positive effect on financial distress risk (Altman Z-score). This study specifically recommends that the management of consumer goods firms in Nigeria should endeavour to improve CEO shareholding percentage since increased CEO ownership entails quicker decision-taking thereby decreasing financial distress risk.

**Keywords:** CEO Ownership, Financial Distress Risk, Altman Z-score

### 1.0 Introduction

The upper management of a company is comprised of different influential people whose main goal is to ensure the company's longevity and prosperity and do their utmost to achieve this. According to the Nigerian Code of Governance of 2018, upper management often consists of a Chief Executive Officer (CEO), Chief Financial Officer (CFO), Chief Operating Officer (COO), and Chief Strategy Officer (CSO), and are appointed/recruited by the board of directors to run a company on behalf of its shareholders. The occupants of these positions are responsible for running different aspects of a company's day-to-day activities, as well as the implementation of long-term strategic goals. All the lower management staff (managers and Heads of Department) have the responsibility of reporting to the CEO, who has, as the name implies, executive power for decision-making. The CEO is ultimately responsible for all aspects of the company and making the strategic choices that will determine the future and success of the business.

CEO ownership implies the proportion of shares held by the CEO of the firm at the end of the financial year. This comprises direct and indirect shareholding of the CEO. CEO ownership is recognized as one of the good sources of power both in theory and in practice (Finkelstein, 1992; Bhabra & Eissa, 2017). The major determinant of the agent-principal relationship in the agency theory is the ownership of the company. Srivastav and Hagendorff (2016) established that CEO ownership in a company has a connection with some important board decisions such as selections, determination of the members' remunerations, and many other decisions. However, power is one of the controversial and difficult terms to define in the literature on management behaviours and sciences (Emerson, 1962). In another term, Salancik and Pfeffer (1977) described power as the right or ability to control people, things, or their behaviours.

Considering power on the corporate board, Haleblian and Finkelstein (1993) defined CEO Powers as the ability of the CEO to overcome resistance and consistently influence key decisions within a firm. Adams, Almeida, and Ferreira (2005) described powerful CEOs as a manager who can consistently influence key decisions in their firms, despite potential opposition from other executives.

Therefore, the financial distress of a company can be reflective of the CEO's attributes (GrusuwmyNidu, 2015). Ojeka, Adegboye, and Dahunsi (2021) alluded to the fact that the CEO's position is prime to the determinant of firm performance. The CEO who is also the team leader exercises critical strategic control, monitoring, and decision-making attributes (Barno, 2017). The CEO monitors from an agency perspective and often requires a diversity of skills for effective company management. The occurrence of financial distress weakens managerial power, as financial distress introduces interference and scrutiny by other stakeholders who act in such a manner in a bid to know/advise strategic steps in reversing the performance (Barno, 2017). Gathaiya (2017) analysed issues affecting collapsed firms in Kenya from 2015 to 2016 and concluded that the major contributors to financial distress in most firms relate to insider lending, weak corporate governance practices, weaknesses in regulating and supervising bodies, risk management strategies, ineffective internal control systems and conflict of interest. All those contributors point to the leadership of the institutions 'who is the CEO'.

The role of the CEO then becomes critical if the occurrence of financial distress must be curbed. Barno, (2017) asserted that CEOs have the overall mandate on the firms they have been appointed to provide leadership. Although organizations exist to achieve goals, there is a belief that management essentially entails the application of acquired skills in systems suggesting that CEOs have a greater role in a firm financial performance (Kumar, 2015). Zheng, Sarker, and Nahar (2018) maintained that it is critical for regulators to check financial health to safeguard against failure. According to Jahur and Quadir (2012), the roots of financial distress and corporate failure are often a complex mixture of complications and indicators that need to be addressed. Based on the foregoing, this study examines the effect of CEO ownership on the financial distress risk of non-financial firms in Nigeria. As an extension of prior studies of Ojeka, Adegboye & Dahunsi, 2021; Akbarian, Rostamy, Rezaei, & Abdi, 2019; Zheng, Sarker, & Nahar, 2018; Sameera & Wijesena, 2018; Abobakr & Elgiziry, 2017; Amos, Sharon, & Anita, 2016; Bourakba, & Zerargui, 2015; and Zemzem & Kacem, 2014. Besides, this study measured financial distress risk using the Altman Z-score Model. Contrary to previous studies that employed the OLS regression technique as their methodology, this study employed a panel regression technique to control for the heterogeneity effect present in the firms and fiscal years.

