

**EFFECT OF DEBT FINANCING ON FINANCIAL PERFORMANCE OF  
PUBLIC UNIVERSITIES IN KENYA**

**BY**

**GITONGA JOSEPH KIMATHI**

**D61/9923/2018**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF  
BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS,  
UNIVERSITY OF NAIROBI**

**NOVEMBER, 2019**

## DECLARATION

This research project is my original work and has not been presented for a degree or other award in any university.

Signature .....

Date .....

**Gitonga Joseph Kimathi**

**D61/9923/2018**

This research project has been submitted for examination with my approval as the university supervisor.

Signature .....

Date .....

**Mr. James Karanja**

Lecturer, Department of Finance and Accounting

School of Business, University of Nairobi

## **ACKNOWLEDGEMENT**

First and foremost, I wish to express my deep and sincere thanks to God for enabling me complete my studies successfully.

I owe special gratitude to my family members for their company and wise counsel. I thank them for assisting me in one way or another.

I am also grateful to my supervisor, Mr James Karanja, for his tireless and kind guidance throughout this research work.

## **DEDICATION**

This work is dedicated to my beloved parents, family members and friends who selflessly stood by me throughout my studies and whose love was a driving force behind my success.

God bless you all.

## **TABLE OF CONTENTS**

<b>DECLARATION .....</b>	<b>ii</b>
--------------------------	-----------

<b>ACKNOWLEDGEMENT .....</b>	<b>iii</b>
<b>DEDICATION .....</b>	<b>iv</b>
<b>LIST OF TABLES .....</b>	<b>vii</b>
<b>LIST OF FIGURES .....</b>	<b>viii</b>
<b>ABSTRACT .....</b>	<b>ix</b>
<b>CHAPTER ONE: INTRODUCTION .....</b>	<b>1</b>
<b>1.1 Background to the study.....</b>	<b>1</b>
<b>1.1.1 Debt Financing.....</b>	<b>2</b>
<b>1.1.2 Financial Performance.....</b>	<b>3</b>
<b>1.1.3 Relationship between Debt Financing and Financial Performance .....</b>	<b>4</b>
<b>1.1.4 Public Universities in Kenya.....</b>	<b>6</b>
<b>1.2 Research Problem .....</b>	<b>6</b>
<b>1.3 Objective of the Study.....</b>	<b>8</b>
<b>1.4 Value of the Study.....</b>	<b>8</b>
<b>CHAPTER TWO: LITERATURE REVIEW .....</b>	<b>9</b>
<b>2.1 Introduction .....</b>	<b>9</b>
<b>2.2 Theoretical Review.....</b>	<b>9</b>
<b>2.2.1 Trade-Off Theory of Capital Structure .....</b>	<b>9</b>
<b>2.2.2 Market Portfolio Theory (MPT) .....</b>	<b>10</b>
<b>2.2.3 Pecking Order Theory .....</b>	<b>10</b>
<b>2.3 Determinants of Financial Performance .....</b>	<b>11</b>
<b>2.3.1 Capital Structure .....</b>	<b>11</b>
<b>2.3.2 Corporate Governance .....</b>	<b>11</b>
<b>2.3.3 Firm Characteristics .....</b>	<b>12</b>
<b>2.4 Empirical Review .....</b>	<b>12</b>
<b>2.5 Conceptual Framework .....</b>	<b>14</b>
<b>3.1 Introduction .....</b>	<b>15</b>
<b>3.2 Research Design .....</b>	<b>15</b>
<b>3.3 Population of the study .....</b>	<b>15</b>

<b>3.5 Data Collection</b> .....	16
<b>3.6 Data Analysis</b> .....	16
<b>CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION</b> .....	<b>18</b>
<b>4.1 Introduction</b> .....	18
<b>4.2 Descriptive Statistics</b> .....	18
<b>4.3 Correlation Analysis</b> .....	23
<b>4.4 Multiple Regression Analysis</b> .....	25
<b>4.5 Analysis of Variance (ANOVA)</b> .....	26
<b>4.6 Coefficient of Determination</b> .....	27
<b>4.7 Discussion of Research Findings</b> .....	34
<b>CHAPTER FIVE: DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS</b> ...	<b>36</b>
<b>5.1 Introduction</b> .....	36
<b>5.2 Summary of Findings</b> .....	36
<b>5.3 Conclusion</b> .....	36
<b>5.4 Recommendations</b> .....	37
<b>5.5 Limitations of the Study</b> .....	37
<b>5.6 Areas for Further Research</b> .....	38
<b>REFERENCES</b> .....	<b>39</b>

