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The Mediating Effect of Financial Distress on the Relationship between Profitability and Value of Listed Non-Financial Firms in Nigeria

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Abstract

This study examined mediating effect of financial distress on the relationship between profitability and firm value. The prior studies have focused on the FND and firm value, individually. To date, relatively little research has been conducted in this area, the current study would like to investigate this issue and fill such a research gap in Nigerian capital market. The study used listed non-financial services firms in the Nigerian Exchange Group for the period 2011 to 2020. Purposive sampling technique was used in the study. The study used 72 firms out of the 113 non-financial services firms that were listed for the period under study. The descriptive statistics, correlation and Structural Equation Modeling (SEM) were used as techniques for data analysis while Monte Carlo model was used to determine the level of significance of the indirect effects. The study found that profitability has positive and significant effect on value, as well as financial distress of listed non-financial services firms in Nigeria. Financial distress has negative and significant effect on firm value. Finally, financial distress partially mediates the relationship between profitability and value of listed non-financial service firms in Nigeria. Hence, the study recommends among others that listed non-financial service firms in Nigeria should put profitability into consideration as it may the effect of profitability reduce financial distress and increase the value of their firms.

Keywords: Profitability, Financial Distress, Firm Value, Nigeria.

1.0 Introduction

Maximizing firm value is essential for a company because it means increasing the prosperity of shareholders as well, which becomes the company's main goal. However, a good firm value is to attract other parties' interests to join the company. In other words, performance on the stock market is an index or indicator of corporate success. Any corporate entity experiencing a rise in the market price of its stocks is considered a good company by the investors (Shuaibu et al., 2019). Firm value is the perception of investors to the success rate of companies that are often associated with the stock prices. High stock prices make the company value also high (Sujoko et al., 2007 as cited by Manoarfa, 2018).

Profitability is the ability to earn profit from all the activities of an enterprise. It indicates how well management of an enterprise generates earnings by using the resources at its disposal. Firms usually follow the goal of maximizing shareholder wealth. This solely cannot be achieved without ensuring that the returns or profits made are sufficient to meet the companies' operation and other obligations. Many studies such as Sabrin et al. (2016); Sucuachi and Cambarihan (2016); and Chen and Chen (2011), examined the effect of profitability on the value of the companies and revealed that profitability indeed influence the firm value. The greater the profitability of a firm, the more assignable profit there is, and the higher is the value of the company (Chen & Chen, 2011).

The failure of top firms in the world who once represented the icon of their industries has renewed the interest of research on the subject matter of financial distress (FND) (Vincent & Dakare, 2019). Financial distress is referred to as a situation where a firm is unable to generate sufficient fund to meet its financial obligations as at when due (Ikpesu & Eboiyehi, 2018). High FND indicates that the company is experiencing financial difficulties so that it cannot pay its obligations. However, higher profitability signifies lower risk of FND. This is because the high profit generated indicates that the company has sufficient funds to meet and pay its obligations. Thus, if the company's FND is higher, the firm value will be lower because investors will not invest in high-risk companies that also cannot fulfil their obligations (Dewi et al., 2021).

Research by Chen and Chen (2011), Rajhans and Kaur (2013), Hermuningsih (2013), Sabrin et al. (2016), Pratiwi (2020) and Robert (2021) discovered that profitability have positive effect on firm value. However, other extant studies by Sharif et al. (2015), Lastari and Armayah (2016), Mohammad (2017) and Panji (2018) revealed that profitability has inverse relationship with firm value. From the forgoing facts, it is evident that effect of profitability on firm value yielded inconsistent results with some indicating positive association and others negative. The differences in the previous research findings show that there is gap between the profitability and firm value. It is believed that this happens because there are other variables influencing their relationship. Therefore, for this reason, this study reviews the relationship between profitability and firm value by including FND as meditating variable.

Previous studies such as (Adedoyin 2011; Uwuigbe et al., 2012; Uwubanmwen & Obayagbona 2012; Rajhans & Kaur 2013; Hermuningsih 2013 and Abdallah 2014) apart from Dewi et al. (2021), prior studies failed to consider the relationship between profitability, FND and firm value concurrently. This shows that there is research paucity with regards to these three variables.