## **2.0 Literature and Conceptual Review**

### **Financial Distress Risk**

The financial risks related to the financial operation of a business may take many different forms. Such as market risks which are determined by the changes in commodities, stocks, and other financial instruments prices, foreign exchange risks, interest rate risks, credit risks, financing risks, liquidity risks, cash flow risks, and bankruptcy risks. These financial risks are not necessarily independent of each other, the interdependence has to be taken cognizance of when managers are designing risk management systems (Woods & Dowd, 2008). The risks on firms would vary as a result of their diverse characteristics such as firm sector/activity, the firm size, and international firm transactions to mention a few. Financial distress risk continues to gain considerable attention among academics, analysts, and stakeholders of firms (Wang & Li, 2007). In an attempt to explain financial distress, Outecheva (2007) submitted that financial distress may be associated with declined performance, failure, liquidation, and credit defaulting. Outecheva (2007) further adds that deterioration and failure affect the level of

profitability. While indebtedness and default are rooted in liquidity. Outecheva (2007) posits that financial distress is characterized by an abrupt decline in overall firm performance. Deterioration in firm performance commences with a momentous drop in profitability, sales, income, and adverse stock returns (Molina & Preve, 2012; Outecheva, 2007) operating losses, dividend reduction, branch closure, the increased trend of Non-Performing Loans, volatility of Return on Assets and Return on Equity (Mostofa, Rezina, & Hasan, 2016). Outecheva (2007) asserts that the extent of financial distress and its consequence depends on the root cause of financial distress, the gravity of the adverse development, the effectiveness of counteractions, and the complexity of the management response.

### **CEO Ownership**

Adams, Almeida, and Ferreira (2005) described a powerful CEO as a manager who can consistently influence key decisions in their firms, despite potential opposition from other executives. The two definitions above are limited to only internal forces surrounding the manager. However, CEO ownership as a source of CEO power could be viewed from their ability to tackle both internal and external forces. A powerful CEO has a lot of control and influence over managers, directors, and the overall running of the affairs of the company (Baldenius, Melumad, & Meng, 2014). Haynes and Hillman (2010) stated that a less powerful CEO with a lower proportion of the company's share ownership would have less influence on the board during discussions or decision-making processes. They opined that this may not necessarily have a positive effect, since a very varied discussion increases the risk of inconclusive results. This statement by Haynes and Hillman (2010) implied that the effect of CEO ownership could either be positive or negative. As the CEO's influence over the board decisions increases so does the concentration of ownership and thus, power. Concentrating the power of decision-making means that one person, usually the CEO, possesses a lot of power and thus has a large influence on the board when it comes to the decision-making process. Based on this conceptual clarification of CEO ownership, we, therefore, include CEO ownership being a major source of power as a characteristic of the CEO under investigation in this study. Thus, for this study, the CEO ownership in percentage is computed as CEO shares to total outstanding shares.

### **Research Hypotheses**

#### **CEO Ownership and Firm Financial Distress Risk**

Ownership is recognized as one of the good sources of power both in theory and in practice (Finkelstein, 1992; Onali, Galiakhmetova, Molyneux, & Torluccio, 2016). The major determinant of the agent-principal relationship in agency theory is the ownership of the company. Unlike the case of an agency relationship, the CEO who acquires a good proportion of company shareholding will be an agent cum-principal officer which gives him a good ground to influence almost every activity in the organization (Mio, Fasan, & Ros, 2016). When the CEO has significant stock ownership, they can influence the selection of other directors, hence giving him an edge over other members of the board. Having significant ownership will enable the CEO to influence the determination of the remuneration of members of the board, scuffling their dismissal if the need is and dominating most of the Board decisions (Zhang, Tang, & Lin, 2016). Hence, the greater the ratio of the CEO's equity ownership, the better in terms of the bankruptcy safety of the company as the CEO would take legally possible steps to safeguard the general economic interests of the entire shareholders.