## LIST OF TABLES

<b>Table 4.1: Debt over Total Equity.....</b>	<b>18</b>
<b>Table 4.2: Return on Assets.....</b>	<b>19</b>
<b>Table 4.3: Total revenue in “000.....</b>	<b>20</b>
<b>Table 4.4: Correlation Analysis .....</b>	<b>22</b>
<b>Table 4.5: Model of summary.....</b>	<b>23</b>
<b>Table 4.6 Analysis of Variance (ANOVA).....</b>	<b>23</b>
<b>Table 4.7: Coefficient of determination .....</b>	<b>25</b>
<b>Table 4.8 Return on Assets over the Years as a Measure of Performance .....</b>	<b>26</b>

## LIST OF FIGURES

<b>Figure 2.1: Conceptual Framework.....</b>	<b>16</b>
--	-----------



## **ABSTRACT**

The effect of debt financing on financial performance is a significant determinant of the financial wellbeing of a company. Public universities have a tendency to suffer more from fluctuations in financial leverage because they have a low equity to total asset base ratio. During the recent times, many public institutions of higher learning have commenced huge expansion programs with limited funding alternatives, hence they have resulted to debt financing.

The capital used to finance a company consists of owners' funding and creditors' funding. Combining the two funding sources establishes a company's capital structure. Most contemporary companies, in particular, still have to determine the most appropriate level of debt that gives maximum returns to shareholders. A research aimed at exploring the impact of debt financing on the financial performance of public universities calculated as return on assets and return on equity.

The outcomes of the study showed that there is a positive relationship between debt financing and financial performance of public universities in Kenya. The research project recommended that public universities need to choose a tradeoff between loans and total owners funds that will increase financial performance.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background to the study

Education is a central pillar of society for a considerable length of time and does not only provide the opportunity for students to learn and practice naturally, but also offers the opportunity to participate in research. Although other organizations may conduct research, universities remain the main research centers. In reality, the university's mission is to teach and research (CPS Research International, 2016). Higher education, and especially academic research, has become the subject of intense political and geopolitical interest around the world in terms of improving society and innovation. Successful economies are considered to be those that can build and leverage new knowledge for 'competitive advantage and efficiency by investing in information-based and intellectual property—research and development, software, new process product design, and human and organizational resources' (Brinkley, 2008).

Public universities require funds to finance their daily costs of operations such as research and academics, renovation of infrastructure and payment of salaries and allowances (Kajirwa, 2015). According to Wikipedia, (2019) Government usually funds public universities and public colleges by direct funding, giving grants, offering high education loans to students, funding research, giving tax breaks and grants. Public universities are subject to government oversight. Public universities also provide alternative courses to students who are self-sponsored. By doing so, universities raise funding for research and institutional management. According to the Standard Newspaper of April 2017 page 12, there was a plan for a reduction in some staff by public universities in order to be able to

provide college facilities using the available funds. This will adversely affect research and academic programs since the institutions may have a shortage of qualified personnel. This can also be related to research findings on the low financial capacity of various Kenyan universities conducted in the academic year 2014/2015 (Mutiso, 2012). Because of this state of affairs, universities may continue to experience a financial crisis due to the introduced new Differentiated Unit Cost (DUC), with the higher annual cost per student per program (Treasury, 2016). It is therefore unlikely for an institution to allocate cash for research and development projects if it is not in a financial position to cover its administrative expenses. Sadly, this is the essence of Kenyan universities (April 2017 Standard Newspaper page 12). According to the Council of legal education policy statement, the objectives of universities is to meet the global demand of higher skills, research and transform lives through innovation that spurs economic growth. For universities to be sustainable they ought to be able to meet their 'full economic prices' of teaching that has costs of workers, equipment, and services.

### **1.1.1 Debt Financing**

Debt financing is the process by which funds are lent to purchase an asset. Institutions raise money by lending funds from commercial banks and other financial institutions to fund their various investments. Organizations take loans to finance their operations. The interest is paid before the debt maturity period, with the loan principal being repaid at a future date (Harelimana, 2017).

According to Tirole (2006), debt can affect organizations both positively and negatively. (O'Brien and David, 2010). Loans will have to be repaid back together with the interest. Interest is the cost of debt and is paid periodically. If there is default, the lender can initiate

measures on how to collect back his money. The borrower may lose the collateral that was attached to the loan.

A long-term loan has a one to five-year term payback period. Usually, these loans are backed (asset-collateralized) and secured by the borrower, depending on their agreement. Long-term loan rates and conditions vary widely depending on the lender's policies and the borrower company's age and financial status (Bichsel & Blum, 2005).