The divergence in the previous studies may introduce a question whether profitability just directly affects the firm value or an important hidden variable like financial distress may influence such a relationship. If financial distress is put as a hidden variable in the profitability and firm value association, the FND can play a substantial role in this regard. As a matter of fact, the level of FND of a company may affect the company value. Prior studies (Ahmad et al., 2020; Kanyugi, 2016) have focused on the FND and firm value, individually. Since little research has been done in this area, the current study intends to investigate this issue and fill the research gap in Nigerian capital market.

The aim of this study is therefore, to examine the relationship between profitability and firm value by adding financial distress as mediating variable. Financial distress is believed to be able to intervene the relationship between profitability and firm value because it is an illustration for creditors, suppliers, customers, other stakeholders and investors that lend, supply, patronize and invest in the firm, which increase its profitability and value to see the company financial condition.

The rest of the paper is divided into four sections; section two is literature review from previous studies. Third section describes methodology used in conducting this study. Section four comprises of the results and discussion and fifth section captures conclusion and recommendation.

2.0 Literature Review

Profitability and Firm Value

The impact of profitability on value is a central issue to the corporate organizations and researchers. There are several studies on profitability and value at different times in developed, as well as, developing countries, and most of which are well documented in the area of accounting and finance literature. Some of these studies are Chen and Chen (2011), Adedoyin (2011), Uwuigbe et al. (2012), Uwubanmwen and Obayagbona (2012), Rajhans and Kaur (2013), Hermuningsih (2013), Abdallah (2014), Almumani (2014),

Kumar (2015), Sabrin et al. (2016), Sucuahi and Cambarihan (2016), Lestari and Armayah (2016), Abba and Usman (2016), Mahmoud (2017), Panji (2018), Sari and Sedana (2020), Pratiwi (2020) and Robert (2021) among others.

However, studies on the impact of profitability on firm value have yielded inconsistent results. In Taiwan, Chen and Chen (2011), focus on the relationship between profitability and firm value with capital structure as mediator and firm size and industry as moderators for 647 listed companies for the years 2005 to 2009. Using correlation and regression analysis, the results confirmed that profitability has a positive effect on firm value. In India, Rajhans and Kaur (2013), investigate the determinants of firm value creation for 16 companies listed on Bombay Stock Exchange (BSE) from 2002 to 2011. Ordinary Least Square (OLS) and Generalized Least Square (GLS) regressions were used for statistical analysis. The study finds that profitability among others has a significant and positive effect on value of a firm.

In Indonesia, Hermuningsih (2013) examines the influence of profitability, growth opportunity and capital structure on firm value for 150 companies listed on the Indonesia Stock Exchange (ISE) for the period 2006 to 2010. Using Structural Equation Model (SEM), result shows that profitability positively and significantly affects the company's value. Sabrin et al. (2016), also examine the effect of profitability on firm value for manufacturing companies listed in ISE for the period 2009 to 2014. Result of Path analysis shows that profitability positively affects the firm value of the firms. In addition, Lestari and Armayah (2016), study the effect of profitability on company value for 10 manufacturing companies listed in ISE for the period 2009 to 2014. Empirical results from OLS regression analysis show that profitability variability explains change in company value. Return on Investment and Return on Equity have significant positive effect on company value, while Net Profit Margin has significant negative effect on company value. This panel study only used OLS regression.

Again, Panji (2018) examines the effect of managerial ownership and profitability on firm value for 15 foods and beverages companies listed on the ISE for the period 2012 to 2015. Using OLS regression, the result shows that profitability negatively affects firm value. In the same vein, Pratiwi (2020) explores the effect of capital structure, profitability and size on firm value using a sample of 31 companies listed on ISE for the period 2014 to 2018. Using SEM, the findings show that profitability affects firm value positively.

Moreover, Sari and Sedana (2020) study the intervening effect of capital structure on the relationship between profitability and liquidity on firm value using a sample of all the construction and building companies listed on the ISE for the period 2013 to 2017. SEM was used to analyze the data and the result shows that profitability has a positive and significant effect on firm value. Furthermore, Robert (2021) studies effect of profitability, firm size, equity ownership and firm age on firm value of 65 manufacturing companies listed on the Indonesian Stock Exchange for the period 2012 to 2019. Using SEM, the result shows that profitability has positive and significant effect on firm value.