It is being argued that concentrating power in decision-making usually entails quicker decisions. However, they noted that the quality of decisions could suffer if the decisions are rushed (Han et al., 2016) implying that the risk of financial distress may increase. The effect

of CEO ownership concentration is, however, according to Han et al. (2016) somewhat dependent on industry characteristics and the effect is thus not always negative. Contrary to Han et al. (2016), Combs et al. (2007) argued that ownership concentration to the CEO can be beneficial for the firm, and thus beneficial for firm performance. Quicker decision-making leads to a faster response time which could be beneficial for the firm in reducing the risk of financial distress. Combs et al. (2007) further stated that a powerful CEO can also provide the company with the benefits of a clear line of authority and “a focal point for external accountability” which are also argued to be good for the firm. CEO power can thus be seen as a double-edged sword based on the reasoning from Han et al. (2016) and Combs et al. (2007) as its characteristics may be both positive or negative for financial distress risk.

However, a commonly mentioned downside of CEOs becoming too powerful is in a situation when a firm’s shareholding is CEO-concentrated. Whereby he/she could deem the board’s arguments less important or less relevant because they possess inferior knowledge of the ongoing operations. This could lead to the CEO being neglected, ignored, or even not getting important advice from the board and senior managers. It has been proven that a group of intelligent people usually make better decisions than one single individual. In such a situation firm value and performance could be adversely affected by such a concentration of ownership and thus expose the firm to the risk of financial distress (Han, Kim & Yu, 2016). Daily and Johnson (1997) opined that increasing a CEO’s ownership could have the flipside effect whereby such a shareholder acquires discretion, which unfortunately he/she uses to go after personal objectives rather than objectives that are in line with the maximization of shareholder wealth. CEO power, when used in self-interest, increases the risk of CEO entrenchment (Han et al., 2016), which according to Li (2016) increases financial distress risk. Hence, we argue that based on prior empirical studies, CEO ownership can harm the firm performance and increase the risk of financial distress when used for self-interest, otherwise CEO ownership may improve performance and reduce the risk of financial distress since the CEO would do everything legally possible to safeguard the general economic interests of the entire shareholders. The study hypothesized as follows:

**H0: CEO ownership has no significant effect on the financial distress risk of listed non-finance firms in Nigeria.**

### **Theoretical Review**

This study is hinged on agency theory. The agency theory was advanced by Jensen and Meckling in 1976. According to Eisenhardt (1989), the agency theory describes the universal agency relationship, in which the principal gives work to the agent. Jensen and Meckling (1976), explained that in corporate organizations, agency theory involves a contract under which the shareholders engage the managers to perform certain services on their behalf, which includes delegating some decision-making authority to the managers. Agency theory assumes that managers are opportunists who would rather be self-satisfying than maximize profit for the shareholders (Eisenhardt, 1989). He however opines that shareholders require the specialized knowledge of managers to generate wealth for those businesses in which they have invested. From the agency theory perspective, a firm’s managers are responsible for conducting business in the interest of the firm, and a manager’s self-interests should align completely with the interests of the firm. Managers of a firm will sometimes experience conflicts of interest when conducting business on behalf of the firm (Bryant & Davis, 2012).

This is the fulcrum of the argument of agency theory which states that managers acting as agents are likely to pursue private objectives that deviate and even conflict with the goals of the shareholders if they are not monitored. Since there are perceived conflicts between the interests of the shareholders and management (Fama & Jensen, 1983), agency theory is

concerned with aligning the interests of shareholders and managers (Jensen & Meckling, 1976; Fama, 1980; Fama & Jensen, 1983). Consequently, firms must either increase the incentive structures that align the interests of shareholders and managers (Fama & Jensen, 1983) or increase the monitoring, control, and oversight of managers by instituting owner-principal delegates which are the board of directors (Bryant & Davis, 2012). Increasing the incentive alignment which is regarded as an internal governance mechanism involves two related components. First, the financial alignment created with outcome-based contracts, and share options, and second, the alignment of preferences and actions, whereby the management's preferences become more aligned with those of the shareholders.

