

# Capital Structure and Performance of Listed Firms: The Moderating Effect of Financial Innovation

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**Abstract:** *The interaction between capital structure, financial innovation and firm performance has attracted both empirical and theoretical debate although yielding inconsistent and mixed outcomes. Hence, this study aimed to determine the link between these three variables using evidence from East African Listed firms. The study adopted a correlation descriptive design. A total of 112 firms that had cross listed their shares across the East Africa Securities Exchange were targeted and census was used. Information for the study was obtained from Osiris data base as well as other secondary sources. Based on the findings from the study, capital structure and firm performance have an inverse relationship. Financial innovation has insignificant moderating influence in the interaction between the capital structure and firm performance. Listed firms across East Africa should not take up too much debts since it may increase the risks of bankruptcy hence bringing about financial distress that would adversely affect their performance. Firms across east Africa should critically evaluate the costs of issuing debts against the costs of floating new shares before coming up with a proportion of each component within the capital structure for financing projects. The study recommends that listed firms across east Africa should strive a balance between the equities and debts in their capital structures since this will have an influence on their performance.*

**Keywords:** Capital Structure, Financial Innovation, Firm Performance, East African firms

## 1. Background of the Study

Capital structure (CS) describes the proportion of debts and equities used for funding investment projects (Yousaf& Itikhar, 2018). According to Myers and Brealey (1991), the key constituents of capital structure include the debts, equities as well as hybrid securities which the firm has issued. The other definition of CS is advanced by Weston and Copeland (1986) who consider it as financing of the firm on a permanent basis and it constitutes debts on a long-term basis, the equities as well as securities. Fetherston and Bos (1993) noted that since it aggregates the overall market values of debts and equities in the firm, capital structure has an influence on risk perception and profitability of the business entity. CS determines the degree of leverage in the firm, as explained by the use of debts. To measure CS, the ratio of debts against equities of the firm can be used (Matar& Eneizan, 2018).

Performance is a general term that describes how the firm is able to meet the established goals and objectives within the set time frame. To determine performance of the firm, financial and non-financial indicators can be used (Eniola& Entebang, 2015). Performance in the context of this study was measured in terms of the returns that the firm earns on its assets (ROA), equities (ROE) as well as investments (ROI) (Hossain & Nguyen, 2016). The financial measures of performance are used for gauging the overall viability and soundness of the firm within a given period of time. It is through financial measures of performance that comparison between different firms is enhanced. There are also market based measures of firm performance extensively covering Tobin Q (Madrid-Guijarro et al., 2016).

Innovation is coming up with products that are relatively new or coming up with new ways of doing things in the firm (Kodongo, Mokoaleli-Mokoteli& Maina, 2015). Thus, financial innovation is the ability of the firms to come up

with relatively new financial products so as to increase the generated revenues (Frame & White, 2004). Financial innovation (FI) also refers to coming up with institutions that are new, products that are relatively new and leveraging on new forms of technologies in the financial markets. There are several indicators used to measure innovation in the firm but this is influenced by the nature of the firm (whether manufacturing and service) firms. Some of these measures of innovation include the expenditure on research and development (R&D) and the patents (Chadha& Sharma, 2015).

The link between CS, FI and firm performance has been subjected to theoretical and empirical debate but resulting into mixed and inconsistent findings. For instance, the Modigliani-Miller (M&M) theory advanced by Modigliani and Miller (1958) argues that the investment decisions and the value of the firm are not determined by the capital structure. The theory indicates that CS plays an irrelevant role in so as far firm's value and thus its performance is concerned. It is the assets of the firm and not its capital structure that influence the value of the firm and thus performance (Li, Niskanen& Niskanen, 2019). On the basis of this MM theory, a negative relationship is predicted between capital structure and firm performance. Based on the transaction cost innovation theory (Hicks & Niehans, 1983), the key motive for firms to engage in financial innovations is to bring down transaction costs in their operations. This reduction in transaction costs is associated with maximization of the generated revenues and thus firm performance (Dada& Ghazali, 2016). Based on this theory, there existed a positive relationship between financial innovation and firm performance. The costs of each source of funds as determined by the static trade-off theory (Lichtenberger & Kraus, 1973; Myers, 1984) influence the decision of the firm to borrow for innovation purposes, implying relationship between CS and FI.