In Philippines, Sucuahi and Cambarihan (2016), conduct a study to determine the factors that influence the firm value of 86 diversified listed companies for the period 2014, using OLS regression, and the results, show that profitability has significant positive effect on firm value. In Nigeria, Adedoyin (2011) assesses the effect of corporate firm characteristics in determining share prices of listed firms on the NSE. A panel data design is adopted using seventy-two companies for the period 2004 to 2009. Using OLS and GLS regressions, the result indicates that profitability has insignificant positive relationship with share price in both models.

In a related development, Uwubanmwen and Obayagbona (2012), conduct a study on the impact of company fundamentals on equity returns in Nigeria using a sample of eight companies for the period 2000 to 2011. GLS regression technique is employed in estimating the relationships. The company fundamentals selected in the study was firm's debt, firm size, firm price earnings ratio and the book-to-market value of the firm. Based on the analysis, it discovers that price-earnings ratio has insignificant positive effect on firms' stock returns. In addition to the above, Mahmoud (2017) examines the determinants of capital structure and their combined effect on firm value in Nigerian listed manufacturing companies for the period 2012 to 2016. Using probit regression analysis, the study finds that profitability has significant negative impact on Tobin's Q of listed manufacturing companies in Nigeria.

Impact of Profitability on Financial Distress

Thim et al. (2011) analyze the relationships between financial distress and firms' characteristics and risk of 101 companies selected randomly from Bursa Malaysia during the period 2005 to 2009. Two models were used to analyze the relationships between financial distress and firms' characteristics and risk. The independent variables are profitability, liquidity, firm size, solvency, growth and risk. Size is found to be significant and has a positive relationship with financial distress. Interest coverage ratio has a positive relationship with FND; while profitability has a negative relationship with financial distress.

Also, Baimwera and Muriuki (2014) examine the determinants of corporate FND for non-financial firms listed in the Nairobi Securities Exchange for a three-year period 2007 to 2010. The study adopted a descriptive research design. It analyzed univariate and multivariate accounting-based distress prediction approaches. The Pearson product moment correlation and regression analysis were used to examine the degree and nature of relationship between determinants of corporate FND and corporate FND itself. Growth and profitability were found to have significant influence in determining corporate FND. In the same vein, Yadiati (2017) analyses the influence of profitability on FND on listed Agricultural firms in Indonesia for 3 years starting from 2012 to 2014. Altman Z-score was used to measure FND and 18 Agricultural firms were selected at random which formed the sample size. Multiple regression result shows that profitability has insignificant effect on financial distress.

Ikpesu and Eboiyehi (2018) investigated the effect of capital structure on corporate FND of manufacturing firms in Nigeria by employing panel corrected standard error (PCSE) technique. The variables used in the study are corporate FND, capital structure, firm size, assets tangibility, revenue growth, profitability and age of firms. The outcome of the research reveals that profitability affects corporate financial distress positively.

Sugiarto and Mahanani (2020) determine the effect of profitability, leverage, liquidity and activity on financial distress for a period of one-year 2018. The study was based on quantitative research approach using all manufacturing companies listed on the IDX in 2018 as the population, which were then selected by purposive sampling method to obtain samples. The research uses logistic regression analysis method. The result of the study indicates that profitability has a significant negative effect on financial distress.

Isaya (2021) investigates the determinants of financial distress of insurance companies in Ethiopia. The study used balanced panel data for 11 insurance firms for a period of twelve-year (2008-2019). The study used quantitative approach and explanatory design. The random effect regression shows that profitability is negatively correlated with financial distress.

Impact of Financial Distress on Firm Value

Ahmad et al. (2020) examined the effect of financial distress on firm's performance of non-financial firms registered with Pakistan Stock Exchange. The population of the study is comprised of all the companies

which are related to the non-financial sector and whose shares are traded in Pakistan stock market covering the time span of six years from 2011 to 2016. 161 corporations, listed on PSX have been chosen as a sample which represent the whole population of non-financial companies. Regression result shows that financial distress has significant negative effect on firm performance measured by Tobin's Q.

