CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF COMPANIES: THE MODERATING ROLE OF ENVIRONMENTAL DYNAMISM AMONGST LISTED NIGERIAN ICT FIRMS

[1]*Muhammad Yusuf*, [2]*Bala Ado Kofar Mata*, [3]*Abdullahi Bala Ado*
[1&2]*Department of Business Admin & Entrepreneurship, Bayero University Kano, Nigeria,*
[3]*Department of Accounting, Al-Qalam University, Kastina, Nigeria,*

Abstract

This study examined the moderating role played by environmental dynamism on the relationship between leverage and profitability in the Nigerian Information and Communication Technology (ICT) sector. Seven out of the ten listed ICT companies on the Nigerian Stock Exchange were analyzed. The study employed ex-post facto research design, using a data of 6 years period, between 2010 and 2015. The study used Multiple Regression Model as the technique of analysis using STATA software version 13. The study revealed a negatively significant relationship between leverage and return on investment (ROI) but a positive moderating effect of environmental dynamism on their relationship. The study also revealed a positively significant relationship between leverage and return on equity (ROE) but a negative moderating effect of environmental dynamism on the relationship. The study concluded that environmental dynamism moderates the relationship between capital structure and financial performance of the ICT companies listed in Nigeria. The study therefore recommended that ICT companies should not blindly adopt leverage as a means of improving their financial performance without giving due consideration to the environment within which they operate.

Keywords: Environmental dynamism, Capital structure and Financial Performance

Introduction

A truly excellent firm must strive to balance the competing claims of its various stakeholders, in order to ensure their continuing cooperation (Mackey, 2008). Wang, Tong, Takeuchi and George (2016) suggested that Corporate Social Responsibility (CSR) resolves a lot of issues within the operating environment. The performance of a firm's, and the strategies that it pursues, can often be interpreted differently by the firm's multiple stakeholders. Investors in a firm may welcome, for example, the firm's shift from labour intensive process to the adoption of computers, while the workers' union may find the option objectionable. The community at large may be apprehensive of the option's impact on the local economy. The increasing power of various stakeholder groups and their multiple, contradictory and often changing preferences, compounds the problem of ensuring their satisfaction (Fassin, 2009). This is why Bryson (2018) describes the present-day business environment as increasingly uncertain and interconnected.

However, there are varying views in the literature on what constitutes performance.

Traditional perspectives on performance tend to ignore the fact that organizations also perform in other, less observable arenas. Their performance in these areas may in some cases be more powerful shapers of future possibilities than how they measure up on traditional criteria such as Return on Investment, Return on Sales, Growth in Revenues, etc. as identified by (Felicio & Freire, 2016). To obtain a comprehensive understanding of the performance relationship relative to the construct of interest, it is important to use a strong performance indicator. Given these considerations, Return on Investment (ROI) and Return on Equity (ROE) are selected as the financial performance measure for the study.

One of the widely reported concepts related to higher performance, especially in the corporate finance literature is the ability to constitute optimum capital structure. This is that capital structure which balances the risk of bankruptcy with the tax savings of debt. Once established, this capital structure should provide greater returns to stockholders than they would receive from an all equity financed firm (Akinlo, 2011). The belief by some on the existence of an optimal capital structure generated a lot of debates and subsequent researches vary on whether optimumcapital structure is positively related to performance or negatively related. There is therefore the need to test the validity of this argument. Here, the key argument is that optimal capital structure will balance the benefit of leverage (tax deductibility and increased ROE) with the cost of servicing the debt and the increased risk of bankruptcy. Since the pivotal point is the degree of leverage, financial leverage is used to examine the capital structure in this study.

Another factor which influences the performance of firms is the competitive environment. In order to survive and succeed, an organization must find an appropriate match between the demands of its competitive environment and its internal management systems. Across industries there are significant differences in the environmental characteristics impacting firms. Most relevant among these characteristics is environmental dynamism, defined as the volatility and unpredictability of the changes that a business unit has to deal with (Richard *et al.,* 2019). In line with Xue, Ray and Sambamurthy (2012), the study adopts Operating Income as proxy for Environmental Dynamism. It has become more difficult for business managers to run their businesses today due to globalization and other changes in the business world. These lead to frequent changes in the business environment and consequently the business needs. In this situation, actors (including top managers, stockholders, debt holders and others) experience increased inability to assess accurately both the present and future state of the environment (Simerly & Li, 2000). This also limits their ability to determine the potential impact of decision making on current and future business activities, and to determine viable alternatives which managers can pursue (Geissler & Krys, 2013).