The assumption here is that by managing the principal-agency problem between shareholders and managers, firms will operate more efficiently and perform better (Filatotchev, 2007) to avoid financial distress risk. If the firm is to survive and avoid financial distress, the shareholder-management relationship should reflect an efficient form of managing information and risk-bearing costs (Jensen & Meckling, 1976; Fama, 1980). Even though CEOs have formal authority over the institutions they manage, agency problem emanates from information asymmetry whereby management is better placed with information regarding the availability of funds and alternatives available to invest the funds (Burgaz, 1997). Though CEOs may be limited in their contracts, however, hold extensive rights which may lead to problems in corporate management (Fama & Jensen, 1983). Agency theory proposes that the alignment of the agent and principal interests should result in maximizing the interest of the shareholders. Corporate rules and regulations, however, assist in alleviating agency costs by streamlining management and shareholders' interests to avoid financial distress (Manini & Abdillahi, 2015). The theory prescribes that management led by their CEO should be answerable for their tasks, activities, and responsibilities (Abdullah & Valentine, 2009).

## **Empirical Review**

Sewpersadh (2017) studied the correlation between financial distress and corporate governance of 116 listed South African companies using the Generalized Method of Moments (GMM) estimation. Key financial distress determinants that may deter investor apathy, "director opportunism" and CEO dominance were found to be audit committees and shareholder activism (proxied by equity ownership). Also, long-tenured CEOs and post-graduate directors possess contextually enriched latent knowledge that may assist distressed firms, particularly if the trade-offs between director's remuneration and governance are well managed. The authors further noted that the K-score model served as a robust financial distress proxy since it allowed the interrogation of grey zone companies. Their findings provided financial distress determinants aiding decision-making for ailing businesses to avoid liquidation, which could be of use to regulatory bodies and policymakers in developing sustainable governance strategies.

Yasser, Rezazadeh, and Abd (2022) investigated the effect of the failure of corporate governance mechanisms on the financial distress of companies listed on the Iraqi stock exchange. Using an applied research methodology, the purpose of the study was to answer the question of what the effect of the failure of corporate governance mechanisms on the financial helplessness of companies is admitted to the Iraqi stock exchange. The authors noted that the research population consisted of all the companies that were listed on the Iraq Stock Exchange, while the sample was selected using a systematic sampling method and employing the combined data, the generalized least squares regression method was used to test the desired hypotheses. The findings showed that corporate governance has a significant effect on financial distress.

Sameera (2020) examined the impact of corporate governance practices on the corporate risk of listed companies in the Colombo Stock Exchange in Sri Lanka. The Board structure, Board

Independence, and Board procedures were considered independent variables, whereas the corporate risk was chosen as a dependent variable. The corporate risk represented the financial, operational, and market risks faced by the companies. The study further used data from a sample of 64 listed companies for 5 years from 2014 to 2018 and employed panel regression to uncover the relationship that exists between these variables. The independent sample t-test was used to test whether there was a statistically significant difference existing between the corporate governance practices of distressed and non-distress companies. The results show that the corporate governance practices of distressed companies were significantly lower than those of non-distressed companies. The findings of the regression results suggest that Board independence significantly and negatively impacted corporate risk. However, Board structure and Board procedures have no significant impact on corporate risk.

Handriani, Ghozali, and Hersugodo (2021) explored the most significant determinants of financial distress of manufacturing companies in Indonesia and attempted to provide explanations on the issue by using multiple regression models. Modigliani and Miller's Trade-off theories were reviewed to formulate a testable proposition on the determinants of financial distress of manufacturing companies in Indonesia. Multiple regression models were used as a statistical tool to investigate the most significant profitability determinants of manufacturing companies in Indonesia. The Lisrel software was used to analyse 300 manufacturing companies listed on the Indonesia Stock Exchange. It was found that institutional ownership, firm size, profitability, and board independence as variables had a positive relationship to avoid financial distress. Meanwhile, the board size variable had an insignificant positive relationship.