Kanyugi (2016) examined the effects of financial distress on the value of firms listed at the NSE. Secondary data was collected from the annual reports and financial statements of 34 companies listed on the NSE over a five-year period spanning between 2011 and 2015. Regression result shows that financial distress has a strong positive effect on firm value. This means that high financial distress suggest that the company is facing financial difficulties so that it cannot pay its obligations as at when due and this will affect the firm value because investors will not invest in high-risk companies that also cannot fulfill their obligations.

Profitability, Financial Distress and Firm Value

This sub-section reviews studies on the mediating effect of financial distress on the relationship between profitability and firm value. However, based on the review of literature, evidence of the mediating effect of FND on the relationship between profitability and firm value seems not to have been clearly recorded in previous research. The available one was conducted in Indonesia by Dewi et al. (2021) who examined the mediating effect of FND on the relationship between profitability and liquidity of listed manufacturing companies in Indonesia. The research employed at 170 manufacturing companies listed on IDX for a period of five-years (2016-2020). The data were analyzed using Partial Least Square (PLS). Profitability and firm value are perfectly mediated by financial distress, with liquidity as the independent variable. The study's major finding is that profitability and liquidity have no direct effect on Firm Value, but have an indirect effect via financial distress.

Theoretical Review:

Signaling Theory

Various firm attributes are sent out to the receivers as signals for firm value. These signals could be positive or negative. For instance, high firm profitability signals good firm's prospects. This makes investors to respond positively and consequently leads to an increase in firm value (Putu et al., 2014). Also, based on signaling theory, profitability is information that must be provided by the company. According to Tahu and Susilo (2017), a high profit firm will improve the quality of financial reports which have an impact on increasing profits and the company's stock price. This may send a positive signal to different stakeholders. In essence, signaling theory is used in explaining the relationship between profitability and firm value.

Wreckers Theory

According to Baimwera and Muriuki (2014), and Campbell, Jens and Jan (2005), stocks of distressed firms perform in a manner which is vastly inferior to stocks of financially healthy firms. The wreckers' theory of financial distress seeks to explain the benefits that may step out of financial distress to stakeholders. Therefore, Wreckers theory explains how the financial distress diminishes firm and firm value.

Liquidity and Profitability Theory

According to Hashi (1997), as cited in Isayas (2020) when the firms' indicators (liquidity and profitability) are good it is perceived as healthy, otherwise if the indicators are poor, it is perceived as unhealthy and at risk of bankruptcy. A positive and high level of these two indicators shows a lower risk of bankruptcy. This theory suggests that a firm can fail even though its profitability is good. If the firm's growth rate is significantly greater than the internal rate of return, its revenue flow can be inadequate to finance expenditures and the firm is unable to pay its obligations if it is highly indebted. The firm's profitability

should be greater than the company's growth rate. Hence, liquidity and profitability theory describe the relationship between profitability and financial distress.

3.0 Methodology

The study is conducted using correlation research design and used quantitative research approach in order to examine the mediating effect of financial distress on the relationship between profitability and firm value of listed non-financial services firms, covering the period of ten-years (2011-2020). The population of the study consists of all the non-financial services firms listed on the Nigerian Stock Exchange as at 31st December, 2020. The population of the study is all the 113 non-financial firms listed in Nigerian Stock Exchange as at 31st December, 2020. The study uses filtering to arrive at the new population of the study, which is in line with Rabiu (2018). This filter requires that a company must be listed without been delisted between 2011 and 2020, which results in 95 companies as new population of the study (see Table 1).

Table 1: Population of the Study

S/No	Sectors	Population	Sample Size
1	Agriculture	5	4
2	Conglomerate	6	5
3	Construction /Real Estate	8	2
4	Consumer Goods	21	16
5	Healthcare	10	6
6	ICT	7	5
7	Industrial Goods	14	10
8	Natural Resources	4	3
9	Oil and Gas	12	7
10	Services	26	16
Total		**113**	**74**

Source: Nigerian Stock Exchange website (www.ngxgroup.com)

Purposive sampling technique is used in selecting the sample size of the study which ensures that all the selected companies have complete data required for the study. Thus, 74 listed non-financial service firms emerge as the sample size of the study.