Debt financing provides a means to tackle business finance deficits. Deficit occurs when there is a shortage of internal resources to finance investment needs (Onchomg'a, Muturi and Atambo, 2016). Debt capital is a component of the capital structure and it's a long term liability with a long repayment in excess of five years (Lambe 2014).

### **1.1.2 Financial Performance**

Financial performance is a criteria used to evaluate the effect of an organization's policies and activities and express them in an economic language (Harelimana 2017). It indicates the status of a company during a particular period as showcased in the prepared Statement of Financial Position, or it can display all activities over a specified time period as shown in the full statement of income (Makanga, 2015). Total Return on Asset (ROA) and Total Return on Equity (ROE) are widely used to assess organizations' financial performance. Analysts and regulators used such metrics to evaluate industry efficiency, forecast market structure trends, and use them for other purposes where a productivity measure is needed (Gilbert & Wheelock, 2007). Financial institutions (especially commercial banks) have received increased attention on performance analysis over the past several years.

Financial performance provides an accurate gage of the use of company resources to increase assets and earnings. (Obuya, 2017). Although ROA reflects the income of the shareholder arising directly from the business ' operations without the impact of borrowing, ROE measures the return that the stockholders receive on their investment. However, these financial metrics have been widely adopted as the long-term goal of a company in almost always purely financial in nature and therefore financial performance assessment indicators are directly linked to corporate financial goals (Vatavu, 2015). Financial performance is used over a period of time to rate different organizations. It is used by various stakeholders in a given market, such as commercial lenders, bondholders, investors, workers and management, and each cluster has its own interest in trailing a corporation's cash output (Omollo, 2018).

### **1.1.3 Relationship between Debt Financing and Financial Performance**

Debt financing is intended to raise revenue for businesses by funding profitable investments that give return to owners (Obuya, 2017). According to Waweru (2013), debt financing happens once a company raises money for property or capital spending by selling debt instruments to institutional investors. Financial institutions demand payment in the form of interest rates for their borrowed assets and are guaranteed the principle when debt matures. Lenders need collateral guarantee as their protection in the event of default and inability of the organizations to pay. They also place debt limits on how the companies are going to spend the borrowed money.

Debt financing is the main component of external financing for businesses which raise additional funds after formation (Baltac and Ayaydın, 2014). Optimal debt ratio minimizes

the company's capital costs while increasing the company's value, thereby optimizing the company's profitability. Wipperfurth (1966) analyzed several sectors while using the debt-to-equity ratio and the earnings-to-market ratio and found a good debt-to-profit relationship. Margraves and Psillaki (2010) found a positive effect, showing that a company's performance has a correlation with the debt ratio. Mendell, (2006) analyzed 20 forest industry firms and found that debt and productivity have a negative relationship. While public universities continue to take on more debts to fund their activities, the core mission of public universities to provide quality training and study in education is at risk. In a research conducted by Josh Freedman (2013), observed that universities facing more debt, face credit rating challenges and reducing the financial stress that public universities are currently facing requires an immediate infusion of cash, but a multi-pronged, innovative rethinking of financial approaches to finance higher education is required for a long-term solution. It includes a well-considered and organized state support for both public and public universities, consistency in institutional financial decision-making, separation of state control from management at public universities, relating budget decisions to objective enrollment patterns, and recruiting financial managers rather than academics.

A 2011 survey conducted by Inside Higher Ed in America found that about 40% of admissions in public universities and colleges were self-sponsored students. Universities are recruiting more wealthy students who will pay the full price to join, far from having to accept more low-income students. A College Business Officers follow-up survey found that "rising net tuition income" was the most common strategy in the coming years to tackle financial challenges. In 10 university, more than 7 CFOs responded.

### **1.1.4 Public Universities in Kenya**

Public universities are government owned and funded by the Ministry of Education to provide higher education to students. They are predominantly government-funded as opposed to private universities that are not government funded. They are created and chartered as per the high education act. Universities in Kenya have grown over the past two decades to meet the high demand for post-secondary education, as stated in the 2014 CUE Report.

Public universities are funded primarily by government. According to the Business Daily newspaper of May 6, 2019 page 12, public universities also are dependent on fees paid by their students for a large part of their operating income, and most of them have already raised tuition fees to bridge the gap on their financial problems. Recently government has greatly reduced funding to public universities and this has forced public universities to rely heavily on commercial bank loans to fund their activities and to diversify their source of financing in order to finance their operations.