Information and Communication Technology (ICT) has witnessed an unprecedented evolution in the last two decades. However, the ICT sector in Nigeria is relatively recent (Ogunsola & Aboyade, 2005). The slow development of the ICT sector in Nigeria has been attributed to the reluctance of managers especially in the public sector to adopt or switch to the use of ICT (Osibanjo & Damagun, 2011). Other problems confronting the ICT sector include lack of infrastructure to support ICT operations and lack of government policies to encourage ICT adoption. Furthermore, the Nigerian economy is experiencing recession (Teriba, 2016). And this will bring about fresh liquidity and insolvency problems to firms operating in the country. Hence, little has been said about the performance of the ICT sector

in Nigeria. This work, therefore, will contribute to the available literature on the sector. Olokoyo (2013) reveals that listed firms in Nigeria are rarely financed with debt. Rather, they are either financed with equity capital or a mix of equity capital and short-term financing. The ICT firms are not exception.

Base on the forgoing, the study seeks to examine the relationship between capital structure and financial performance as well as the moderating effect of environmental dynamism on this relationship. To achieve this broad aim and contribute a solution to the aforementioned issues, the study will examine the relationship between capital structure and financial performance of the selected ICT firms. The study will also examine the moderating role of environmental dynamism on the relationship between capital structure and firm's financial performance of the selected firms.

Literature Review

Constituting an appropriate capital structure is a crucial decision for any profit oriented organization. The decision is important because of the need to maximize returns to various organizational constituencies and also because of the impact such a decision has on an organizations ability to deal with its competitive environment. The prevailing argument, extended by Brusov, *et al.* (2018), is that an optimal capital structure exists which balances the risk of bankruptcy with the tax savings of debt. Once established, this capital structure should provide greater returns to stockholders than they would receive from an all-equity firm. However, empirical studies that have tried to probe this theoretical relationship have produced results which raise as many questions as they provide answers (Ghosh, 1992; Lemmon & Zender, 2019). Further, despite the apparent benefits of leverage, there are many firms that avoid significant levels of debt altogether (Gardner &Trzcinka, 1992). Finding an explanation for this difference between theory and practice has proven to be a major challenge (Chung, 1993).

In their study on capital structure and corporate performance, Xiang, Wu and Miao (2014) found a significantly positive correlation between long term debt ratio and corporate performance. They, however, reported a significantly negative correlation between short term debt ratio and corporate performance. What the study failed to recognize is the impact of the environment in which the firm operate on its performance. Also, Fred (2015) in his study of the effects of capital structure on profitability of manufacturing companies listed in Dares Salaam, obtained mixed results. A negative relationship revealed between debt to equity ratios and return on equity. Debt to asset ratios indicated a positive relationship with return on equity when random effect regression was used. Other results indicated a positive relationship between ROA and all capital structure variables using fixed effect regression method. Both, Correlation and regression models indicated a positive relationship between debt to assets ratios and company profit in terms of ROE and ROA while only debt to equity ratios showed a negative relationship with ROE as indicated by both methods.

Another study conducted by Hasan, Ahsan, Rahaman and Alam (2014) to investigate the influence of capital structure on firm performance in Bangladesh using pooling panel data regression method, revealed that, EPS is significantly positively related to short-term debt while significantly negatively related to long-term debt. Also, that there is significant

negative relation between ROA and capital structure. On the other hand, no statistically significant relation exists between capital structure and firm's performance as measured by ROE and Tobins Q. they concluded that capital structure has negative impact on firm's performance which is consistent with the proposition of Pecking Order Theory. Furthermore, a study conducted by Javed, Younas and Imran (2014) revealed mixed results. Capital structure showed positive impact on firm performance when return on assets (ROA) was used as dependent variable. When return on equity (ROE) was used as dependent variable then debt over assets ratio (DTA) showed positive impact but equity over assets ratio (EQA) and long-term debts over assets ratio (LDA) revealed negative impact over dependent variable and when return on sales (ROS) was used as dependent variable then DTA and EQA showed negative link to ROS but LDA revealed positive impact over ROS. They thus, concluded that capital structure has impact over firm performance and managers need to exercise carefulness when taking decision regarding the choice of capital structure.

In his own study of capital structure and performance of Ukrainian firms, Lavorskyi (2013), found that negative effect of leverage on performance tends to exist for high-growth firms, whereas positive effect dominates for low-growth companies for Ukrainian firms. In particular, they found that leverage negatively affect firm performance, measured as the return on assets, operating profit margin, or total factor productivity. And that the purported relationship between leverage and firm performance remains stable with a different leverage measure, long-term interest-bearing debt instead of total interest-bearing debt. When the analysis was repeated for separate industry subsamples, it was revealed, though, that the only two industries in which the relationship holds are manufacturing and transport/energy.Ilyukhin, (2015) studied the impact of financial leverage on firm performance of a large sample of Russian joint- stock companies and found that leverage has negative impact on performance. This result contradicts his initial assertion that leverage can be treated as a tool for disciplining management. As such a positive relationship between financial leverage and firm performance is expected. He therefore, attributed the result to ineffective corporate control of Russian market, debt attracting difficulties, high growth potential and high interest rates for financing through debt.