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## 1.1 Research Objectives

- 1) To establish the effect of capital structure on performance of listed East African firms
- 2) To examine the moderating effect of financial innovation in the relationship between capital structure and performance of listed East African firms

## 1.2 Hypotheses Development

This section will focus on formulation and development of the study hypotheses

### 1.2.1 Capital Structure and Firm Performance

CS is the mix of debts and equities that are used for financing the operations of the firm. In Ukraine, Iavorskyi (2013) was interested in coming up with the link between capital structure and the ability of the firms to perform. CS was represented by financial leverage and it was hypothesized that this has positive influence on performance. The study considered the time frame from 2001 all through to 2010. It was noted that leverage is negatively connected with the ability of the firm to perform. A study done in Pakistan by Javed, Younas and Imran (2014) was largely interested in examining the interaction between CS and firm performance. The study considered a 5-year time frame from 2007 all through to 2011. Firm performance was measured by ROA and ROE and debts to equity ratio were used as a measure of capital structure. A negative relationship was identified between CS and ability of the firm to perform. Le and Phan (2017) borrowed evidence from Vietnam to establish the interaction between CS and ability of the firms to perform. The study considered a time horizon from 2007 all through to 2012. It was shown that debt has an inverse interaction with ability of the firm to perform.

In Indian context, Chadha and Sharma (2015) examined the link between CS and firms' performance. Evidence was obtained from manufacturing entities where 422 firms were covered. The study considered a ten-year time horizon from 2003 all through to 2012. It was indicated that financial leverage has no significant influence on ability of the firm to perform. In the context of Germany, Abdullah and Tursoy (2019) focused on determining the interaction between CS and firm performance. The key emphasis of the study was on non-financial listed entities in Germany. It was shown that CS has positive influence on ability of the firms to perform.

In Taiwan, Yang et al (2010) looked at CS and its influence on ability of the entities to perform. The MM and the tradeoff theories provided the anchorage and basis of the study. It was established debts significantly predict the ability of firms to perform. In Nigeria, Ogebe, Ogebe and Alewi (2013) focused on CS and how it impacts on the ability of the firms to perform. It was established that financial leverage has significant influence on firm performance. Skopljak and Luo (2012) used a case of the financial sector in Australia to determine the influence of capital structure and the ability of the firm to perform. It was revealed that CS determines ability of the firm to perform.

Therefore, based on the reviewed studies, the study formulates the following hypothesis:

*H<sub>1</sub>: Capital structure has a positive effect on performance of listed East African firms*

### 1.2.2 Capital Structure, Financial Innovation and Firm Performance

Innovation is the ability of the firm to come up with new products that are in line with the needs of the customers. Sarah (2014) was keen to come up with the connection between financial innovation and CS. Specifically, the study focused on 44 firms at the NSE. Information for the study was obtained from secondary sources and the study considered a time frame from 2008 all through to 2012. Leverage was used as a proxy of capital structure as measured by debts divided by the sum of equities and debts. A significant interaction was established between CS and the ability of the firm to innovate.

Algieri, Aquino and Succurro (2017) looked at CS and the innovative performance of the entity. The study focused on European Union member countries. Innovative performance was operationalized by expenditure on R&D against the total sales revenues. Different ratios were used as proxies of capital structure including short term debt, long term and total debt ratio besides equity to asset ratio and debts to equity ratio. A positive relationship was established between CS and the innovative ability of the entity. Matera, Abduraupov, Dries and Pascucci (2015) was interested in establishing whether capital structure in any way affects the innovation strategies that the firm may adopt. The study relied on evidence from 7 member countries of European Union (EU). In total, 1,393 firms were covered by the study. A negative link was established between CS and innovation strategies of the firm.

Mouna, Jianmu, Havidz and Ali (2017) used a case of firms in Morocco to determine the interaction between CS and firm's performance. Information for the study was gathered using annual published reports and the time horizon considered was from 2014 to 2016. In total, 53 firms were covered by the study. It was shown that CS has negative interaction with firm performance. Bartoloni (2013) was interested at establishing the determinants and causality between the firm's CS and its ability to remain innovative. The study employed Granger-Causality tests and it was shown that the leverage of the firm has no influence on the innovative ability and efforts of the firm.