### **1.2 Research Problem**

For all businesses, the effect of debt financing on financial performance and profitability is of significant value. Debt financing is one of the most important decisions firms have to make due to its impact on financial performance. (Lohano & Khan, Tauseef, 2013). The focus of major studies on firms and corporate financial structure was on capital structure rather than debt structure. The emphasis has been on how corporations can select an optimal debt equity ratio that can lead to financial performance. This is why my thesis is

inspired by the lack of concentration on debt financing studies and rather more emphasis on capital structure studies.

Higher grades of admission to public universities and the desire for university education created an artificial demand which fuelled the rapid expansion of public universities which made them a key player on the property market in Kenya. The level of progress in these institutions is shown in their tremendous student intake, quality education provided and financial performance. (Standard newspaper dated 4<sup>th</sup> March 2019 page 16).

Public and private universities secure funds for investment in equity and working capital management through fees charged to students, commercial banks, microfinance institutions, donors, sponsors and export credit (Duke, 2013). Debt is expected to promote the development and expansion of these institutions in order to facilitate generation of more revenue to cover operating costs, interest on debt, and return to the assets of the holders (Onoja&Ovayioza 2015). Nevertheless, it is a puzzle whether borrowing increases the financial performance of public universities or contributes to their competitiveness and long term sustainability. Public universities are struggling to survive despite accumulating huge debts to fund their operations.

In Kenya, Chetambe 2013 analysed the effect of financial education on the country's schools ' financial performance and noted that financial education had minimal impact on financial performance in public colleges. The relation between leverage financing and organizations ' financial performance has been widely studied, but most research focus on business entities leaving private and public schools and colleges despite the fact that they



also take debt to finance their operations. This leads to my research on the effects of debt financing on Kenya's public university financial performance.

Higher grades of admission to public universities and the desire for university education created an artificial demand which fuelled the rapid expansion of public universities which made them a key player on the property market in Kenya. The level of progress in these institutions is shown in their tremendous student intake, quality education provided and financial performance

### **1.3 Objective of the Study**

The overall objective of the study is to investigate the impact of debt financing on the financial performance of public universities in Kenya

### **1.4 Value of the Study**

This research will look at various approaches in the education sector in Kenya to debt funding and credit management practices. Knowledge of credit management and credit risk will allow them to define their loans control and manage effectively. This study will open the discussion on implementing policy and receiving input.

This research thus helps break away from the norms and looks more insightfully at the strategy that can further help to create a strategic mentality in debt financing for our public institutions. This study can assist in development of government policies on funding of public universities.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter presents the theoretical and empirical literature review of the study.

### **2.2 Theoretical Review**

Theoretical review provides a framework upon which the theories relevant to the study were based on. The critical theories which show the effect of debt financing on firm financial performance.

#### **2.2.1 Trade-Off Theory of Capital Structure**

Trade-off theory (TOT) is where there is a trade-off of benefits and cost of debt and equity and how organisations tries to maximize their value and achieve optimal capital structure (Glover and Hambusch, 2014).

This is where a company decides the percentage of debt and equity to use by weighing costs and benefits. Corporations uses debt and equity as sources of finance. Corporations are searching for debt financing rates that balance the tax benefits of additional debt against cost. According to the TOT, successful companies should borrow up to a certain level because after that the company's productivity and valuation will decline as a result of the relationship between bankruptcy costs and agency costs (Myers, 2001).

Corporations are searching for an ideal capital structure to optimize their worth. The composition of capital consists of debt and equity. According to Al-Sakran, (2001), when debt increases, the net gain of further debt increases and it's marginal cost increases, so that a business which optimizes its value strikes a balance on debt and equity. Graham

(2000) established that large companies with less financial burden expectations use moderate leverage when evaluating debt advantages and disadvantages.

### **2.2.2 Market Portfolio Theory (MPT)**

This shows how investors construct a portfolio that maximizes return at any level of risk. It shows that risk is associated with a higher reward. MPT discusses how an investor can create a multi-asset portfolio that maximizes returns. According to Essendi (2013) investor's objective is to maximize return on a given level of risk. Diamond (1984), noting that the extension of credit lines of banks into new sectors decreased the risk of bank default. In addition, concentrated credit portfolio will be vulnerable to economic downturns as they are exposed to only a few industries. When banks join industries with higher systemic risks, bank risk would be higher. Diversification aims to minimize the risks involved in achieving lower risks.

### **2.2.3 Pecking Order Theory**

Myers and Majluf (1984) came up with the concept of the Pecking Order. According to this principle business is in favor of foreign funding internally. Corporations prefer debt over equity as source of finance. Because of information asymmetry, businesses do not have a pre-set or optimal debt-to-equity ratio. The theory suggests that businesses have a specific order that is preferred to capital used to finance their business. According to Myers (1984), the main effects of the principle of pecking order are the strict management of financing. Frank and Goyal, (2007) found out that businesses have a fixed range of capital sources used to finance their operations.