However, apart from the Brusov, et al.(2018), hypothesis that leverage is inconsequential on performance, an alternative hypothesis also exist which states that higher leverage is associated with long-term performance declines. Debt holders are assumed to be more risk averse than equity holders (Kusi, et al., 2020). Consequently, they force managers to abandon risky projects and cut back on R&D expenditures. There is evidence suggesting that a negative relationship exists between R&D intensity and long-term debt (Dang, Houanti, & Bonnand, 2016). Leverage is, therefore, associated with decline in firm's innovativeness and the long-run consequences of such decline in innovativeness is, a worsening of performance (Majundar & Chhibber, 1999; Teriba, 2016).

In explaining the capital structure of the firm as well as its effects on performance, a number of theories have been advanced both for and against. Among them is the traditional view that states that debt capital is cheaper than equity. The implication of this assertion is that the cost of debt plus the increased cost of equity together on a weighted basis will be less than the cost of equity that existed on equity before debt financing (Sadiq, Kachollom, Dasuki, & Yusuf, 2017).One of such theories is the trade-off theory which asserts that companies optimize

their debt level such that marginal tax advantages of additional borrowing are offset by the increase in the costs of financial distress. The next theory is the pecking order theory pioneered by (Myers &Majluf 1984; Myers, 1984). This theory is rooted on the notion of asymmetric information that corporate managers know more about their company's prospects, risk and value than do outside investors. According to the theory, companies prefer to finance their projects from internally generated cash flows. Signaling effect was proposed by Ross (1977) based on asymmetric information. This theory states that investors believe higher levels of debt will imply higher quality and higher future cash flows. This means that lower quality firms with higher expected costs of bankruptcy at any level of debt cannot follow the steps of higher quality firms by incurring more debt.

In general, many empirical studies have examined the validity of these theories, but no consensus has emerged among researchers as regards the theory that best explains the capital structure choice. As clearly stated by Myers (2001), there are no universal theory of debt-equity choice and no reason to expect one. According to the agency theory argument developed by Berle and Means (1932), firms pursuing riskier business activities, such as those associated with more dynamic environments, may find it difficult and undesirable to use a greater amount of debt. The Transaction Cost Economics (TCE) theory suggests that the ability of firms to adapt to changes within the environment either through responding to market signals or changes in governance structures produces organizational efficiencies that improve the economic performance of the firm (Williamson, 2008). In summary, the research into capital structure from a financial management perspective provides support for an argument that environmental factors could have an impact on the capital structure decision. Thus, this study aligns with the Agency theory which suggests a link between the capital structure decision of an organization and the environment within which it operates.

In order to be guided in analyzing the relationship between capital Structure and performance as well as the moderating role played by environmental dynamism, this study put forward the following hypotheses:

H_1: Leverage has no significant effect on the ROI of ICT companies in Nigeria.
H_2: Leverage has no significant effect on the ROE of ICT companies in Nigeria.
H_3: Dynamic business environment does not moderate the relationship between leverage and ROI of ICT companies in Nigeria.
H_4: Dynamic business environment does not moderate the relationship between leverage and ROE of ICT companies in Nigeria.

Methodology

This study focuses on listed ICT firms in Nigeria as contained in the fact book of the Nigerian Stock Exchange (NSE) 2015 edition. This implies that the population of the study covers all the ICT companies listed and still in operation in the NSE between 2010 and 2015 that meet the requirements of the study. The choice of the base year is informed by the fact that the ICT sector is relatively new in Nigeria and most of the firms were listed in the NSE around 2009. There are ten ICT firms listed in the NSE as at 31st December 2015. However, only 7 of the 10 firms met the requirements of the study. The study outlined some filters which must be

satisfied before a firm forms part of the study group: (1) the firm must have been listed and remain listed on the NSE from the beginning to end of the study period, (2) it must have complete financial records for the period covered by the study, and (3) the financial records of the firm must be accessible to the researcher. Thus, Judgmental sampling method was adopted for the study. Ex-post facto research design has been selected for this study in order to be able to examine the relationships among the variables of the study. This design is considered suitable for this study because the study examines the existing secondary data of the firms.

Variables and Measurement

Dependent variable: Financial Performance

Measuring financial performance has been a major challenge for scholars and practitioners as well. Performance is seen as a multidimensional construct Kelly, (2016), and to obtain a comprehensive understanding of the performance relationship relative to the constructs of interests, it is important to use a strong performance indicator. Thus, instead of using a short-term indicator of performance it is desirable to study how the variables of interest will influence performance over a period of time. Given these considerations, return on investments (ROI) and Return on Equity (ROE)are selected as the performance measure, and averaged the data over a 6-year time period from 2010 to 2015. ROI is operationalized as operating income before interest and taxes, divided by total invested capital (which includes total long-term debt, preferred stock, minority interest, and total common equity). On the other hand, ROE is operationalized as operating income before interest and taxes divided by total equity.