Tiwari, Mohnen, Palm and Loeff (2010) looked at financial challenges, capital structure and the innovative ability of the firms. The methodology used was panel data. It was established that financial challenges have adverse influence on intensity of the R&D of the firm as determined by the expenditure of the firm on R&D and the capital asset of the firm. Furthermore, firms with a high level of leverage are likely to be constrained financially and that firms with high leverage are likely to be less innovative. Chang and Song (2014) looked at the influence of investment in research and development on capital structure of firms in Hong Kong. The study was premised on the fact that firms which are more innovative are associated with more issuance of equities. The reviewed empirical studies confirmed that

firms having a high level of investment in R&D issue less debt and more equities with a low degree of leverage. It was noted that firms having more patents have more equities and less issued debts. This is because patents play a key role in reduction of the information asymmetry and it can also be pledged as the collateral by the firm.

Ouma et al. (2018) did a study on the role of financial innovation as far as performance of deposit taking SACCOs in Kenyan context is concerned. A total of 19 firms that engage in deposit taking activities were covered and information was sought within a time frame of 2010 and 2014. Information was gathered from primary as well as auxiliary sources. In total, 68 respondents were covered. It was shown that financial innovation entails coming up with new products and institutions and the processes that have significant influence on performance. Nguyen and Nguyen (2015) looked at CS and its influence on firm's ability to perform. The focus of the study was on listed firms in Vietnam. In total, 147 firms were covered and the data was gathered covering a period from 2006 all through to 2014. It was shown that leverage is associated with an adverse influence on the firm's performance.

On the basis of the reviewed empirical studies, the study formulates the following hypothesis:

*H<sub>2</sub>: Financial innovation moderates the relationship between capital structure and performance of listed East African firms*

## 2. Methodology

The study adopted a correlational descriptive design. The design was correlational because the study entails testing of the hypothesis to decide whether to accept or reject. On the other hand, the descriptive design shall help the study to determine the interaction between CS, financial innovation and firm's performance. Various similar studies have used descriptive design for instance, Sarah (2014) and Ouma, Omagwa and Ngaba (2018). Population is a group of elements including people, items and things that share some attributes and which form the basis of the study (Yin, 2017). Table 1 gives the study population.

**Table 1**

Security Market	Number of listed firms
Nairobi Securities Exchange	64
Rwanda Security Exchange	9
Dar salaam Security Exchange	21
Uganda Security Exchange	18
Total	112

The study censured all the 112 firms. The study relied on information from secondary sources. The study gathered data on a five-year period (2014-2018). Table 2 shows how the variables of the study were operationalized.

**Table 2: Operationalization of the Variables**

Objective	Hypotheses	Variable	Measurement	Scale	Model
To establish the effect of capital structure on performance of listed East African firms	<i>H<sub>01</sub>: Capital structure has a positive effect on performance of listed East African firms</i>	Independent capital structure	Leverage=Debts/(Debts+Equities)	Ratio	$Y = \beta_0 + \beta_1 X_1 + \mu it$ Where Y is = Firm performance $X_1 =$ Capital structure $\beta_0 =$ Constant and $\mu it$ is the error term
		Dependent firm performance	ROA=Net Income/Total Assets	Ratio	
To examine the moderating effect of financial innovation in the relationship between capital structure and performance of listed East African firms	<i>H<sub>02</sub>: Financial innovation moderates the relationship between capital structure and performance of listed East African firms</i>	Independent capital structure	Leverage=Debts/(Debts+Equities)	Ratio	$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_1 * FI + \mu it$ Where Y is = Firm performance $X_1 =$ Capital structure $FI =$ Financial Innovation $\beta_0 =$ Constant and $\mu it$ is the error term
		Moderating financial innovation	Expenditure on R&D/Total Assets	Ratio	
		Dependent firm performance	ROA=Net Income/Total Assets	Ratio	

Source; Author (2019)

## 3. Results

The analysis is systematically presented starting with the descriptive, the trend analysis represented by graphs and lastly the inferential statistics including correlation and as well as regression analysis.

### 3.1 Descriptive Analysis

The study used means and standard deviations to describe the interaction between the variables. Table 3 summarizes these findings.