Variables and their Measurements

For the purpose of this study, the dependent variable is Firm value, independent variable is profitability, mediating variable is financial distress and lastly, age and size serve as control variables.

Tobins' Q is used as the dependent variable and is generated from the calculation of a company's market value of equity and book value of debt, divided by the company's total assets. It is given as ratio of equity and debt to total asset (Rabiu, 2018).

Independent Variable

Profitability: The measurement of profitability used in this study is the Return on Asset (ROA), that is, profit after tax divided by total asset, as used by Olanises et al. (2023), Dewi et al. (2021) and Rabiu (2019).

Mediating Variable

Financial Distress: FND is measured using the Altman Z-Score. It is used to calculate the financial difficulties or economic failure experienced by the company, as well as predicts the risk of company bankruptcy. Altman's 1968 model takes the following form:

$$Z = 0.012A + 0.014B + 0.033C + 0.006D + 0.999E$$

Thus, this was later translated to; Z = 1.2A + 1.4B + 3.3C + 0.6D + .999E

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, Z = Overall index. Z-score is calculated by multiplying each of the financial ratios by an appropriate coefficient and then summing the results (Baimwera & Muriuki, 2014). The critical categories used by Altman to predict FND, based on Z score model, are as follows: For Z > 2.6: "Safe" Zone; the company is in a non-bankruptcy zone, it is financially healthy; Z= 1.1 - 2.6: "Grey" Zone; the company should be on alert and exercise caution on fiscal health; and Z < 1.1: "Distress" Zone; the company is in FND, probability of bankruptcy is very high.

The control variables included in the model are firm size and firm age. Firm Size refers to the dimension of a firm in terms of whether a company is small or large which could be measured in terms of total assets, net assets or turnover (Adamu, 2018). This is given as: Firm Size = Natural Logarithm of Total Asset. Firm Age: Age means year of incorporation or year of listing. It is the number of years passed since the company was incorporated or listed on the stock exchange. In this study, year of listing is used as a proxy of firm age as used by Rabiu (2018). **Firm Size:** This refers to the dimension of a firm in terms of whether a company is small or large which could be measured in terms of total assets, net assets or turnover (Adamu, 2018). This is given as: Firm Size = Natural Logarithm of Total Asset

Firm Age: Age means year of incorporation or year of listing. It is the number of years passed since the company was incorporated or listed on the stock exchange. In this study, year of listing is used as a proxy of firm age as used by Rabiu (2018).

The techniques of data analysis used in this study include descriptive statistics which is used in order to describe the dependent and independent variables of this study using the mean, median, maximum, minimum and standard deviation of the variables; correlation analysis and regression analysis. Correlation matrix is used to determine the level of association between profitability, FND and firm value. Also, regression analysis is used to establish whether FND mediates the relationship between profitability and firm value. This study adopts the Zhao et al. (2010) models to establish the mediating effect of FND in the relationship between profitability and firm value.

Furthermore, the selection of the appropriate technique among the many multivariate statistical tools available depends on the measurement of the study. The study used Structural Equation Modeling (SEM). SEM has advantage over traditional multivariate techniques; firstly, it is explicit in assessment of measurement error. Secondly, its estimation power of latent (unobserved) variables via observed variables and finally, model testing where a structure can be imposed and assessed as to fit of the data (Kaplan, 2001). To test the indirect effect, MEDSEM command was used to test the significance level.

Model Specification

The current study adopts Memon et al. (2018), Mackinnon et al. (2012) and Zhao et al. (2010) in testing the indirect effect. They concluded that to test mediating effect, regressing the independent variable on the dependent variable does not necessary because it represents a total effect, therefore can be misleading. According to them what is crucial is for the indirect effect to be significant. Thus, the relationship between profitability and firm value is presumed to be mediated by financial distress. Figure 1 below clearly shows the direct and indirect paths.