Independent Variable: Capital Structure

The key argument in financial management literature is that there is an optimal capital structure which balances the benefits of leverage (tax deductibility and increased ROE) with the costs of servicing the debt and the increased risk of bankruptcy. An optimal capital structure would be one in which the marginal costs are equal to marginal benefits. Since the pivotal point is the degree of leverage, financial leverage is used to examine the capital structure. Financial leverage is defined as the ratio of debt to equity. As firms increase their use of fixed-charge financing as a substitute for common stock they increase the required rate of return on leveraged shares, and thereby increase the firms unsystematic risk. The measure of leverage consists of all fixed charge securities in the form of fixed-charge debt. The financial leverage measure for each firm in the data set is average over a 6-year period (2010-2015) to control for spurious events.

Moderating Variable: Environmental Dynamism

Researchers studying organizational environments have over the years used a number of variation-based indexes to measure the environmental dynamism construct. Agyapong, Zamore, and Mensah (2019) observed convergence between dynamism measure derived from sales and operating income and content analysis of annual reports. Xue, Ray and

Sambamurthy (2012) used the volatility of industry sales and the volatility of industry operating income to measure dynamism. Xue, Ray and Gu (2011) also replicated this approach. In addition, Harrington and Kendall, (2005) asserted that *knowledgeable managers' perceptions match archival measures of dynamism.*These set of empirical evidence became the basis of using variations in industry revenue as the key indicator when assessing environmental dynamism.

Measures of environmental volatility have been classified into objective and perceptual (Sawyerr, 1993). Both objective and perceptual measures have their weaknesses. Supporters of the perceptual measures argue that firms respond to the environment perceived and interpreted by the decision makers and that the environmental conditions that are not noticed do not affect managements decisions nor actions (Anderson & Paine, 1975; Akpinar, 2017). On the other hand, those who suggest the use of objective measures recognize the fact that other variables besides the environment also influence perception (Weiss &Wittmann, 2018). In this study, the researcher follows Agyapong, Zamore, and Mensah (2019) and use variations in operating income as measure of environmental dynamism. Specifically, these measures, over 6 years (2010-2015) is tested in line with the stages for testing moderation effect suggested by (Baron & Kenny, 1986; Cunningham &Ahn, 2019).

The study makes use of descriptive statistics, correlation and regression techniques in analyzing the data for the study. Descriptive statistics to bring out the characteristics of the data of the firms under review on capital structure and performance as well as environmental dynamism variables. The correlation technique is used to show the extent to which two or more variables fluctuate together. It is also used to show whether one thing is caused by another; that is the degree to which the independent variable explains the dependent variable. It is suitable in this study in establishing the nature of association between ROI and ROE, Leverage and Environmental dynamism. In other words, the study examines the extent to which change in firm performance is caused by change in leverage. The research uses multiple regression analysis employing the Panel data regression technique. Panel data has the advantages of enabling the researcher to observe the behavior of entities across time and include variables at different levels or period of analysis. Therefore, it is suitable in this research because the study will analyze a panel of the data from 7 firms over a range of 6 years (2010-2015), using STATA 13. The model of this study is presented as follows:

$$\mathbf{ROI} = \beta_{oit+} \beta_1 LEV_{it} + \beta_2 OI_{it} + \beta_4 LEV_{it}*OI_{it} + e\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..i$$

$$\mathbf{ROE} = \beta_{oit+} \beta_1 LEV_{it} + \beta_2 OI_{it} + \beta_4 LEV_{it}*OI_{it} + e\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.ii$$

Where, ROI refers to Return on Investment**,** ROE depicts Return on Equity**,** β_0 stands for Regression constant**,** β is the Coefficient of independent variable**,** LEV equals Leverage**,** OI stands for Operating Income whereas is the Stochastic error term.

Results and Discussion
Table 1
Descriptive Statistics

Variable	Mean	Minimum	Maximum	Std. Dev	Kurtosis	Skewness
ROI	0.119	-8.109	3.184	1.447	26.702	-4.224
LEV	1.598	20.184	22.784	5.169	12.752	3.370
OI	8.305	6.615	9.102	0.621	3.422	-0.885

Table 1 shows that the measure of financial performance, return on investment (ROI) of the Information and Communication Technology (ICT) companies in Nigeria has a mean value of 0.119 with standard deviation of 1.447, and minimum and maximum values of -8.109 and 3.184 respectively. This implies that, the average performance of the ICT firms in Nigeria is 0.119 to 3.184, and the deviation from both sides of the mean is 1.447. This suggests that, the dispersion of the data from the mean is wide because the standard deviation is quite higher than the mean value. The table also indicates a minimum ROI of **-8.109** implying a situation in which the ROI did not cover much portion of the performance measure in the ICT companies listed in Nigeria. The peak of the data is indicated by the kurtosis value of 26.702, suggesting that most of the values are higher than mean, hence the data did not meet a normal distribution assumption. The coefficient of Skewness of -4.224 implies that the data is negatively skewed (most of the data are on the left-hand side of the normal data curve); thus, the data does not meet the symmetrical distribution assumption.