**Table 3: Descriptive Statistics**

	N	Min	Max	Mean	Std. Dev
Firm Performance	112	.02	.09	.0639	.01744
Capital Structure	112	.30	.48	.3844	.04952
Financial Innovation	112	.01	.02	.0109	.00172
Capital Structure * Financial Innovation	112	.00	01	.0042	.00074

As shown in Table 3 above, 6.93% of the profits generated by the studied firms is explained by utilization of their assets in place. This implies that assets of the firms play an important role as far as profitability is concerned. The study noted that on average, majority of the studied firms 38.44% of debts and the rest is made up of equities. Table 3 also indicates that on average; most of the studies firms spend 1.09% of their generated incomes on R&D which entails coming with new products (goods and services).

### 3.1.1 Trend in Movement of the Variables

Trend analysis was conducted to depict the movement in the variables of the study across the five-year period of consideration. Firm performance was the dependent study variable. It was measured using ROA, which is calculated by net incomes divided by total assets of the respective firms. Hossain and Nguyen(2016) consider ROA as one of the metrics of firm's performance. Figure 1 illustrates the trend in movement of ROA.

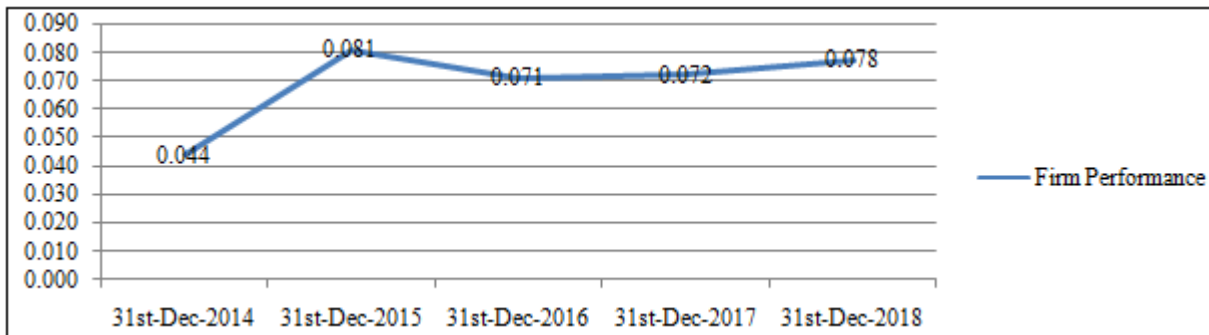


Figure 1: Return on Assets (Firm Performance)

The overall findings in Figure 1 above are that generally, there was a steady increase in performance of the studied firms. This trend in performance of the studied firms could be attributed to two factors. One, the studied firms could have invested heavily in machineries and other firms of assets and thus increasing the asset base. Secondly, the studied firms could have generated consistently improved on the amount of revenues generated and thus transpiring into improved net profits.

CS was the study independent variables. Yousaf and Iftikhar(2018) consider CS as themix of debts as well as equities used for funding investment projects. Weston and Copeland (1986) consider capital structure as financing of the firm on a permanent basis and it constitutes debts on a long-term basis, the equities as well as securities. The findings of trend analysis are shown in Figure 2.