## **2.3 Determinants of Financial Performance**

The underlying motivation behind any corporate sector investment is to earn profit (Kyereboah-Coleman, 2007). Among the organization's objectives is to maximize the resources of investors and generate sufficient income to continue the company and to continue to grow in the future. Many external and internal factors affect the company's efficiency. Internal factors are strongly unique while external factors can be the same for all or most companies. Corporate governance, capital structure and certain business characteristics such as volume, growth rate, liquidity dividends and revenues are the external factors that affect firm output as studied by Mizra (2013).

### **2.3.1 Capital Structure**

This is where a company finances its obligations using debt or equity. capital structure is made up of debt or equity. Debt-to-equity ratio is the capital structure of a company. The company has to face some default risk in the case of more debt financing, but there are also some tax benefits associated with debt financing (Suand Vo, 2010).

### **2.3.2 Corporate Governance**

Corporate governance practices are processes and activities that guide a business entity to set priorities, develop strategies and plans, monitor and report its results, and manage its risk (Reddy,2010). Experts also believe good practices in corporate governance improve the performance of the company (Chugh et al., 2009).

### **2.3.3 Firm Characteristics**

Some of the company's features are associated with high company performance. These include volume, rate of growth, dividends, liquidity and sales (Gurbuz et al., 2010). Better-growing companies can afford better equipment and then gradually increase the company's assets and volume. Large companies attract better managers and employees who contribute to the company's performance. Therefore, both firm and its people are promoting the ambitions of each other.

### **2.4 Empirical Review**

A research conducted by Mohammad and Jaafer (2012) on 39 Amman Stock Exchange-based firms has explored the position of debt in a profitable way. The findings showed a significant but negative correlation between short-term debt, long-term debt, total debt and equity return. For some purposes, debt is more costly and thus raising the share of debt in the capital structure would result in low profitability.

Dube (2013) researched the effects of debt on SME's profitability in Zimbabwe and noted that a company's performance had a positive relationship to the rate of leverage used as well as investment variations. The study also found that investment spending was a decisive factor in the performance of operations of SMEs. The rate of leverage should be fair to prevent higher costs that could discourage retained earnings from being utilized by SMEs.

According to Githaig and Kabiru (2015) on long-term debts impacting financial performance of SMEs, he found that long-term debt dampens the company's response to

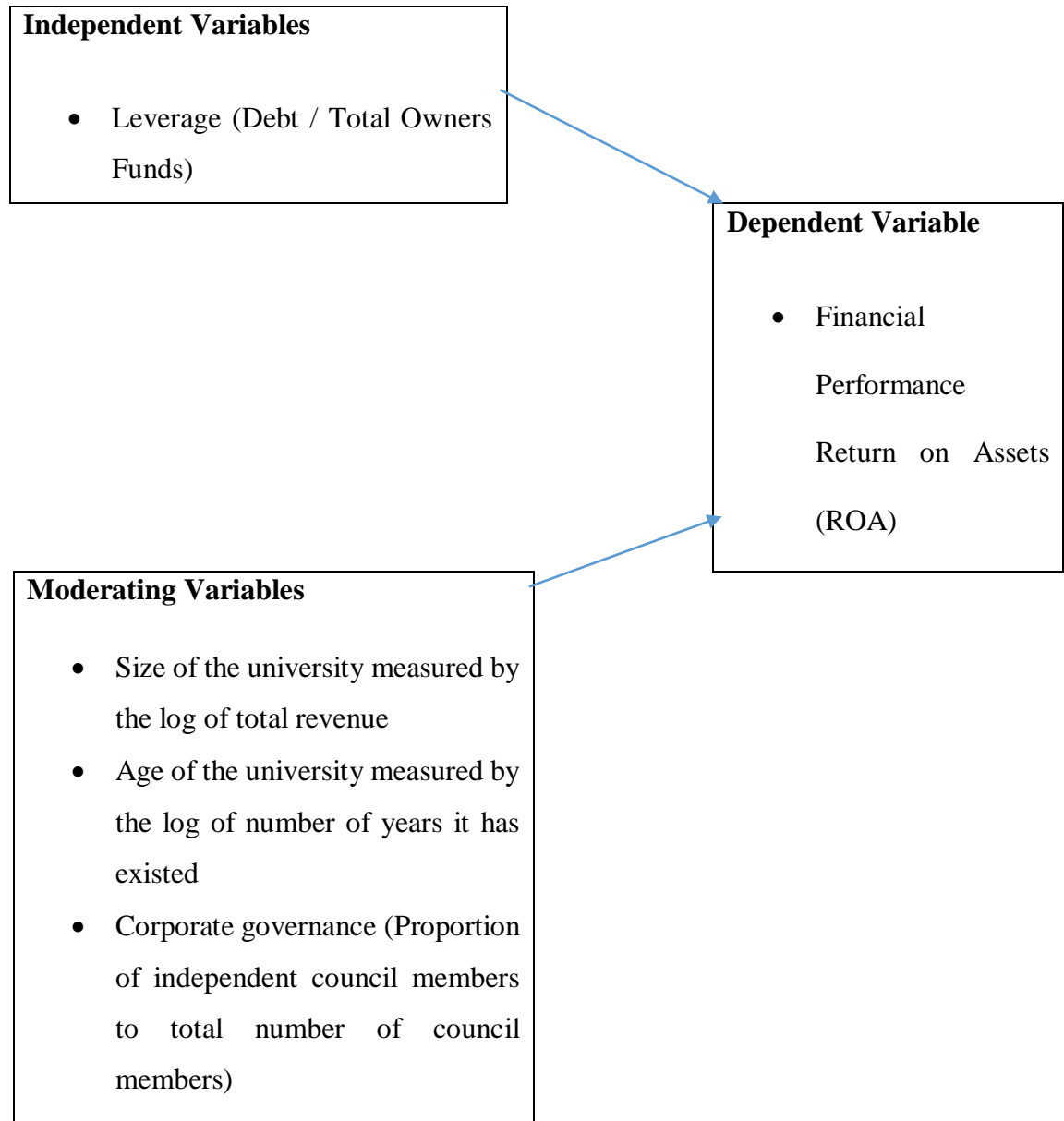
changing market conditions and helps companies to avoid leaving the market when the company's continued operation is socially undesirable.