The table 1 indicates an average proportion of leverage (LEV) of 1.598 with standard deviation of 5.169; the minimum and maximum values are 20.184 and 22.784 respectively. This implies that, on average, the proportion of debt to equity in ICT companies listed in Nigeria is 1.598 and the data deviate from both sides of the mean by 5.169. This suggests a wide dispersion of the data from the mean because the mean value is far away from the standard deviation. The peak of the data is indicated by the kurtosis value of 12.752, suggesting that most of the values are higher than mean, and the data did not meet a normal distribution assumption. The coefficient of Skewness of 3.370 implies that the data is positively skewed (that is, most of the data are on the right side of the normal data curve), implying that the data do not meet the symmetrical distribution assumption.

In addition, the table 1 also indicates an average operating income (OI) 0f 8.305 with standard deviation of 00.621, the minimum and maximum values of 6.615 and 9.102 respectively. The deviation from both sides of the mean is 62%. This also suggests a wide dispersion of the data from the mean because the mean value is higher than the standard deviation. The peak of the OI data is indicated by the kurtosis value of 3.422, suggesting that most of the values are higher than mean, and the data did not meet a normal distribution assumption. The coefficient of Skewness of -0.885 implies that the data is negatively skewed (that is, most of the data are on the left side of the normal data curve), implying that the data do not meet the symmetrical distribution assumption. However, this implies that the data did not follow a normal data distribution assumption. Hence the Khodabandeh, Amiri-Simkooei, and Sharifi (2012) suggest that normality of data does not in any way affect the inferential statistics estimate.

Table 2

Correlation Matrix

Variables	ROI	LEV	OI	LEVOI
ROI	1.000			
LEV	0.008	1.000		
OI	0.295	0.584	1.000	
LEVOI	0.303	0.695	0.423	1.000
Variables	**ROE**	**LEV**	**OI**	**LEVOI**
ROE	1.000			
LEV	-0.333	1.000		
OI	-0.094	-0.008	1.000	
LEVOI	-0.364	0.999	0.014	1.000

The results in Table 2 shows the degree of association between financial performance as represented by ROI and all pairs of independent variables individually between themselves and cumulatively with the dependent variable (ROI) of the study in the ICT companies listed in Nigeria. The table presents a positive relation between financial performance (ROI) and leverage (LEV) from the correlation coefficient of 0.008. This relationship implies that, as the proportion of leverage increases the ROI of the sample firms will also increase. Table 2 shows that there is also a positive association between ROI of the ICT firms and operating income (OI) of the sample firms, from the correlation coefficient of 0.295. This relationship implies that as the proportion of operating income (OI) of the sample firms increases the return on investment ROI will also increase.

Moreover, the table also indicates that the relationship after moderation is not different as a positive correlation exists between ROI and leverage as moderated with operating income (OI) from the correlation coefficient of 0.303. This relationship implies that, as leverage is moderated with operating income (LEVOI) increase the ROI will also improve in the same direction. Similarly, the results in Table 2 show the degree of association between financial performance as represented by return on equity (ROE) and all pairs of independent variables individually between themselves and cumulatively with the dependent variable (ROE) of the study in the ICT companies listed in Nigeria. The table presents a negative relation between financial performance (ROE) and leverage (LEV) from the correlation coefficient of -0.333. This relationship implies that, as the proportion of leverage increases the ROE of the sample firms will deceases. Table 2 shows that there is also a negative association between ROE of the ICT firms and operating income (OI) of the sample firms, from the correlation coefficient of -0.094. This relationship implies that as the proportion of operating income (OI) of the sample firms increases the return on equity ROE will deceases.

Moreover, the table also indicates that the relationship after moderation is not different as a negative correlation exists between ROE and leverage as moderated with operating income (OI) from the correlation coefficient of -0.364. This relationship implies that, as leverage is moderated with operating income (LEVOI) increase the ROE will decreases. The analysis of the relationships between dependent variable ROE and all the independent variable and between independent variables and themselves indicated that is mostly negative. However, to conclude the relation and the impact of the dependent variable (ROE) and all the pairs of

independent variables (leverage and operating income) of ICT firms listed in Nigerian in the regression model of the study is analyzed in the following section.