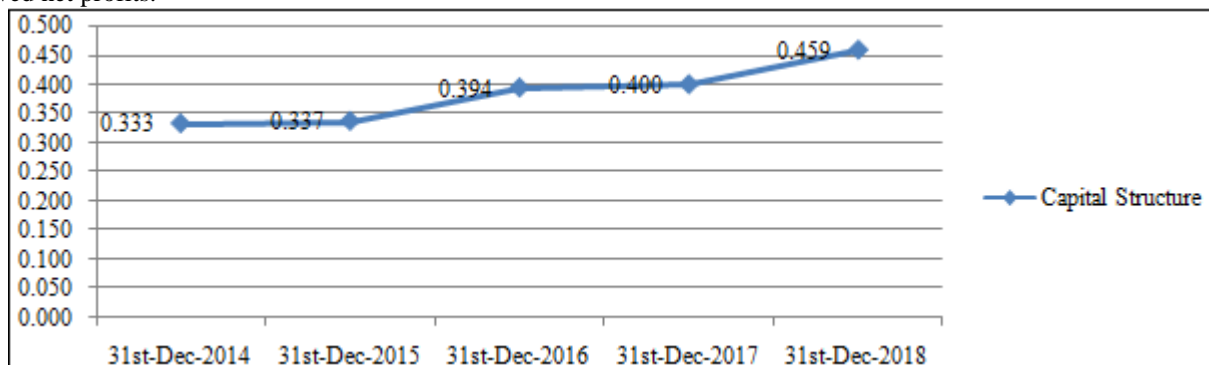


Figure 2: Capital Structure

Figure 2 above depicts the trend in CS of the studied firms. From the findings, there was consistent and steady rise in capital structure of the studied firms. This trend could be attributed to two factors. First, majority of the studied firms consistently relied on debts to finance their investment opportunities. Secondly, some of the studied firms relied on equities besides debts to ensure that the investment opportunities in place are financed. Thus, it can infered that majority of the studied firms were levered. These findings are in line withMatar and Eneizan (2018) who noted that CS determines the level of leverage in the firm, as explained by the use of debts and that CS can be measured by the ratio of debts against equities in the firm.

The moderating variable in this study was financial innovation. To measure financial innovation, this study used the total amount the firm spends on R&D as a ratio to total assets. This was consistent with Tiwari, Mohnen, Palm and Loeff (2010) who looked at financial challenges, CS and the innovative ability of the firms where financial innovation was measured by expenditure on R&D to total asset expenditure. The findings of trend analysis are as presented in Figure 3.

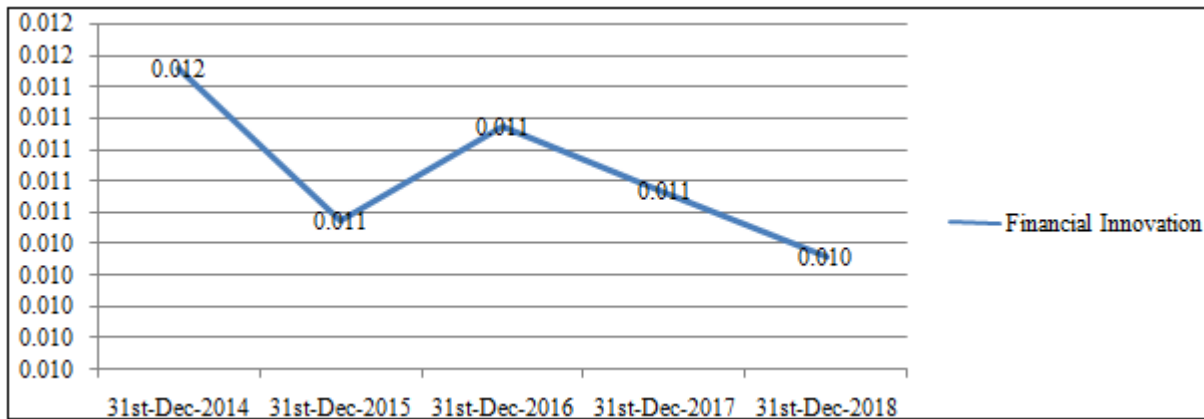


Figure 3: Trend Analysis of Financial Innovation

As indicated in Figure 3, there was fluctuation in financial innovation of the studied firms across the entire period of consideration. This was a surprising finding contrary to what was expected. It was expected that financial innovation could depict an upward trend since the consistent rise and advancement of technology has made it compulsory for firms to innovate to survive.

3.1.2 Capital Structure and Firm Performance

The first objective sought to determine the influence of CS on firm’s performance. Table 4 gives the findings of correlation analysis.

3.2 Correlation analysis

The summary for the correlation analysis is analyzed in table 4 as shown below:

Table 4: Correlation summary

		Firm Performance	Capital Structure
Firm Performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	112	
Capital Structure	Pearson Correlation	-.790**	1
	Sig. (2-tailed)	.000	
	N	112	112

Table 4 above gives the findings of correlation analysis. From the results, capital structure (r=-0.790) is negatively correlated with firm’s performance. The finding is empirically consistent with Iavorskyi (2013) who was interested in coming up with the link between CS and the ability of the firms to perform and noted that leverage and firm’s performance are correlated negatively. Similarly, Javed et al. (2014) established a negative link between CS and firm’s performance. Le and Phan (2017) borrowed evidence from Vietnam to establish the interaction between CS and ability of the firms to perform where it was shown that debt has an inverse influence on realization of goals.