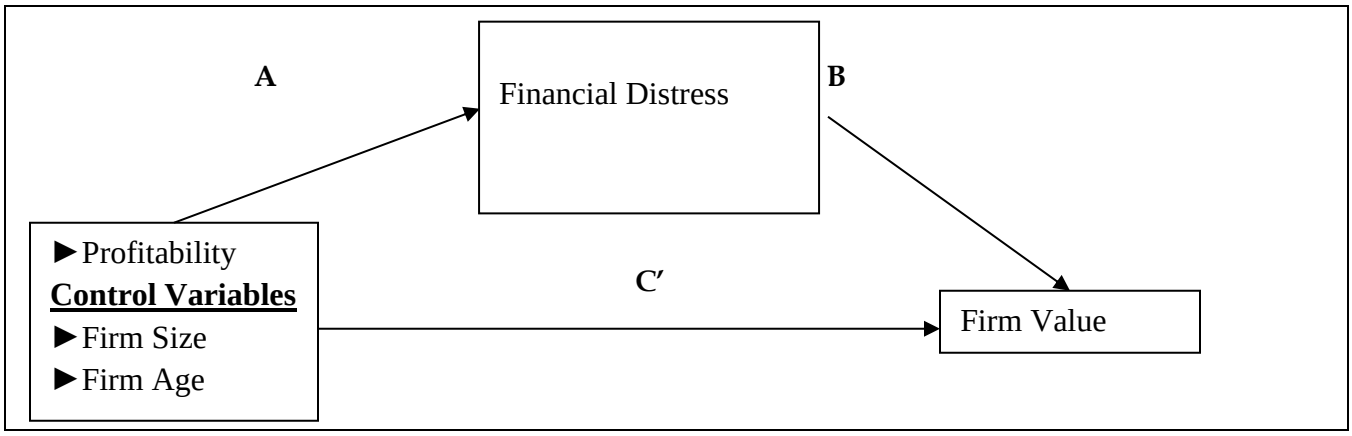

Figure 1: Statistical Diagram

From Figure 1, the relationship between profitability and financial distress represents the direct effect (Path A), while the statistical relationship between financial distress and firm value represents Path B and the impact of profitability on the firm value through financial distress is represents by **C′** (indirect effect). Thus, adopting Mackinnon et al. (2012) and the recommendation of Memon et al. (2018), the study used the following models, which is a modification of Dewi et al. (2021). The functional relationship of the variables:

TQ = *f* (ROA, AZ-SCORE, FAGE & FSIZE)

$AZ\text{-}SCORE = \beta_o + \beta_1 ROA_{it} + r_1 FAge_{it} + r_2 FSize_{it} + \mu$ ……Model 1

This model was used to predict the impact of mediator (financial distress) on independent variable (profitability);

$TQ = \beta_o + \beta_1 Roa_{it} + \beta_2 AZ\text{-}SCORE_{it} + r_1 FAge_{it} + r_2 FSize_{it} + \mu$ ……..…...…Model 2

The second model was used to test the mediating effect of financial distress on the relationship between profitability and firm value.

Where:

TQ = Tobin's Q of company "i" in year "t"

ROA = Return on asset of company "i" in year "t"

AZ-SCORE = Altman Z-Score of company "i" in year "t"

FSIZE = Firm size of company "i" in year "t"

AGE = Firm age of company "i" in year "t"

βo = Constant

β_1 and β_2 are the coefficients to estimates

r_1, r_2 = Parameters of the control variables

μ = Error term

4.0 Results and Discussion

This section presents the results of the analysis. The descriptive statistics, correlation and regression analysis were discussed in the section.

Descriptive Statistics

Table 2 presents the descriptive statistics of the variables included in the Regression Models as presented. Therefore, the mean, standard deviation, minimum value and maximum value are depicted in the table below:

Table 2: Descriptive Statistics Result

Variables	Obs.	Mean	Std. Dev.	Min	Max
Tobin's Q	740	1.3656	0.9754	0.5	4.3
ROA	740	0.0240	0.0919	-0.1988	0.1944
FSIZE	740	7.1064	0.7946	5.24	9.31
FAGE	740	26.5945	13.6190	2	56
AZ-Score	740	5.11	2.90	-1.93	9.75

Source: STATA 14 Outputs.

