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IMPACT OF FIRM'S ATTRIBUTES ON THE CAPITAL STRUCTURES OF LISTED FOOD AND BEVERAGE FIRMS IN NIGERIA

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Abstract

The study investigated how certain characteristics of firms influence their capital structure in the food and beverage industry in Nigeria. To achieve the main objective of the study, a descriptive research design was employed, and diagnostic test conducted to ensure data validity. The population of the study comprised of 21 listed food and beverage firms in Nigeria listed on the Nigerian Exchange Group as of 2021. A sample of 10 firms was selected using purposive sampling techniques. The study relied on secondary data, extracted from the annual reports and accounts of sampled firms covering the period 2012 to 2021. The results of the study revealed that firm age and earnings volatility had a significant positive impact on the capital structure of listed food and beverage firms in Nigeria. On the other hand, firm size had a negative significant impact on their capital structure. Surprisingly, liquidity was found to have no significant impact on the capital structure of these firms. In conclusion, the study establishes that firm attributes do influence the capital structure of listed food and beverage firms in Nigeria. Therefore, the

study recommends that companies in this industry should pay close attention to their size, age, and earnings volatility. Understanding these factors will help them determine an appropriate mix of debt and equity to ensure sustainable growth and success.
Keyword: Capital Structure, Earnings, Firm Age, Firm Size, Volatility

INTRODUCTION

The decision as to the composition of the capital structure is of immense importance to any company traded publicly. The choice as regards the composition of capital structure is so vital that most business failures are usually linked to either its inadequacy or unsuitability (Heyman, Deloof, & Ooghe, 2008). Capital structure connotes a firm's financial structure which comprises of the debt and equity used to finance the Company. Firms' capacity to fulfill their stakeholders' expectations is strongly associated to capital structure. This understanding therefore is an essential aspect that should not be ignored. Capital structure in relation to finance refers to the technique firms employ in financing their assets using the blend of debt, equity, or a combination of securities (hybrid) (Saad, 2010).

Firm characteristics such as the firm's size, the liquidity, the age of the firm, the firm's market share, other operations outside its balance sheet, earnings volatility can in no small measure influence the activities of a firm either on the positive or negative.

Some Investors and stakeholders in Nigeria, however seems to be oblivious of the immense effect of capital structure in measuring and determining their firm's overall performance, hence they are of the assumption that capital structure do not relate to the value of their firms. Contrary wise, it is worthy of note that a well-mixed portfolio of capital structure will in no small measure ensure the success of firms. Hence, colossal consideration should be given to the issues around the capital structure of firms in Nigeria as this is paramount to their performance and to the economy at large. Furthermore, the choice of the capital structure of a company can have a negative effect on the performance of the company where it is not appropriately utilized.

There have been in the past a number of research in developed countries on the capital structure of firms such as Deshng, Greene and Segal (2004), Hardwick and Zou (2008), Sandra and Lianga (2007), Al-Shami (2008), Kozak (2011), Adams, Dieter and Charumathi, (2012), some other researchers focused on developing countries such as Ahmed, Naveed and Usman (2011), Adams and Buckle (2003), Akotoye, Osei and Gemegah (2011), Abate (2012), Almajali, Sameer and Yahya (2012), Daniel and Tilahun (2012) and Malik, 2011. Though, a great number of literatures are available in relation to the capital structure of firms, however only a few

connected capital structure with firm attributes in their study. The results of the previous studies performed on the impact firm attributes have on the capital structure of firms have been diverse and uncertain. Also, the results of certain studies carried out in other nations may not be fully linked to firms in Nigeria as a result of the difference in the environment as it relates to regulations and operations. Furthermore, the few research conducted in Nigeria such as that done by Aliu (2010), Kolawole (2013), Owolabi and Kayode (2010), Bashir (2019) did not include the impact "earnings volatility" have on the capital structure of firms even though they duly considered other factors of a firm that could affect its capital structure such as the firm size, firm age, assets tangibility, firm growth and liquidity. Earnings volatility has hence not been investigated within the Nigerian context to the best of the researcher's knowledge. To further iterate the importance of this research, it is noteworthy to state that only few studies have been performed using this jurisdiction and sector (food and beverages). Finally, based on the researcher's best knowledge no research has been done here in Nigeria utilizing the same variable composition explored in this study and for the period covered 2012-2021. The research problem is hence the determination of the impact of firm's attributes have on the capital structure of companies listed in Nigeria.