Table 3
Robustness Test Results

Variables	VIF	Tolerance Values
LEV	2.41	0.415
OI	1.52	0.658
LEVOI	1.94	0.517
Mean VIF	1.95	
Hettest Chi^2& Sig		18.51 (0.000)
Hausman Chi^2& Sig		0.46 (0.928)
LM Test Chi^2& Sig		0.00 (1.000)

Multicollinearity Test: This is to check whether there is a correlation between independent variables which will mislead the result of the study. Table 2 presents the correlation matrix of the linear relationships of the independent variables and themselves. From observation, no variable with a high correlation of above 0.80, therefore, the threat is not too harsh. For that multicollinearity should not be a problem to the statistical inferences derivable from the regression model. To formally substantiate the absence of multicollinearity between the independent variables, collinearity diagnostics of variance inflation factor (VIF) and tolerance values (TV) are observed and all indicated the lack of multicollinearity in the panel data as is shown in table 3. The table indicates that all the VIF are consistently less than 10 and tolerance values consistently less than 1.0 but greater than 0.01**.**

Heteroscedasticity Test: This test is conducted to check whether the variability of error terms is constant or not. The presence of heteroscedasticity indicates that the variation of the error term is not constant which would affect the best linear unbiased estimators (BLUE) of the study. The result of the test reveals that there is a presence of heteroscedasticity because the probability of the chi square is statistically significant at 1% indicating that the data are not **homoscedastic**. This suggests that the original OLS regression will not suit the study. However, as a result, Generalize Least Square regression (GLS) will best suit the study; therefore, fixed and random effect regression was run.

Hausman Specification Test: To be guided on which result will best fit the study between fixed and random effect models, Hausman specification test for fixed and random effect is conducted to select the preferred model. It tests whether the unique errors (stochastic disturbance) are correlated with the independent variables. The result of the test reveals that they are highly correlated because the chi-square probability is not significant at any level of significance (0.9284) which guided the work to interpret the result of the random effect model.

Breusch and Pagan Lagrangian Multiplier (LM) Test for Random Effects: this test is conducted in order to be guided in deciding which regression model best fit the study between the random effect regression model result and the OLS regression model result. This is because there is no significant difference between the two regression models.

However, the result of the LM test with a chi^2 significant at 0.000 suggests that OLS regression model best suit the study. In addition, because of that robust OLS is hereby presented.

Table 4
Regression Results (ROI)

Variable	Beta Coefficients	T-values	P-values
LEV	-0.103	-2.92	0.003
OI	0.066	2.76	0.006
LEVOI	0.680	2.05	0.040
Constant	0.243	1.49	0.137
Wald Chi & Sig			14.86
R^2			0.460
R^2 Adjusted			0.235

Table 5
Regression Results (ROE)

Variable	Beta Coefficients	T-values	P-values
LEV	4.092	5.94	0.000
OI	0.592	2.07	0.005
LEVOI	-0.495	-6.08	0.000
Constant	-4.773	-2.00	0.053
F-Sta& Sig			12.19 (0.000)
R^2			0.490
R^2 Adjusted			0.450

Statistical analysis provided support for the researcher's argument that environments moderate the relationship between capital structure and financial performance. The cumulative R^2 between of 0.460 signified that about 46% of the total variation in financial performance of listed ICT firms is accounted for by the leverage and environmental dynamism used in the study. This implies that the model explains the behavior of financial performance better in relation to the independent variables of the study. Their Wald Chi^2 values of 14.86 which is significant at 1%, indicates that the model is fit and the variables well selected and used in the study. It implies that for any change in the model the performance (ROI) of ICT firms listed in Nigeria will be directly affected. The probability values of the Wald chi^2 which is significant at a level of 1% implies that there is a 99.9 percent probability that the relationship among the two extreme variables are not due to mere chance and as such the independent variable and the moderating variable reliably predict the dependent variable of the study. The R^2Adjusted of 0.235 indicates that other variables other than the ones considered in this study, account for about 24% of the performance of the ICT firms listed in Nigeria.

Table 4 shows that leverage (LEV) has a t-value of -2.92 with a beta coefficient of -0.103 which is statistically significant at 1% significance level. This indicates that, leverage (LEV) has negatively and significantly impacted on the performance (ROI) of ICT firms listed in Nigeria. This further explained that for every 1% increase in the debt as against equity by ICT firms listed in Nigeria, the performance as measured by ROI of the firm will decrease.The

result in respect of the moderating effect of operating income (OI) on performance as shown on table 4 for both unmoderated and moderated variables have t-values of 2.76 and 2.05, and a beta coefficient value of 0.066 and 0.680 respectively; which are significant at 1% level of significance. This indicates that operating income (OI) has both positive significant effects on financial performance (ROI) of ICT firms listed in Nigeria. This implies that for every increase in the operating income for both the moderated and un-moderated, the ROI will also improve. Meanwhile, when leverage is moderated with environmental dynamism, it exact positive effect on financial performance (ROI) of ICT firms listed in Nigeria.