Zahra, Khan, and Warraich (2018) empirically tested whether various characteristics of the CEO have an impact on the corporate survival of firms in Pakistan. The authors noted that the corporate governance literature suggested that various characteristics of the CEO have an impact on various aspects of firm performance as a whole. Using Panel Feasible Generalized Least squares (FGLS) Regression and Panel Logistic Regression Analysis over a sample of 42 non-financial firms from the Karachi Stock Exchange (KSE-100 index) for the period 2009-2013, the result showed that CEO Ownership and Tenure are significant determinants of a firm's survival probability. The results suggested that a one-year rise in CEO tenure and a 1% rise in CEO Ownership may reduce the distress probability by 2% and 17%, respectively. The study also found that trade debt and interest coverage ability are also related to a firm's distress risk.

### **3.0 Methodology**

This study employed *ex post facto*, causal, and longitudinal research designs. The *ex-post facto* design is used since all the variables used are secondary data. The causal research design is necessary because the study sought to examine the cause-effect of CEO ownership and firm financial distress risk. Specifically, the study sought to provide evidence of the cause-effect of the independent variable on the dependent variable. Similarly, the longitudinal research design was employed for the study since the study sought to examine the effect of CEO ownership on firm financial distress of 20 listed non-financial firms in Nigeria from 2012 to 2021. The study utilized data obtained from a secondary source. The data were sourced from the related companies' annual financial reports for the periods as well as the Nigerian Exchange Limited Websites. The population of this study is all the consumer goods firms listed on the floor of the Nigerian Exchange Limited (NGX) as of December 31<sup>st</sup>, 2021. Specifically, as of 31<sup>st</sup> December 2021, there were 20 listed consumer goods firms in Nigeria. The sample size for this study consists of 16 listed consumer goods firms in Nigeria. These firms were selected based on the purposive sampling technique. The study used this technique since the firms were selected based on certain selection criteria which is basically the availability of their data due to the existence/age of the firm. The study conducted descriptive statistics to provide an

understanding of the data in terms of the mean, standard deviation, maximum, and minimum. Correlation analysis is also conducted to express the relationship between the independent and dependent variables employed in this study. However, to achieve the objective of the study, the panel fixed, and random effect regression were employed as specified by the model specification analysis. Based on the theoretical literature and earlier empirical studies, the present study adopted and modified the model of Rono (2018) to express the econometric form of the model is expressed as:

$$ASCO_{it} = \beta_0 + \beta_1 CEOO_{it} + \beta_3 RETA_{it} + \mu_{it}$$

**Where:**

ASCO	=	Altman Z-score
CEOO	=	CEO Ownership
RETA	=	Profitability (Return on Asset)
$\beta_0$	=	Constant
$\beta_1$ - $\beta_3$	=	Slope Coefficient
$\mu$	=	Stochastic disturbance
i	=	i <sup>th</sup> company
t	=	time

Following the studies of Rono (2018), we measure CEO ownership in percentage as CEO shares to total outstanding shares. Altman's 1968 model took the following form:  $Z = 1.2A + 1.4B + 3.3C + 0.6D + .999E$ . If  $Z < 2.675$ ; then the firm is classified as "failed" Where: A = Working Capital/Total Assets, B = Retained Earnings/Total Assets, C = Earnings before Interest and Taxes/Total Assets, D = Market Value of Equity/Book Value of Total Debt, E = Sales/Total Assets. In the case of the control variable of return on asset in percentage is computed as profit after tax divided by the Total asset in line with the studies of Akbarian, Rostamy, Rezaei, & Abdi (2019).

#### **4.0 Empirical Results and Discussion**

The study examines the effect of CEO ownership on financial distress risk by employing samples from listed consumer goods firms in Nigeria between the periods of 2012 and 2021. CEO ownership has been employed in this study as the explanatory variable while financial distress risk measured in terms of the Altman Z-score Model is the dependent variable. Specifically, to control the model's goodness of fit, the study employed the variable of profitability measured in terms of return on assets.

##### **Descriptive Statistics Analysis**

In this section, the study examines the descriptive statistics for both the explanatory and dependent variables of interest. Basically, each variable is examined in terms of the mean, standard deviation, maximum and minimum. Table 1 displays the descriptive statistics for the study.