The objectives of this study are:

1. Determine the impact of firm's age on the capital structure of selected listed companies in Nigeria.
2. Determine the effect of firm size to the capital structure of selected listed companies in Nigeria.
3. Assess the impact of liquidity on the capital structure of selected listed companies in Nigeria.
4. Study the influence of earnings volatility on the capital structure of listed companies in Nigeria.

The hypotheses of the study are:

H_{o1}: Age of firm does not have significant impact on the capital structure of selected listed companies in Nigeria.

H_{o2}: Size of firm does not have significant contribution to the capital structure of selected listed companies in Nigeria.

H_{o3}: Liquidity of firm does not have significant impact on the capital structure of selected listed companies in Nigeria.

H_{o4}: Earnings Volatility does not have significant influence on the capital structure of selected listed companies in Nigeria.

LITERATURE REVIEW

Conceptual Framework

This aspect encompasses various ideas relevant to this study where definitions and insights from different writers would be aligned and discussed.

Capital Structure

Capital structure could be seen as a mix of equity finance and debt finance and is most time considered as one of the most important variables in finance due to its connectivity to the capacity of a company meeting the requirements of its various stakeholders ranging from employees to shareholders, community, government among many others (Jensen, 1986). Equity finance has the most risk, it is the finance derived from the contributions made by the owners of the business. The shareholders are hence eligible to partake on the share of the company's profit according to their shareholding. This portion of profit they receive as shareholders is called dividend. It is however not mandatory to pay dividend on a yearly basis as the company may consider ploughing back profit earned in other to support future expansion, this is basically the decision of the board of directors and the major shareholders. The shareholders as well share the risks as it relates to the operations of the business, where there are losses they also partake in it. They are usually the last to obtain any form of benefit upon the liquidation of the company as debt holders are first settled (Brockington, 1990).

Debt finance involves obtaining funding or borrowing from the external sources of finance such as financial Institutions or even issuing bonds. In this type of financing, the fund provider have no stake or control over the operations of the company but is paid a specific sum at certain intervals as benefit for the utilization of its funds. Contrary to equity finance, the borrowing company is mandated to pay back the principal sum with the accruing interest whether or not the company makes profit as failure to meet up this obligation could result to the loss of the asset used as collateral for the loan, the end of the business in certain instances (Bichsel and Blum, 2005).

A firm's capital structure is hence the mixture of its financial obligations or liabilities. It has been an essential issue for a long time now from the perspective of strategic management considering its connection with company's capacity to meet the various and unique demands of varied stakeholders (Roy and Minfang, 2000). Financing with either debt or equity are the two main classes of financial liabilities, the holders of debt and the holders equity representing the two kinds of investors in the Company. Each of these sources of finance is connected with diverse risk levels, control and benefits. While the holders of debt have little or no control, receive a fixed rate of return on their loan and are secured by contractual demands and

obligations as it relates to their investment. Equity holders are the last to claim profit, as they are only considered after the debt holders have been settled, they consequently bear most of the associating risk and have greater level control over decisions and operations of the firm.

Debt financing has advantages as well as disadvantages as it relates to the growth of firms and also on the development of the economy. Debt finance could results to advantages to the company such as tax shield, the reduction of working capital problems hence ensuring managerial efficiency. The expenses in relation to debt financing however include expenses on agency and cost of bankruptcy which stems from the conflicts that exist between debt holders and shareholders (Fama& French, 2002). In other to maximize profit and improve firm's performance, Managers are therefore expected to balance the costs and benefit of debt financing when make capital decisions as it relates to debt finance (Kraus & Litzenberger, 1973). Debt ratios can be used in measuring the capital structure of firms. The debt ratio compares the total debt currently in a company with its total assets. A low debt ratio shows that a company relies less on debt whereas a high debt ratio shows that a firm depends more on debt finance.