Regression analysis was used as a further inferential statistic and Table 5 gives the findings of the Model Summary.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	-.796 <sup>a</sup>	.634	.630	.01053

Table 5 indicates that the value of R is 0.796; this shows that there exists strong positive relationship between CS and firm’s performance. The finding is supported by Abdullah and Tursoy (2019) who focused on determining the interaction between CS and firm’s performance and showed a direct link. The coefficient of determination R square is 0.634; this can be inferred that the model for the study was fit. The adjusted R squared is 0.630; this shows that 63.0% change in firm performance is explained by changes in capital structure.

Analysis of Variance was done at the level of significance being 5% or 0.05. The findings are shown in Table 6.

Table 6: Analysis of Variance

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.021	1	.021	190.295	.000 <sup>b</sup>
	Residual	.012	110	.000		
	Total	.033	111			

The findings in Table 6 show that the value of F calculated for the model is 190.295; this could be interpreted to mean that the overall study model was significant.

The study was guided by the following hypotheses:

H<sub>1</sub>: Capital structure has a positive effect on performance of listed East African firms

The findings in Table 7 are used in testing the above hypotheses.

Table 7: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.176	.012		14.592	.000
	Capital Structure	-.278	.031	-.790	-8.928	.000

From Table 7, the following regression equation is formulated:

$Y = .176 - .278X_1 + \mu$ .....(i)

Where Y is = Firm performance

X<sub>1</sub> = Capital structure

β<sub>0</sub> = Constant and μ is the error term

From the findings, CS has a negative beta with a p-value less than 0.05. This means that CS has negative and significant

influence on firm performance. Thus, the formulated hypothesis is rejected. These findings are in line with Yang, Chou, Cheng and Lee (2010) who examined the link between CS and the ability of the entities to perform and established debts have significant influence on the ability of the firm to perform. Ogebe, Ogebe and Alewi (2013) established that financial leverage has significant influence on firm performance. Skopljak and Luo (2012) showed that CS has significant influence on firm performance.

**3.2.1 Capital Structure, Financial Innovation and Firm Performance**

The second objective of the study was interested in determining the interaction between CS and firm’s performance with firm performance as moderating variables. The findings of correlation analysis are pointed out in Table 8.

**Table 8: Correlation Results**

		Firm Performance	Capital Structure	Capital Structure & Financial Innovation
Firm Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	112		
Capital Structure	Pearson Correlation	-.790**	1	
	Sig. (2-tailed)	.000		
	N	112	112	
Capital Structure & Financial Innovation	Pearson Correlation	-.470**	.534**	1
	Sig. (2-tailed)	.000	.000	
	N	112	112	112

As shown in Table 8, capital structure (r=-0.796) has an inverse relationship with firm performance. At the same time, financial innovation has a negative moderating influence in the relationship between capital structure and

**Table 11: Regression Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.179	.012		14.411	.000
	Capital Structure	-.261	.037	-.74	-7.072	.000
	Capital Structure * Financial Innovation	-2.184	2.454	-.093	-.890	.378

**Y = .179-.261X<sub>1</sub>-2.184X<sub>1</sub>\*FI..... (ii)**

Where Y is = Firm performance

X<sub>1</sub> = Capital structure

FI = Financial Innovation

From the findings, financial innovation has a negative beta coefficient although its p-value is greater than 0.05. Thus, it can be inferred that financial innovation does not moderate the relationship between CS and firm’s performance. Therefore, the formulated hypothesis of the study above is rejected. Materia, Abduraupov, Dries and Pascucci (2015)

financial performance. Javed et al. (2014) established a negative relationship between capital structure and firm performance. Le and Phan (2017) argued that debt has an inverse influence on firm performance.

Regression analysis was conducted to test and determine the interaction between the study variables. The findings of the model summary are summarized in Table 9.