Table 2 reveals that the firm value of listed non-financial service firms has a mean of ₦1.37. This means that the sampled firms have average firm value of ₦1.37 with the minimum of 5k and the maximum of ₦4.3. The standard deviation of 98k which is lower than the mean value indicates that there is low variation of firm value among the firms. In the same vein, the profitability has on average 2k. In other words, for every 100 naira of asset the firms can generate 2k profit after tax. On the other hand, the minimum value -0.1988 implies that some firms incurred losses within the period of the study with a maximum value of 0.1944. Standard deviation of 0.0919 implies that there is significant dispersion in ROA among the firms. Company size has a mean value of 7.1064 with minimum value of 5.24 and a maximum value of 9.31. Standard deviation of 0.7946 indicates that there is wider deviation from the mean among listed firms with regards to size.

Furthermore, the age of listed non-financial service firms has a mean of 26.5945 (27) years. This means that the sampled non-financial service firms have average year of listing of 27 years. The minimum and maximum years of listing are 2 and 56 years respectively. The standard deviation of 13.6190 years which is lower than the mean indicated that there is no wider dispersion among the years of listing of the sample firms. Finally, the average value of AZ-SCORE is 5.1136, which implies that non-financial services firms included in the sample are in safe zone. The minimum and maximum values are -1.93 and 9.75 with a standard deviation of 2.8971. The result indicates the existence of non-financial services firms in the distress zone and moderate variation in the distress level of the sampled firms.

Correlation Matrix

The correlation matrix measures numerically the association between all the pairs of variables. The Table 3 presents the association of the dependent variable and Explanatory variables. The correlation matrix as per Table 3 shows the association between all pairs of variables used in the regression model. Return on asset has a positive and weak association with firm value with correlation coefficient of 0.2184. Firm size and age have positive and very weak correlation with the firm value with correlation coefficients of 0.0586 and 0.0572 respectively.

Table 3: Correlation Matrix Result

VARIABLES	TOBIN'S Q	ROA	FSIZE	FAGE	AZ-SCORE	VIF	I/VIF
TOBIN'S Q	1.0000						
ROA	0.2184	1.0000				1.07	0.9362
FSIZE	0.0586	0.2522	1.0000			1.09	0.9196
FAGE	0.0572	0.0475	0.1415	1.0000		1.02	0.9798
AZ-SCORE	-0.10	0.64	0.02	0.07	1.0000	1.01	0.99

Source: STATA 14 Outputs.

These means that increase in profitability, firm size and firm age lead to small increase in firm value of the sampled firms. The FND however, has a negative and very weak association with the firm value (correlation coefficient = -0.1022). The negative correlations imply that as the FND increase firm value decreases and vice versa.

Also, profitability has a positive and moderate association with FND (correlation coefficient = 0.6416). Firm size and firm age have a positive and very weak association with FND with correlation coefficients of 0.0005 and 0.0703 respectively. The values on the diagonal are all 1.0000 which shows that each variable is perfectly correlated with itself. The highest correlation between the variables is 0.6416, which is evidence of absence of multicollinearity in the variables. Similarly, to determine the presence of multicollinearity problem, a Variance Inflation Factor (VIF) tolerance test is also carried out, the results of which provide evidence of the absence of Collinearity. This is because the results of the VIF test ranges from a minimum of 1.01 to a maximum of 1.09.

Regression Results

This sub-section presents the regression result of the mediating effect of FND on the relationship between profitability and firm value of listed non-financial firms in Nigeria, using Structural Equation Modeling (SEM). Table 4 showed the estimation result of direct effects (profitability and financial distress).

Table 4 Impact of Profitability on Financial Distress (Direct Effects)

Variables	Coefficient	Std. Err.	z	P>/z/
ROA	21.5610	0.8931	24.14	0.000
FSIZE	-0.6603	0.1043	-6.33	0.000
FAGE	0.0135	0.0059	2.29	0.022
_CONS.	8.9290	0.7357	12.14	0.000
R-Squared	0.4434			
P-Value	0.0000			
Likelihood	-5700.6044			
OBS	740			

Source: STATA 14 Outputs.