According to Aliu (2010) leverage is the responsiveness of the worth of equity owned in relation to dynamics or changes to the fundamental value of a firm. In essence, it is the mix of firm's financial liabilities. Leverage could also be considered as the act of measuring how much of equity or debt firms use in relation to its asset financing. This therefore implies that it shows the amount of debt utilized in the capital structure of the company. David (1952), stated that where leverage is increased in the capital structure of a firm, it will result to an increase in firms' value and also a subsequent increase in the market price per share, this assumption made by him could however not be justified. Although, Jensen (1986) was able to affirm that an increase in leverage will result to better performance by firms. Fabrizo, Nigel, Sarmistha and Isabella (2011), measured leverage as the total short and long term debt to total asset and also the total liability to the total asset, whereas Tih (1998), refers to leverage as the total long term debt divided by the total asset. Abdullahi, Ayoib and Khaled (2011) see leverage as the total debt to the total asset. Consequently, total debt to total asset as employed by Abdullah et al, (2011), would be utilized in this study as a measure of leverage.

Firms Attributes

The attributes of a Firm can be discovered on the basis of vital information evident on the financial statement of the company for a specific financial year or accounting period (Stainer, 2006). Dean, Bulent and Christopher (2000) are of the ardent opinion that the attributes of a firm are imperative determinants of the performance of the firm and the success

of the firm in its business operations. The variables of Firm attributes utilized in this research includes, the size of the firm, firm age, its liquidity and its earnings volatility.

Firm Size

Firm size relates to the pace and degree of growth that is ultimate for a specific firm or company. The intention of most companies is to enlarge the extent of their business activities and operations in other to ensure growth in either for them to raise either profit, revenue, number of employees, or the size of facilities (Pervan &Visic, 2012). The size of a Firm been an inner feature of a Firm has been accepted as an essential aspect of the capital structure of a firm. The reason for this consideration is because the size of a firm has a significant role in determining its level of economic operations and the probable economics of scale that could be an advantage to the Company. This hence implies that larger firms are most prone to produce bigger gains on their assets (Driffield, Mahambare & Pal, 2005). Many firms race in an industry that is rapidly changing, the growth of manufacturing ability, market shares, geographical presence, among others which could be vital for continued existence (Dogan, 2013). Bala, Darry and Matthew (2005) considered the size of a firm as a significant reason behind the firm's financial operations and performance.

Firm Age

The age of a firm to a significant degree determines the capital structure of the firm. This thus implies that new firms are perceived to lack the ability to attain economies of scale and they seldom have the adequate managerial wealth and the needed expertise. It is also noted as a feature that enhances the performance of firms. However contrary to this assertion, Muhammad and Shahimi (2013), Claudio and Urs (2009) are of the opinion that older companies lack the flexibility needed in making rapid adjustment as the market presents, this barrier to innovation as a result of organizational rigidities constrains their growth and performance over time. Claudio & Urs, 2009) elucidated that firms are better with age, in terms of performance. The findings from the study of Alex, Augustine and Mercedes (2006), is however contrary to the afore opinion as they are of the stance that the older a firm is, the better its performance as firms gets better with age. They are of the opinion that over time older firms are able to realize their strength and employ it maximally to ensure productivity.

Liquidity

Liquidity is the capacity of a firm to meet up the claim for fund it has (Biety, 2003). A liquidity position of a company could be calculated as the ratio of its current assets to its current

liabilities; it involves the probability of a firm meeting its working capital needs and financial obligations as they arise. (Omolehinwa, 2006). Major stakeholders of a firm such as its suppliers, its creditors and other lenders of short term funds are usually interested in the liquidity stance of a firm in other to be assured of the capability of the firm to get their needs or obligations met as they fall due (Kurfi, 2003). Hence, liquidity also refers to the sum of cash present in a firm or the amount of current asset a firm possesses that could quickly be converted into cash for the daily operations of the firm. It involves the amount that has been put in assets which are projected to be derived within a single financial year or accounting period. The ideal current ratio for firms is 2:1 as at this point a firm is seen to be reasonably and adequately protected against the position of becoming insolvent as a result of liquidity issues. While, the ideal quick ratio is 1:1. For the purpose of this study the quick ratio will be adopted as a measure for liquidity.