A 2018 analysis by Karuma, Ndambiri and Oluoch on the effect of debt financing on the financial performance of manufacturing firms in the Nairobi securities exchange found that the list of manufacturing firms needed a positive and significant relationship between the accounts payable and the return on assets of manufacturing firms on the Nairobi stock exchange. This will build trust with the institutions that make the business happen and may lead to better offers or rates or even late payment leniency leading to higher returns on equity for the businesses.

A 2013 study by Muchugia on the effect of debt financing on commercial banks ' corporate profitability in Kenya found that banks are highly sensitive to changes in financial leverage due to their low capital to total assets. Many commercial banks are currently engaged in a program of expansion that requires large amounts of capital, most of which are converted into banks ' debt financing. The study explains that long-term loans are relatively more expensive, so bank management is afraid that using large proportions of them could lead to low profitability and thus business performance.

## 2.5 Conceptual Framework

This shows the dependent and independent variables in the conceptual framework. The independent variables include leverage, size and age of the university and corporate governance.



**Figure 2.1: Conceptual Framework**

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter discusses the methods used in the study's data collection and analysis.

### **3.2 Research Design**

Descriptive research model was used to analyze and assess the effect of debt financing on the financial performance of public universities in Kenya. Kothari, 2004, states that descriptive work discusses specific predictions, explanations of facts and characteristics related to persons, groups or circumstances.

The researcher used secondary data to gather information.

### **3.3 Population of the study**

Target population is the total population group from which the sample can be obtained. Kenya had 31 chartered public universities as at December 2018. For the analysis, a sampling procedure was performed. The research therefore targeted 21 Kenyan public universities.

### **3.4 Sample and Sampling Procedures**

Cooper & Schindler (2003), noted that a sample will be selected from a population. According to the council of higher education and ministry of education report there are 31 public universities licensed and registered in Kenya. A sample of 21 public universities was selected from a population representing a 67.74% of the entire population. The study period covered a period of 5 years (From 2014-2018).



### **3.5 Data Collection**

This study used secondary data that involved acquiring data from public universities' financial statements, for the period between 2014-2018

### **3.6 Data Analysis**

This is the way evidence is analyzed, modified and modeled to gain useful data and to endorse conclusions. Descriptive statistics like mean and standard deviation. Multiple linear regression was used to measure the relationship between dependent and independent variables.

#### **3.6.1 Analytical Model**

Pearson correlation analysis and multiple regression model was used to analyze quantitative data that was sated as:  $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$

Where: Y = Return on Assets

X1, X2, X3 & X4 = Independent Variables

X1= Debt financing which is measured by the proportion of Loans to the Total owners funds

X2= Size of the university measured by the log of total revenue

X3= Age of the university measured by the log of number of years it has existed.