From Table 4, the p-value indicates fitness and reliability of the model to show statistically significant relationship between profitability and FND variables. Hence, the p-value of 0.0000 provides evidence that the model was fit. The cumulative R^2 is 44% (0.4434), which gives cumulative effect of explanatory variables jointly on the dependent variable. This means that 44% of the total variation in FND of listed non-financial services firms in Nigeria is caused by explanatory variables while the remaining 56% of the total variation in the FND is caused by other variables not included in model two.

The result revealed that (ROA, FSIZE and FAGE) have significant impact on FND of listed non-financial services firms in Nigeria. The result reveals profitability affected FND positively (coefficient 21.5610; P-value 0.000). This means that profitability influences FND. Agency theory suggests that a firm can fail even though its profitability is good. If the firm's growth rate is significantly greater than the internal rate of return, its revenue flow can be inadequate to finance expenditures and the firm is unable to pay its obligations if it is highly indebted. The finding is similar with Baimwera and Muriuki (2014) and Ikpesu and Eboiyehi (2018), and contrary to Yadiati (2017).

Profitability, Financial Distress and Firm Value

Model three tests the nature of indirect effects of FND on the relationship between profitability and firm value of listed non-financial services firms in Nigeria. In this analysis, Monte Carlo model was used to determine the level of significance of the indirect effects. The approach involves computation of the indirect effect and standard errors estimates for the separate coefficient for the full sample as presented in Table 5 and Table 6:

Table 5: Result of Indirect Effect (Profitability, Financial Distress and Firm Value)

S/No	Path	Coefficient	Conf.	Interval	Z-Value	P-Value
1	ROA ---> AZ-SCORE --->TOBIN'SQ	-0.263	-0.320	-0.209	-9.301	0.000

Source: Stata Output 14.0 Outputs 2023

Table: 6: Significance Testing of Indirect Effect

Estimates	Delta	Sobel	Monte Carlo*
Indirect effect	-0.264	-0.264	-0.263
Std. Err.	0.029	0.028	0.028
Z-value	-9.102	-9.369	-9.301
P-value	0.000	0.000	0.000
Conf. Interval	-0.321, -0.207	-0.320, -0.209	-0.320, -0.209

Source: Stata Output 14.0 Outputs (MEDSEM-Command) 2023

Table 5 and Table 6 present the MEDSEM approach in testing the significance level of the indirect effect of FND on the relationship between profitability and firm value of the listed non-financial services firms in Nigeria. FND plays the role of mediator variable in the relationship between profitability and firm value. The indirect effect result shows that profitability has shown a beta coefficient of (-0.263) and p-value of 0.000, this means that profitability has a negative relationship with firm vale through FND. This can also be confirmed with the LLCI and ULCI of (-0.320 and -0.209) respectively. This means there is a competitive mediation (partial mediation).

Also, the ratio of Indirect to Total Effect (RIT) of 121% is implies that about 121% of the effect of profitability on firm value is mediated by FND (See Appendix). The result shows that there is domination of total effect of profitability on firm value, and also the meditational effect using Monte Carlo test approach is significant. This can be confirmed with a p-value of (0.000), this means there is mediation. This implies that FND plays the role of a mediating variable in the relationship between profitability and firm value of listed non-financial services firms in Nigeria. The finding is similar with Dewi et al. (2021) and Ndicu (2018).

5.0 Conclusion and Recommendations

This study examines how FND mediates the relationship between profitability and value of listed non-financial services firms in Nigeria, the paper concludes that profitability significantly influences both FND and value of listed non-financial firms in Nigeria. Therefore, in accordance with the Modigliani and Miller irrelevance theory, profitability of listed Nigerian non-financial service firms influences their value. Also, FND has negative and significant effect on firm value. This is in line with Wreckers theory,

which explains how the decrease in FND increases firm value. Finally, FND partially mediates the relationship between profitability and value of listed non-financial services firms in Nigeria. Hence, the study recommends among others that listed non-financial firms in Nigeria should put profitability into consideration since its effect reduces FND and increases the firm value.

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