Earnings Volatility

The volatility of earnings relates to how much earnings of a firm or company changes or fluctuates. It is vital in the assessment of the risk inherent in the business. Where the volatility of the earnings is high, it implies a high risk; while where the volatility of earnings is low it connotes a lower risk. In the study performed by Bennerr and Donelly (1993) the findings revealed a positive relationship between earning volatility and capital structure. On the other hand, Psillaki and Daskalakis (2008) found a negative relationship between earning volatility and capital structure.

Theoretical Framework

This part of the literature review focuses on appropriate theories associated with the study.

Pecking Order Theory (POT)

The first suggestion of Pecking order theory was in 1961 by Donaldson, it was further tailored by Stewart C. Myers and Nicolas Majluf in 1984. This theory postulate that financing cost amplifies with asymmetric information. In respect to this theory financing is considered been derived from three major sources, which is internal funds, new equity and debt. According to this theory, when firms are in need of funding, they usually give preference to internal funds, where such is not sufficient they could consider debt but however have the issue of new equity as the last resort for funding and only go for it when it is not reasonable to incur further debt. Myers and Majluf (1984) increased the use of the pecking order theory when they

ascertained that obtaining finance by equity is less preferred reason been that when managers (those in position of managing the company and very well understand the condition and position of the company as opposed to the investors) issue new equity, the investors mostly are of the opinion that the firm has been over valued by the managers for selfish reasons and would prefer to price down the value of new shares been issued.

Trade-Off Theory (TOT)

The Trade-off theory in terms of capital structure postulates that the choice or decision of a firm in respect to the extent of equity finance or debt finance it uses to meet up its funding needs is on the basis of the cost to benefit analysis of such decision. This theory essentially involves comparing the costs associated with financing by debt as against the benefits that could be derived from financing by debt. It also involves offsetting the cost associated with equity finance as against the benefits that could be derived from financing by equity. It is of the position that the firms are mostly funded by both the issue of equity and debts. Trade-off theory as it relates to capital structure of firms focuses majorly on two ideas or concepts, which are; costs associated with financial distress and the costs connected with agency. It postulates that there are advantages that could accrue from financing by debt, such as the tax benefit, but also iterate the cost associated with financing by debt, such as financial distress and bankruptcy. Modigliani and Miller in 1963 initiated the tax benefit debt financing could bring. They affirmed that the desire of debt financing reduces with the charge of personal tax on the interest income. A Company however goes into a state of financial distress when such company is unable to meet up financial obligations resulting from debt finance as they fall due.

Empirical Review

Ibrahim (2009) in his study conducted in Egypt which spanned through 1997 to 2005 assessed the impact the choice of capital structure by firms on their performance, he engaged the multiple regression analysis in determining the relationship that exist between the performance of a firm and its leverage level. In the study, three accounting financial performance based measures were employed, which are return on equity, gross profit margin and return on assets. The findings from the study demonstrated that the choice of capital structure of a firm has little or no effect on the financial performance of the firm.

Chowdhury and Chowdhury (2010), findings are in consonance with the postulation of Modigliani and Miller (MM). Their study examined the impact of debt-equity financing composition on shares value given diverse sizes, varied industries and also growth

opportunities with Firms listed in the Stock exchange of Dhaka and also the Chittagong Stock Exchange (CSE) of Bangladesh.

Further research conducted on the capital structure and its connection with the performance of firms by Majumdar and Sen (2010) assed the part of various categories of debt on the tactical behavior and also performance of firms located in India. The result showed that the only type of debt that has a noteworthy and positive connection with performance is fixed deposit. Other categories of debt were discovered not to be significant. In an interrelated study by San and Heng (2011) examined the connection that exist between capital structure and performance of firms located in Malaysia, specifically the construction industry prior and during crisis that began in 2007. The findings revealed that return derived on capital was absolutely connected to debt to equity market value for large companies. The same significant connection was discovered between earnings gotten per share and the long term debt to capital. The study however found that earnings per share were negatively connected with debt to capital. They also revealed that the margin on operation and that of long term debt to general equity were positively connected for small and medium firms and also earnings per share and debt to capital has a negative connection in medium and small companies.