Table 5 shows that leverage (LEV) has a t-value of 5.94 with a beta coefficient of 0.092321 which is statistically significant at 1% significance level. This indicates that,leverage (LEV) has positively and significantly impacted on the performance (ROE) of ICT firms listed in Nigeria. This further explained that for every 1% increase in the debt as against equity by ICT firms listed in Nigeria, the performance as measured by return on equity (ROE) of the firm will increase. The findings also provide an evidence of rejecting the null hypothesis of the study that leverage has no significant impact on the financial performance (ROE) of ICT firms listed in Nigeria.The result in respect of operating income (OI) as shown on table 5for both un-moderated and moderated variables have a t-values of 2.07 and -6.08, and a coefficient value of 0.592 and -0.495 respectively; which are significant at 1% level of significance. This indicates that operating income (OI) has both positive significant effects on financial performance (ROE) of ICT firms listed in Nigeria. It implies that for every increase in the un-moderated operating income, the return on equity will also improve. However, when leverage is moderated with environmental dynamism, it exact negative effect on financial performance (ROE) of ICT firms listed in Nigeria. This implies that an increase in the percentage of moderated leverage with the environmental dynamism (operating income), decreases the financial performance as measured with the return on equity (ROE).

Conclusion and Recommendation

As a result of the foregoing discussion and analysis above, this study concludes that capital structure decision cannot be taken in isolation without giving due consideration to the environment. Doing that, as revealed by the study may negate financial performance. Increase in the percentage of leverage decrease the financial performance (ROI) of ICT firms listed in Nigeria. However, it increases it when moderated with environmental dynamism. This implies that more leverage when the environment is not dynamic improves the financial performance (ROI) of ICT firms listed in Nigeria. The study also concludes that increased leverage improves financial performance (ROE) of the ICT firms listed in Nigeria. However, it decreases performance (ROE) when moderated with environmental dynamism. Environments do not remain the same forever. As such there should be caution in applying the same result irrespective of changes in the environment. The study therefore recommended that ICT companies should not blindly adopt leverage as a means of improving their financial performance without giving due consideration to the environment within which they operate.

References

Akinlo, O. (2011). Determinants of capital structure: Evidence from Nigerian panel data . *African Economic and Business Review (9)1*, 1109-5609.

Akpinar, M. (2017). The exercise of power in inter-organisational relationships in response to changes in the institutional environment: cases from the European automotive industry.

Anderson, C. R., & Paine, F. T. (1975). Managerial perceptions and strategic behavior. *Academy of Management journal*, *18*(4), 811-823.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, *51*(6), 1173.

Baysinger, B., & Hoskisson, R. E. (1989). Diversification strategy and R&D intensity in multiproduct firms. *Academy of Management journal*, *32*(2), 310-332.

Berle, A. A., & Means, G. C. (1932). The modern corporation and private property. New Brunswick. *NJ: Transaction*.

Bryson, J. M. (2018). *Strategic planning for public and nonprofit organizations: A guide to strengthening and sustaining organizational achievement*. John Wiley & Sons.

Brusov, P., Filatova, T., Orekhova, N., & Eskindarov, M. (2018). Capital Structure: Modigliani–Miller Theory. In *Modern Corporate Finance, Investments, Taxation and Ratings* (pp. 9-27). Springer, Cham

Chung, K. H. (1993). Asset characteristics and corporate debt policy: an empirical test. *Journal of Business Finance & Accounting*, *20*(1), 83-98.

Fassin, Y. (2009). The stakeholder model refined. *Journal of business ethics*, *84*(1), 113-135.

Felício, J. A., & Freire, C. R. (2016). From customer motivation to corporate performance. The role of strategic factors and distribution channels of financial service firms. *Service Business*, *10*(1), 135-157.

Fred, S.S. (2015).The Effect Of Capital Structure On Profitability Of Manufacturing Companies Listed   In Dares Salaam. Unpublished MBA Dissertation, Open University of Tanzania.

Gardner, J. C., & Trzcinka, C. A. (1992). All-equity firms and the balancing theory of capital structure. *Journal of Financial Research*, *15*(1), 77-90.

Geissler, C., & Krys, C. (2013). The challenges of strategic management in the twenty-first century. In *scenario-based strategic planning* (pp. 21-41). Springer Gabler, Wiesbaden.

Ghosh, D. K. (1992). Optimum capital structure redefined. *Financial Review*, *27*(3), 411-429.

Harrington R.J. & Kendall K.W. (2005). How Certain are you measuring Environmental Dynamism and Complexity: A Multitrait-Multimethord Approach. *Journal of Hospitality and Tourism Reseach*   (29)2, 245-275

Hasan, M. B., Ahsan, A. M., Rahaman, M. A., & Alam, M. N. (2014). Influence of capital structure on firm performance: Evidence from Bangladesh. *International Journal of Business and   Management*, (*9*)5, 184-194

Ilyukhin, E. (2015). The Impact of Financial Leverage on Firm Performance: Evidence from Russia. Корпоративные Финансы, (2)34.