**Table 1: Descriptive Statistics**

VARIABLES	MEAN	STAN. DEV.	MIN.	MAX.	NO OBS
ASCO	1.47	-0.99	-2.26	6.37	160
CEO	0.85	3.30	0	15.31	160
RETA	5.34	7.74	-19.66	26.49	160

**Source: Author (2023)**

Table 1 shows the descriptive statistics of this study. From the table, it is observed that the dependent variable financial distress risk when measured in terms of Altman Z-score (ASCO) has a mean of 1.47 and a standard deviation of 1.35. This result implies that on the average, the listed consumer goods firms under study are faced with financial distress risk during the period under study. This is in line with Altman (1968) who stated that the lower the z-score the higher the financial distress risk. In the case of the independent variable, the table shows the mean of CEO ownership, the result shows that the mean of CEO ownership (CEO) was 0.85 and a standard deviation of 3.30. The result implies that on average, during the period under study about 85% of the shareholding of the firms under study was held by the CEOs. Finally, in the case of the control variable, the study finds that the mean of profitability when measured in terms of return on asset (RETA) was 5.34 and a standard deviation of 7.74. This implies that overall, the under-study firms in Nigeria were profitable.

#### **4.2.1 Correlation Analysis**

In examining the association among the variables, the study employed the Pearson Correlation Coefficient (correlation matrix), and the results are presented in the table below.

**Table 2: Correlation analysis**

VARIABLES	ASCO	CEO	RETA
ASCO	<b>1.0000</b>		
CEO	<b>0.2976</b>	<b>1.0000</b>	
RETA	<b>0.7305</b>	<b>0.0566</b>	<b>1.0000</b>

**Author's computation (2023)**

In the case of the correlation between the independent variables and dependent variables of the study, the above results show that CEO ownership has a positive association with the dependent variable of financial distress when proxied in terms of Altman Z-score for the sample consumer goods firms in Nigeria (0.2976). The control variable of profitability as measured in terms of return on asset (0.7305) also has a positive association with the dependent variable of financial distress risk when proxied in terms of Altman Z-score.

#### **Regression Analyses**

Specifically, to examine the cause-effect relationships between the dependent variables and independent variables, this study employed the pool OLS results and proceeded to validate the estimates of the OLS results. The results obtained are presented below.



**Table 3: Regression Result**

	ASCO Model	ASCO Model
	(Pooled OLS)	(Robust Regression)
CONS.	<b>0.979</b>	<b>0.912</b>
	{0.000} ***	{0.000} ***
CEO	<b>0.038</b>	<b>0.045</b>
	{0.055}	{0.000} ***
RETA	<b>0.086</b>	<b>0.082</b>
	{0.000} ***	{0.000} ***
F-statistics/Wald Statistics	<b>71.48 (0.00) ***</b>	<b>208.62 (0.0000) ***</b>
R- Squared	<b>0.4766</b>	<b>0.4766</b>
VIF Test	<b>1.00</b>	
Heteroscedasticity Test	<b>18.90 (0.0000) ***</b>	

Note: (1) bracket {} are p-values

(2) \*\*, \*\*\*, implies statistical significance at 5% and 1% levels respectively

In the table above, we observed from the OLS pooled regression that the R-squared value of 0.4766 shows that about 48% of the systematic variations in financial distress risk as measured by Altman Z-score in the pooled consumer goods firms over the period of interest were jointly explained by the independent and control variables in the model. The unexplained part of the financial distress can be attributed to the exclusion of other independent variables that can impact on the financial distress but were captured in the error term. The F-statistic value of 71.48 and its associated P-value of 0.0000 show that the OLS regression model overall is statistically significant at a 1% level, this means that the regression model is valid and can be used for statistical inference. The table above also shows a mean VIF value of 1.00 which is less than the benchmark value of 10. This indicates the absence of multicollinearity, and this means no independent variable should be dropped from the model. Also, from the table above, it can be observed that the OLS results had heteroscedasticity problems since its probability value was significant at 1% [18.90 (0.0000)]. The presence of heteroscedasticity clearly shows that our sampled companies are not homogeneous. This therefore means that a robust or panel regression approach will be needed to capture the impact of each company's heteroscedasticity on the results. In this study, we adopted the robust regression method. The results from the robust regression as shown in Table 3 are discussed as follows. The F-statistic value of 208.62 (0.0000) shows that the model is valid for drawing inference since it is statistically significant at 1%. In the case of the coefficient of determination (R-squared), it was observed that just like the OLS regression, 48% of the systematic variations in financial distress as measured by Altman Z-score in the pooled consumer goods firms over the period of interest was jointly explained by the independent and control variables in the model. The unexplained part of the financial distress can be attributed to the exclusion of other independent variables that can impact on financial distress but were captured in the error term. Following the above, the discussion of the robust regression results became imperative in testing our hypotheses. Below is a specific analysis of the effect of CEO ownership on financial distress using the robust regression results.