A study performed recently by Fosu (2013) examined the impact capital structure have on the performance of firms with specific concentration on the rate of market competition as it relates to products of firms in South Africa. The result of the study indicated that leverage as it relates to finance has an absolute impact on the performance of firms, also, market competition as it relates to products contributes in improving the impact leverage has on the feat of firms in South Africa. More contemporary studies conducted by Oino and Ukaegbu (2015) on companies in Nigeria revealed that profitability is not significantly connected to leverage. Another recent study conducted by Bandyopadhyay and Barua (2016) on how capital structure affect firm performance in relation to firms located in India revealed that macroeconomic factors and cycles, to a reasonable and significant degree, affect the capital structure decisions of firms which consequently affect their performance at large.

Prahalathan, and Ranjani, (2011), examined the result of capital structure decision on the performance of the firm and discovered that capital structure which is examined by the consideration of short term debt to total assets, total debt to total assets and long term debt to total debt, has no relationship with the company's performance which is been determined by the use of ROE and ROA. Remarkably, this finding is however contrary to the results of other financial literature as they either revealed a momentous positive relationship or a significant negative relationship of capital structure to the performance of a firm

Muchugia (2013) studied impact debt financing has on commercial banks performance in Kenya. The research utilized multiple regression analysis and a quantitative research design n. In the study, return on equity was the reliant variable whereas firm size, total debt, short term liabilities and long term liabilities represented the explanatory variable. The study found that short term financing positively impact firm's performance as it relates to profitability while long term financing on the other hand negatively affect firm's performance in relation to profitability.

In another study performed by Tharmila and Arulvel (2013) similar to the afore, which assed the impact capital structure could have on the financial performance of firms listed on the Colombo stock exchange. They revealed at the end of their study, that there exist a negative connection between the capital structure and the financial performance of companies.

Masiegaet.al, (2013) performed a study on the effects of capital structure on the financial performance of companies listed on the NSE. 30 companies were used as the sample and the duration utilized spanned from 2007 to 2011. It was discovered at the end of the study that long term debt relationship with the total asset of the company is significant and positive and discovered that there is a connection between long term debt and financial performance, it is however weak and insignificant.

Chepkemoi (2013) did a study on how capital structure affects the performance of SMEs financially. 295 SMEs at Nakuru town were sampled, multiple regression approach and descriptive statistics were employed and the result revealed that the connection between capital structure and profitability is negative while the link between capital structure and growth of sales is positive.

Hossain and Yakub (2014) performed a study on Bangladesh banking industry to determine what impact firm features have on their capital structure. 47 banks were examined from 2008 to 2012. It was found that the connection between debt to asset ratio and tangibility of asset was significantly negative

METHODOLOGY

Study and the Data

This research study utilized the descriptive research design. The population under this study encompasses the twenty one (21) listed food and beverage companies in the NSE as at 2021. The sample size comprised of ten (10) listed food and beverage companies selected based on purposive sampling technique. It is a type of non-probability sampling where researchers depend on their subjective judgment in selecting members out of the entire population to use as samples in their study. The Researcher's subjective judgment on the sample selection was based on companies whose audited financial statements are available

and could be accessed online. The selected firms are: Flour Mills Plc, Unilever Nigeria Plc, Dangote Sugar Plc., Cadbury Nigeria Plc., Dangote Flour Plc., Nascon Nigeria Plc, Nestle Nigeria Plc, Nigerian breweries Plc, Guiness Nigeria and Honey Well Flour mills Plc. Secondary data was utilized in this study. The data as it relates to research variables which have been noted in the study model were derived from the company's audited financial statements visible on their websites and also the NSE websites from 2012 to 2021. Data was also derived from the company's Income statement and statement of financial position respectively.