X4= Corporate governance that is measured by the proportion of independent council members to the total number of council members.

$\beta_0$  = Constant  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  = Regression coefficients or Change included in Y by each X value  $\epsilon$  = error term.

## CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION

### 4.1 Introduction

Methods of analyzing data The key analysis used were descriptive statistics and regression analysis. Thus, the chapter entails the response rate, validity/reliability of data, descriptive statistics, and Regression analysis and T-test analysis.

### 4.2 Descriptive Statistics

The following table provides the ratios collected for the debt to total equity ratio for the sampled 21 public universities over a 5 year period. Debt financing was measured by the proportion of loans to total owner's funds.

**Table 4.1: Debt over Total Equity**

University	2014	2015	2016	2017	2018	Mean	Std. Dev.
Karatina University	0.29	0.28	0.21	1.33	1.35	0.692	0.5298
Kenyatta University	0.15	0.02	0.23	0.26	0.28	0.188	0.095
Kibabii University	0.052	0.15	0.12	0.079	0.065	0.093	0.036
Kirinyaga University	-	0.025	0.037	0.065	0.69	0.163	0.264
Kisii University	0.51	0.42	0.31	0.214	0.202	0.331	0.1990.1
Machakos University	0.097	0.086	0.076	0.073	0.45	0.156	0.147
Maseno University	0.28	0.21	0.19	0.075	0.067	0.164	0.819
Masinde Muliro	0.56	0.48	0.69	0.037	0.029	0.359	0.275
Meru University	0.93	0.99	0.093	0.078	0.089	0.436	0.436

Multimedia University	0.725	0.313	1.04	0.98	0.87	0.786	0.259
Nairobi University	0.004	0.043	0.049	0.002	0.034	0.026	0.020
Pwani University	10.22	12.37	5.72	6.04	4.10	7.690	3.092
University of Eldoret	0.93	0.82	0.55	0.357	0.246	59.924	132.86
University of Embu	0.049	0.042	0.048	0.037	0.032	0.042	0.006
University of Kabianga	0.398	0.355	0.287	0.231	0.190	0.92	0.077
Egerton University	0.39	0.35	0.311	0.291	0.256	0.320	0.047
Jomo Kenyatta	0.92	2.84	9.7	7.8	4.5	5.152	3.206
Chuka University	0.066	0.077	0.067	0.035	0.045	0.058	0.016
Co-Operative University	0.08	0.10	0.45	0.39	0.23	0.25	0.149
Moi University	0.43	0.46	0.39	0.32	0.38	0.396	0.048
Dedan Kimathi University	0.122	0.180	0.195	0.256	0.231	0.197	0.046

Table 4.3 shows the descriptive statistics of the return on assets over the 5-year period. Return on assets measures the financial performance in relation to the size and age of the university, the debt equity ratio and corporate governance.

**Table 4.2: Return on Assets**

University	2014	2015	2016	2017	2018	Mean	Std. Dev.
Karatina University	0.08	0.05	-0.02	0.003	0.032	0.023	0.044

Kenyatta University	0.085	0.066	0.005	-0.003	0.007	0.032	0.362
Kibabii University	0.011	0.03	-0.01	0.012	0.034	0.015	0.016
Kirinyaga University	-	-0.001	-0.045	-0.018	0.001	-0.013	0.018
Kisii University	0.005	0.002	0.01	0.001	0.05	0.014	0.018
Machakos University	-0.078	-0.077	0.006	-0.038	0.056	-0.026	0.051
Maseno University	0.001	0.01	0.011	0.030	0.039	0.018	0.014
Masinde Muliro	0.093	0.087	0.065	0.030	0.025	0.06	0.028
Meru University	0.023	0.041	-0.026	0.021	0.013	0.014	0.022
Multimedia University	-0.108	-0.074	-0.0001	-0.003	-0.01	-0.039	0.044
Nairobi University	-0.004	-0.005	0.005	0.028	0.031	0.011	0.016
Pwani University	0.24	0.34	0.76	0.04	0.012	0.278	0.270
University of Eldoret	0.0001	0.001	0.003	0.197	0.249	0.090	0.110
University of Embu	0.006	0.062	0.016	0.019	0.53	0.127	0.203
University of Kabianga	0.002	0.006	-0.010	-0.021	0.045	0.004	0.022
Egerton University	0.001	0.02	-0.045	0.035	0.046	0.011	0.032
Jomo Kenyatta	0.046	-0.051	-0.107	-0.008	0.0002	-0.024	0.052
Chuka University	0.09	0.12	0.14	0.23	0.28	0.172	0.071
Co-Operative University	0.001	0.012	0.021	0.031	0.06	0.025	0.020
Moi University	0.0132	-0.0269	-0.033	-0.0001	0.006	-0.008	0.018
Dedan Kimathi University	-0.028	-0.039	0.014	0.034	0.046	0.005	0.034

Table 4.3 shows the descriptive statistics for the size of the university measured by the total revenue over the 5-year period. Total revenue were extracted from the income statements of the universities.