**Table 9: Model Summary for Moderation**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	-.798 <sup>a</sup>	.637	.630	.01053

As shown in Table 9, the value of R is taken as 0.798; showing that financial innovation has a strong moderating influence in the relationship CS and firm’s performance. The value of adjusted R square is 0.630; this shows that 63.0% change in fir performance is explained by CS as the independent and financial innovation as a moderator variable.

Table 10 gives the ANOVA findings.

**Table 10: Analysis of Variance**

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	.021	2	.011	95469	.000 <sup>b</sup>
	Residual	.012	109	.000		
	Total	.033	111			

From Table 10, the value of F calculated is 95.469; hence the study model was significant on the overall. The findings of the beta coefficients and the p-values used for testing of the hypotheses below are shown in Table 11.

*H<sub>2</sub>: Financial innovation moderates the relationship between capital structure and performance of listed East African firms*

established a negative link was established between capital structure and innovation strategies of the firm. Mouna, Jianmu, Havidz and Ali (2017) noted that CS has negative interaction with firm’s performance. Bartoloni (2013) revealed that the leverage of the firm has no influence on the innovative ability and efforts of the firm.

Table 12 summarizes the hypotheses of the study that were tested.

Table 12: Summary of the Hypotheses

Hypotheses	Beta & p-value	Remarks
<i>H<sub>01</sub>: Capital structure has a positive effect on performance of listed East African firms</i>	$p=0.000$ & $\beta=-.278$	Reject hypotheses
<i>H<sub>02</sub>: Financial innovation moderates the relationship between capital structure and performance of listed East African firms</i>	$p=.378$ & $\beta=-2.184$	Reject hypotheses

#### 4. Conclusion

The study was set out to establish the influence of capital structure on firm performance with financial innovation as a moderating variable. Two hypotheses were formulated, developed and tested by the study as informed by the empirical studies. The findings of the study resulted into rejection of all the two formulated hypotheses of the study. The study revealed that capital structure has negative and significant effect on firm performance. This finding was supported by a number of empirical studies that were reviewed. This finding contradicts the earlier findings on capital structure and the value of the firm commonly referred to as MM (Modigliani and Miller (1958) hypothesis. The study also established that financial innovation does not moderate the interaction between CS and firm's performance. However, financial innovation requires funds that can be borrowed when the firm compares the costs of funds hence the statistic trade off theory.

#### 5. Recommendations

The study recommends that listed firms across east Africa should strive a balance between the equities and debts in their capital structures since this will have an influence on their performance. The listed firms across East Africa should not take up too much debt since it may increase the risks of bankruptcy hence bringing about financial distress that would adversely affect their performance.

It is important that listed firms across east Africa critically evaluate the costs of issuing debts against the costs of floating new shares before coming up with a proportion of each component within the capital structure for financing projects.