Variable Measurements

Table 1: Variable Measurements

S/N	Acronym	Meaning	Type	Measurement	Source
1	CAS	Capital Structure	Dependent	Total debt divided by total equity	(Adegbile, 2015; Mbonu & Amahalu, 2021)
2	FS	Firm Size	Independent	Natural logarithm of total revenue	(Efuntade & Akinola, 2020; Paseda, 2021)
3	LIQ	Liquidity	Independent	computed by dividing current assets by the current liabilities	(Mbonu & Amahalu, 2021; Mohammed & Usman, 2016)
4	FA	Firm Age	Independent	Natural logarithm of (Number of years since incorporation)	(Paseda, 2016)
5	EV	Earnings Volatility	Independent	Changes in operating profit (OP) which is Current year OP-Previous year OP/ Previous year OP	(Masnoon & Saeed, 2014)

Model Specification

For the purpose of ascertaining the relationship between firm attributes and capital structure, the below Generalized Least Square (GLS) regression model will be used:

$CAS_{it} = \beta_0 + \beta_1 FS_{it} + \beta_2 LIQ_{it} + \beta_3 FA_{it} + \beta_4 EV_{it} + \mu_{it}$ ---------- (1)

Where,

CS it = Symbolizes Capital Structure of the company named i at period t

AGF it = indicates the Age of Firm of the company named i at period t,

SOF it = denotes the Size of Firm of the company named i at period t,

LQT it = signifies the Liquidity of the company named i at period t,

OES it = Stands for Earnings Volatility of the company named i at period t,

β_0 = the intercept,

$\beta_{1-}\beta_4$ = Coefficients of the explanatory variables

eit = the error term.

Data Analysis

The data gathered were tested and confirmed to be accurate and in order for analysis. Statistical Software for Data Science (STATA) was exploited to analyze the data. Multiple regression and Correlation analysis were employed to ascertain the relationship and causal effect between firm attributes and capital structure among selected listed food and beverage companies in Nigeria. Diagnostic tests (Multicollinearity and Heteroskedasticity) were performed to ensure the validity of the data.

RESULTS AND DISCUSSION

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Minimum	Maximum
CAS	100	0.2695	0.1966	0.0041	0.8695
FS	100	24.880	1.6433	20.340	27.007
LIQ	100	1.2025	1.5617	0.1908	14.372
FA	100	3.9768	0.4538	2.565	4.5952
EV	100	0.0247	1.4310	-5.0315	8.7115

Source: STATA 16 Output file (2023).

Table 2 shows the descriptive statistics of the study. The statistical measures include the mean, standard deviation, minimum and maximum values for each of the independent and dependent variables. CAS showed a mean value of 0.2695; Sta. Dev. value of 0.1966; minimum and maximum value of 0.0041 and 0.8695 respectively. This means that on average, listed food and beverage firms in Nigeria had a CAS of 0.2695 representing 26.95% of total capital. FS showed a mean, minimum and maximum value of 24.880, 20.340 and 27.007 respectively while LIQ showed a mean, minimum and maximum value of 1.2025, 0.1908 and 14.372 respective. This means that on average, listed food and beverage firms in Nigeria had a LIQ of 1.2025 which is neither too high nor too low. With a mean value of 3.9768 and 0.0247 for FA and EV respectively most of the listed food and beverage firms had about 2.47% volatility in earnings. Generally, the standard deviation values were not too far from the mean values indicating minimal deviation of the variables from the normal.

Table 3: Correlation Matrix

Variable	CAS	FS	LIQ	FA	EV
CAS	1				
FS	-0.4285*	1			
	0.0000				
LIQ	0.2683*	-0.4005*	1		
	0.0069	0.0000			
FA	0.3923*	-0.2430*	0.1368	1	
	0.0001	0.0148	0.1749		
EV	0.1915	-0.0987	-0.0101	0.0132	1
	0.0563	0.3286	0.9206	0.8967	

Source: STATA 16 Output file (2023).

Pearson correlation coefficients are used to study the extent of association among the variables for the period 2012 and 2021. The interpretation of the Pearson correlation would follow Guilford rule of thumb which is < 0.2 is a negligible correlation, 0.2 to 0.4 is low correlation, 0.4 to 0.7 is a moderate correlation, 0.7 to 0.9 is a high correlation, > 0.9 is a very high correlation. The results show that the correlation between the independent variables and dependent variables used in the model is generally small. The largest correlation coefficients exist between the firm size (FS) and (CAS); (LIQ) and (FS) with -42.58% and -40.05% respectively. The results show that, LIQ, FA and EV have significant at positive correlation with CAS. This suggests that, a change in LIQ, FA and EV would significantly affect CAS of listed food and beverages firms in Nigeria. On the contrary, the correlation between FS and CAS shows a negative association, suggesting that, a change in FS would negatively affect CAS but significantly.