Javed, T., Younas, W. & Imran, M. (2014). Impact of Capital Structure on Firm Performance: Evidence from Pakistani Firms. *International Journal of Academic Research in Economics and Management Sciences*, (*3*)5, 28-52.

Kelly, J. O. (2016). Strategy Content, Quality Management Practices, Organizational Factors and Performance of ISO 9000 Certified Middle Level Colleges in Kenya. *Unpublished PhD Thesis, School of Business, University of Nairobi*.

Khodabandeh, A., Amiri-Simkooei, A. R., & Sharifi, M. A. (2012). GPS position time-series analysis based on asymptotic normality of M-estimation. *Journal of Geodesy*, *86*(1), 15-33.

Kusi, B. A., Dzeha, G., Gyan, K. K., & Turkson, F. E. (2020). Debt Capital Structure and Credit Information Sharing: Evidence on Listed Firms from an Emerging Market. *Journal of African Business*, 1-18.

Lavorskyi, M. (2013). *The impact of capital structure on firm performance* (Doctoral dissertation, Thesis MA in financial economics. Kyiv School of Economics. Ukraine).

Mackey, A. (2008). The effect of CEOs on firm performance. *Strategic management journal*, *29*(12), 1357-1367.

Majumdar, S. K., & Chhibber, P. (1999). Capital structure and performance: Evidence from a transition economy on an aspect of corporate governance. *Public choice*, *98*(3-4), 287-305.

Myers, S. C. (1984). The capital structure puzzle. *The journal of finance*, *39*(3), 574-592.

Myers, S. C., & Majluf, N. S. (1984). *Corporate financing and investment decisions when firms have informationthat investors do not have* (No. w1396). National Bureau of Economic Research.

Myers, S. C. (2001). Capital structure. *Journal of Economic perspectives*, *15*(2), 81-102.

Ogunsola, L., & Aboyade, W. (2005). Information and Communication Technology in Nigeria: Revolution or Evolution. *Journal of Social Sciences (11)1*, 7-14.

Olokoyo, F. O. (2013). Capital structure and corporate performance of Nigerian quoted firms: A panel data approach. *African Development Review*, *25*(3), 358-369.

Osibanjo, O., & Damagun, Y. (2011). Factors Affecting Application of ICT by Managers in the Nigerian Public Sector. *Economic Sciences Series 63(1)*, 37-44.

Richard, O. C., Wu, J., Markoczy, L. A., & Chung, Y. (2019). Top management team demographic-faultline strength and strategic change: What role does environmental dynamism play?. *Strategic Management Journal*, *40*(6), 987-1009.

Ross, S. A. (1977). The determination of financial structure: the incentive-signalling approach. *The bell journal of economics*, 23-40.

Sadiq, A. I., Kachollom, P. W., Dasuki, S. I., & Yusuf, M. (2017). Effect of Capital Structure on the Performance of Deposit Money Banks. *International Journal of Accounting & Finance Review*, *1*(1), 12-23.

Sawyerr, O. O. (1993). Environmental Uncertainty and Environmental Scanning Activities of Nigerian Manufacturing Executives: A Comparative Analysis . *Srategic Management Journal (14)4*, 287-299.

Simerly, R. L., & Li, M. (2000). Environmental dynamism, capital structure and performance: a theoretical integration and an empirical test. *Strategic management journal*, *21*(1), 31-49.

Teriba, A. (2016, June 28). This Time is Different: There is a Clear Way Forward for the Nigerian Economy. *HBSAN*, pp. 1-8.

Wang H., Tong L., Takeuchi R. & George G. (2016). Corporate Social Responsibility: An Overview and   New Research directions. *Thematic Issues on CSR* (59)2, 6-19.

Williamson, O. E. (2008). Transaction cost economics. In *Handbook of new institutional economics* (pp. 41-65). Springer, Berlin, Heidelberg.

Xiang, C., Wu, X., & Miao, A. (2014). Empirical Analysis on the Relation Between Capital Structure and Corporate Performance of Listed Companies in SME Boards in China. In *Proceedings of the Eighth International Conference on Management Science and Engineering Management* (pp. 1049-1058). Springer, Berlin, Heidelberg.

Xue L., Ray G. & Gu B. (2011). Environmental Uncertainty and IT Infrastructure Governance: A Curvilinear Relationship. *Information System Research*(22)2, 389-399.

Xue L., Ray G. & Sambamurthy V. (2012). Efficiency or Innovation: How do Industry Environments   Moderates the 2 Effects of Firms' IT Asset Portfolio. *MIS Quarterly* (36)2, 509-528.