## **Discussion of Findings**

The results obtained from the robust regression model revealed that CEO ownership [coef. = 0.045 {0.000}] has a significant positive effect on financial distress risk when proxied with the Altman Z-score of listed consumer goods firms in Nigeria during the period under study. Hence, the null hypothesis that CEO ownership has no significant effect on the financial distress risk of listed consumer goods firms in Nigeria is rejected. The result implies that CEO ownership significantly reduces financial distress risk when proxied with the term Altman Z-score of listed consumer goods firms in Nigeria during the period under investigation. This study debunks the opinion that where there is an increase in the ownership by CEOs, the CEOs may perceive the board's arguments to be less important or less relevant thereby relegating other board members and describing them as possessing inferior knowledge of the ongoing operations. This could lead to the CEO neglecting, ignoring, or even not getting important advice from the board and senior managers. As a result, firm value and performance could be adversely affected by such a concentration of ownership and thus expose the firm to the risk of financial distress (Handriani, Ghozali, & Hersugodo, 2021). This study also disagrees with the position of Daily and Johnson, (1997) who state that increasing a CEO's ownership could have the downside of providing him/her with enough discretion to go after personal objectives rather than objectives that are in line with the maximization of shareholder wealth. CEO power, when used in self-interest, increases the risk of CEO entrenchment (Handriani et al., 2021), which according to Li, (2016) increases financial distress risk. However, the study agrees with the position of Combs, Ketchen, Perryman, & Donahue (2007) who argued that ownership concentration to the CEO could be beneficial to the firm, thereby enhancing firm performance.

## **Conclusion and Recommendations**

The study investigated CEO ownership and financial distress risk by employing samples from listed consumer goods firms in Nigeria from 2012 to 2021. The study conducted a pre-regression analysis which included descriptive statistics and correlation matrix. The panel Ordinary Least Square Regression analysis was first done before diagnostic tests were conducted which were carried out to check if the models violated the basic Gauss-Markov Theorem and assumptions (Wooldridge, 2002). These post-regression tests include a test for multicollinearity and a test for homoscedasticity. From the findings of the study, we concluded that CEO ownership has a significant positive effect on financial distress risk when proxied in terms of the Altman Z-score of listed consumer goods firms in Nigeria during the period under study. Generally, this study supports the notion that concentrating power in decision-making usually entails quicker decisions. However, we note that the quality of decisions could suffer if the decisions are rushed implying that the risk of financial distress could increase. Hence, this study specifically recommends that the management of consumer goods firms in Nigeria should endeavour to improve CEO shareholding percentage since increased CEO ownership tends to decrease financial distress as recorded in this study. The study contributed to knowledge through the use of CEO characteristics such as CEO as a separate objective on financial distress risk. Prior empirical works displayed a dearth of works carried out on listed Nigerian consumer goods firms, quoted on the Nigerian Exchange Limited (NGX) thereby insinuating an industry/sector and country gap that has been bridged by the contribution of this work. The study's scope covered the period of ten (10) years (2012 – 2021), which is unique to this work, thereby bridging the period gap that this work has filled and its contribution to knowledge. Unlike previous studies that employed the OLS regression technique as their methodology, this study contributed to knowledge by employing a multivariate regression technique to control for the unobserved heterogeneity effect present in the firms and fiscal years.

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