Table 4: Multicollinearity

Variable	VIF	1/VIF
FS	1.26	0.793462
LIQ	1.20	0.835481
FA	1.06	0.939010
EV	1.01	0.987246
Mean VIF	1.13	
Heteroskedasticity	Chi^2 (1)	$Prob>chi^2$
	0.03	0.8613

Source: STATA 16 Output file (2023).

Also, the correlation matrices do not reveals that two explanatory variables are perfectly correlated. This means there is absence of multicollinearity problem in the model. This was confirmed by Variance Inflation Factor (VIF) and Tolerance Values (TV). Table 4 shows all the VIF and TV values are within the acceptable range. According to Gujarati (2003) a VIF value between 1 and 10 with a corresponding TV of less than one suggest the absence of multicollinearity among the independent variables which is desirable. Hence, the results in table 4 further confirm the absence of multicollinearity. Table 4 also shows the test results of Heteroskedasticity. Given a $chi^2(1)$ value of 0.03 and P-value of 0.8613 which is greater than 5%, it suggests that, Heteroskedasticity is not an issue.

Table 5: Wooldridge Test for Autocorrelation in panel Data

F (1, 9)	*3.593*
Prob>F	0.0905

Source: STATA 16 Output file (2023).

Serial correlation is another assumption of linear regression that needs to be fulfill in other to generate reliable coefficients. Given that the F-stats of 3.593 and P-value of 0.0905 (which is significant at 10%) is statistically significant, autocorrelation is said to be present in the model. The results in table 5 show that serial correlation is an issue hence the need to correct the model using the Panel Corrected Standard Error (PCSE).

Table 6: Summary of Regression Results (PCSEs)

CAS	Coef.	Std. Err.	Z	P>|Z|	Model
FS	-0.0353	0.0074	-4.77	0.000	
LIQ	0.0139	0.0114	1.22	0.222	
FA	0.1314	0.0212	6.19	0.000	
EV	0.0218	0.0090	2.42	0.015	
_cons	0.6071	0.2313	2.62	0.009	
R-sq					0.3056
Wald chi^2 (4)					155.63
Prob>chi^2					0.0000
Hausman					
Chi2 (4)					12.76
Prob>chi^2					0.0125

Source: STATA 16 Output file (2023).

CAS = 0.6071 – 0.0353(FA) + 0.0139(LIQ) + 0.1314(FA) + 0.0218(EV) – 0.6944

The regression results as shown in table 6 explain the overall statistical significance of this study as well as the specific relationship between the independent and dependent variables. The overall significance of the study was captured by the relevant statistics of the model as shown above. The coefficient of determination represented by R-sq value of 0.3056 explains the overall significance of the model. The result shows that, about 0.3056 (30.56%) variation in CAS of listed food and beverage firms in Nigeria can be jointly explained by FS, LIQ, FA and EV. The remaining 0.6944 (1 – 0.3056) representing 69.44% is explained by other variables not included in this study. In addition, the Wald $chi^2(4)$ value of 155.63 with a corresponding p-value of 0.0000 shows that the model as stated above is significant and can be used in estimating the CAS of listed food and beverage firms in Nigeria. The choice of the panel corrected standard error (PCSE) model was premised on the Hausman Specification test results as shown above. Given a significant p-value of 0.0125 at 1%, the fixed effect model was considered appropriate. However, the fixed effect model suffered from autocorrelation. Hence, the PCSE model was employed to correct the autocorrelation problem identified.

Firm Size and Capital Structure

Table 6 shows the results of Firma Size and Capital Structure. This includes the coefficient, standard error and probability values. The relationship between FS and CAS is explained by the coefficient and probability values. Given a coefficient of -0.0353 with a corresponding p-value of 0.000, the relationship between FS and CAS is seen to be negative but significant. Thus, an increase in FS will result in a decrease in CAS of listed food and beverages firms in Nigeria. This suggest that, an increase in the Total Assets of listed food and beverage firms by 1% would result in a decrease in the proportion of debt to equity contribution made by equity holders. This is supported by the trade-off theory of capital structure that assumes that, optimal capital structure can be achieved by balancing the cost and benefit of a particular source of funding for a company. This means that, investing more in the assets would result in reduced investment in equity. The result further provides sufficient evidence for rejecting the null hypotheses that states that, firm size has no significant effect on the capital structure of listed food and beverages firms in Nigeria. This findings is in accordance with those of (Olamide et al., 2022) (Mugwe, 2015) but however contradict those of (Mohammed, 2019; Mbonu and Amahalu, 2021).