#### References

- [1] Algieri, B., Aquino, A., & Succurro, M. (2017). The Impact of Capital Structure on Firms' innovative Performance.
- [2] Bartoloni, E. (2013). Capital structure and innovation: causality and determinants. *Empirica*, 40(1), 111-151.
- [3] Bos, T., & Fetherston, T. A. (1993). Capital structure practices on the specific firm. *Research in International Business and Finance*, 10(3), 53-66.
- [4] Brealey, R. A., & Myers, S. C. (1991). Principles of Corporate Finance, ~ McGraw-Hill. Inc.,.
- [5] Chadha, S., & Sharma, A. K. (2015). Capital structure and firm performance: Empirical evidence from India. *Vision*, 19(4), 295-302.
- [6] Chadha, S., & Sharma, A. K. (2015). Capital structure and firm performance: Empirical evidence from India. *Vision*, 19(4), 295-302.
- [7] Chang, H., & Song, F. M. (2014). R&D investment and capital structure. In *The University of Hong Kong Working Paper*.
- [8] Dada, A. O., & Ghazali, Z. B. (2016). The Impact of Capital Structure on Firm Performance: Empirical Evidence from Nigeria. *Journal of Economics and Finance*, 7(4), 23-30.
- [9] Eniola, A. A., & Entebang, H. (2015). SME firm performance-financial innovation and challenges. *Procedia-Social and Behavioral Sciences*, 195, 334-342.
- [10] Hackbarth, D., Mathews, R., & Robinson, D. (2011). Innovation, Capital Structure, and the Boundaries of the Firm.
- [11] Hossain, A. T., & Nguyen, D. X. (2016). Capital structure, firm performance and the recent financial crisis. *Journal of Accounting and Finance*, 16(1), 76.
- [12] Iavorskyi, M. (2013). The impact of capital structure on firm performance: Evidence from Ukraine. *Kyiv School of Economics*, 36.
- [13] 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.
- [14] Kodongo, O., Mokoaleli-Mokoteli, T., & Maina, L. N. (2015). Capital structure, profitability and firm value: panel evidence of listed firms in Kenya. *African Finance Journal*, 17(1), 1-20.
- [15] Le, T. P. V., & Phan, T. B. N. (2017). Capital structure and firm performance: Empirical evidence from a small transition country. *Research in International Business and Finance*, 42, 710-726.
- [16] Le, T. P. V., & Phan, T. B. N. (2017). Capital structure and firm performance: Empirical evidence from a small transition country. *Research in International Business and Finance*, 42, 710-726.
- [17] Li, K., Niskanen, J., & Niskanen, M. (2019). Capital structure and firm performance in European SMEs: Does credit risk make a difference? *Managerial Finance*, 45(5), 582-601.
- [18] Madrid-Guijarro, A., García-Pérez-de-Lema, D., & Van Auken, H. (2016). Financing constraints and SME innovation during economic crises. *Academia Revista Latinoamericana de Administración*, 29(1), 84-106.
- [19] Matar, A., & Eneizan, B. M. (2018). Determinants of financial performance in the industrial firms: Evidence from Jordan. *Asian Journal of Agricultural Extension, Economics & Sociology*, 1-10.
- [20] Materia, V. C., Abduraupov, R., Dries, L., & Pascucci, S. (2015). *Does the Capital Structure of Firms Influence Their Innovation Strategies? Evidence from the European Agri-food Sector*. Leibniz Institute of

Agricultural Development in Transition Economies (IAMO).

- [21] Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American*, 1, 3.
- [22] Mouna, A., Jianmu, Y., Havidz, S. A. H., & Ali, H. (2017). The impact of capital structure on Firms performance in Morocco. *International Journal of Application or Innovation in Engineering & Management*, 6(10), 11-16
- [23] Nguyen, T., & Nguyen, H. C. (2015). Capital structure and firms' performance: Evidence from Vietnam's stock exchange. *International Journal of Economics and Finance*, 7(12), 1-10.
- [24] Ogebe, P., Ogebe, J., & Alewi, K. (2013). The Impact of Capital Structure on Firms' Performance in Nigeria.
- [25] Ouma, A. A., Omagwa, J., & Ngaba, D. (2018). Financial Innovations and Performance of Deposit Taking SACCOs in Nairobi City County, Kenya.
- [26] Sarah, W. (2014). The Relationship Between Financial Innovation And Capital Structure Of Companies Listed In The Nairobi Securities Exchange.
- [27] Skopljak, V., & Luo, R. H. (2012). Capital structure and firm performance in the financial sector: Evidence from Australia. *Asian Journal of Finance & Accounting*, 4(1), 278-298.
- [28] Tiwari, A. K., Mohnen, P., Palm, F. C., & van der Loeff, S. S. (2010). Financial constraints, capital structure and innovation: An empirical investigation. In *Artículo presentado en el Financial Constraints Seminar, Nueva Delhi*. Recuperado de [ww. isid. ac. in/~pu/seminar/09\\_04\\_2010\\_Paper. pdf](http://www.isid.ac.in/~pu/seminar/09_04_2010_Paper.pdf).
- [29] Weston, J. F., & Copeland, T. E. (1986). *Managerial finance*, eight editions.
- [30] Yang, J. A., Chou, S. R., Cheng, H. C., & Lee, C. H. (2010). The Effects of Capital Structure on Firm Performance in the Taiwan 50 and Taiwan Mid-Cap 100. *Journal of Statistics and Management Systems*, 13(5), 1069-1078.
- [31] Yin, R. K. (2017). *Case study research and applications: Design and methods*. Sage publications.
- [32] Yousaf, S., & Iftikhar, K. (2018). Firm-Specific Determinants of Capital Structure: Implication of Pecking Order Theory in Automotive Industry of Pakistan. *Abasyn University Journal of Social Sciences*.