Liquidity and Capital Structure

The result in Table 6 also shows the relationship between Liquidity (LIQ) and capital structure (CAS). Given a coefficient value of 0.0139 with a corresponding p-value of 0.222, the

relationship between LIQ and CAS is not statistically significant. This means that a 1% increase in the proportion of current assets to current liabilities would not significantly affect the CAS of listed food and beverage firms in Nigeria. This is not surprising given that, increased liquidity in a firm comes with additional cost which could erode any short-term benefits generated by the firm. Consequently, this is in line with the trade-off theory of capital structure. The result also provides sufficient evidence for failing to reject the null hypotheses stated as "liquidity has no significant effect on the capital structure of listed food and beverage firms in Nigeria". This finding aligns with those of Handoko (2016) but contradicts those of Mbonu and Amahalu, (2021).

Firm Age and Capital Structure

In addition, the regression result shows the relationship between Firm Age (FA) and Capital Structure (CAS). Given a coefficient value of 0.1314 with a corresponding p-value of 0.000, the relationship between FA and CAS is statistically significant at 1%. This means that, a 1% increase in FA would result in an increase in CAS of listed food and beverage firms in Nigeria by 13.14%. Therefore, the longer a firm continues to exist as a going concern the better its capital structure as the firm would be able to access cheaper and available sources of funding. Thus, this aligns with the pecking order theory that assumes that funding sources should be pecked in a particular order in include internal and external sources. The result thus provides sufficient evidence for rejecting the null hypotheses of the study which states that, firm ages has no significant effect on the capital structure of listed food and beverages firms in Nigeria. This finding is in line with the studies of Hernandez-Canovaz and Martinez-Solano (2011) and Bhaird and Lucey (2010) but differs from those of Saraani and Shahadan (2012) and Mugwe (2015).

Earnings Volatility and Capital Structure

Similarly, the relationship between Earning Volatility (EV) and Capital Structure (CAS) is revealed in table 6. Given a coefficient value of 0.0218 with a corresponding p-value of 0.015, the relationship between EV and CAS is statistically significant at 1%. This means that, a 1% increase in EV would result in an increase in CAS of listed food and beverage firms in Nigeria by 2.18%. This is not surprising given that, increased Earnings Volatility in a firm comes with inconsistent and balanced capital structure which affects the capacity of a firm to take advantage of investment opportunities. Consequently, this is in line with the trade-off theory of capital structure. This is so because increased earnings volatility could limit the proportion of earnings retained which in turn reduces the shareholder equity of the firm. The result thus

provides sufficient evidence for failing to reject the null hypotheses stated as “Earnings volatility has a significant effect on the capital structure of listed food and beverage firms in Nigeria”. This finding aligns with those of Oztekin (2009) but contradicts those of Akdal (2010).

CONCLUSION AND RECOMMENDATIONS

The study draws its conclusion from the empirical evidence and regression results generated from the panel data extracted from ten (10) sampled food and beverage firms listed on the Nigerian Exchange Group. Evidence from the results led to the following conclusions: firm size has a negative but significant effect on capital structure while firm size and earnings volatility had a positive and significant effect. Liquidity on the other hand showed a positive but insignificant effect on capital structure of listed food and beverage firms in Nigeria.

The study thus recommends that, listed foods and beverage firms in Nigeria pay attention to its size, age and volatility of earnings. This would enable the firm determine an appropriate mix of debt and equity need to ensure continued growth. In addition, food and beverage firms must maintain adequate liquidity that is needed to sustain its operations. Similarly, shareholders in food and beverage firms in Nigeria should ensure that management complies with relevant regulations particularly with respect of debt and equity proportions in a company.

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