**Table 4.3: Total Revenue in “000**

<b>University</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Mean</b>	<b>Std. Dev.</b>
Karatina University	842317	933817	935722	914280	925291	910285.4	34818.34
Kenyatta University	879595	918298	959546	107116	113459	9926415.	956243.13
	2	3	2	98	81	2	
Kibabii University	374048	653763	713626	845972	925892	702660.2	190193.5
Kirinyaga University	-	373032	377632	482660	498672	346399.2	180793.37
Kisii University	286571	298786	319706	304860	315865	1997935.	1393194.5
			5	5	1	6	9
Machakos University	544179	780259	783887	756384	792891	731520	94444.76
Maseno University	258062	310354	320401	285892	356962	3063345.	332426.82
	1	5	2	2	9	8	
Masinde Muliro	201290	231052	265354	285892	290456	2548091.	339905.22
	1	4	4	2	7	6	
Meru University	795095	903253	840160	902104	952265	878575.4	54840.59
Multimedia University	958181	103301	105722	100973	114527	2858206.	3620060.4
		1	4	42	6	8	2

Nairobi University	122047 52	112747 02	135330 66	129593 82	149672 34	1298782 7.2	1246126.0 4
Pwani University	844897	899935	102763 2	106917 1	115618 9	999564.8	113147.83
University of Eldoret	201789 1	209870 1	215984 0	269663 6	278356 1	2351325. 8	321786.04
University of Embu	626519	636332	757654	829642	843332 1	2256693. 6	3089251.1 4
University of Kabianga	896423	991946	110655 4	124507 6	113587 9	1075175. 6	120345.59
Egerton University	510012 7	556846 6	531067 0	587021 5	561890 7	5493677	265115.06
Jomo Kenyatta	719376	185706	201853	256978	269801	326742.8	198876.43
Chuka University	118433 5	141234 6	160267 1	167890 1	182314 9	1540280. 4	221895.13
Co-Operative University	479248	490245	560145	589241	602189	544213.6	50548.12
Moi University	601584 1	672193 5	620289 1	650926 1	689024 1	6468033. 8	322243.21
Dedan Kimathi University	110898 8	114890 7	119835 1	123798 9	123457 1	1185761. 2	50041.98

### **4.3 Correlation Analysis**

The relationship between debt financing, the total revenue, the number of years and the independent council members with return on the asset (ROA) was established. Cohen et al. (2007) argued that a moderate to high correlation exist if the Pearson Correlation value is between 0.3-.05 while high to very high relation exist between 0.51-0.70 with above 0.70 being a strong/very high correlation.



**Table 4.4: Correlation Analysis**

		Correlations				
		Debt_Equity	T.R	N.Y	I.Council	ROA
Debt_Equity	Pearson Correlation	1	-.187	-.043	. <sup>a</sup>	.339**
	Sig. (2-tailed)		.056	.663	.	.000
	N	105	105	105	105	105
T.R	Pearson Correlation	-.187	1	.699**	. <sup>a</sup>	-.046
	Sig. (2-tailed)	.056		.000	.	.639
	N	105	105	105	105	105
N.Y	Pearson Correlation	-.043	.699**	1	. <sup>a</sup>	-.079
	Sig. (2-tailed)	.663	.000		.	.423
	N	105	105	105	105	105
I.Council	Pearson Correlation	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>
	Sig. (2-tailed)	.	.	.	.	.
	N	105	105	105	105	105
ROA	Pearson Correlation	.339**	-.046	-.079	. <sup>a</sup>	1
	Sig. (2-tailed)	.000	.639	.423	.	
	N	105	105	105	105	105

\*\* . Correlation is significant at the 0.01 level (2-tailed).

a. Cannot be computed because at least one of the variables is constant.

Based on this model, given that statistically significant relationship exist when  $P < 0.05$  then there is a moderate to high relationship between Debt to equity and return on asset of 0.339\*\*. ROA does not have statistically significant relationship with other variables such as the number of independent council, the total revenue and the number of years. However, a high positive statistically significant relationship exist between the Number of Years the universities had existed and Total revenue of 0.699\* ( $P < 0.05$  at 0.00).

#### 4.4 Multiple Regression Analysis

The study used the Social Sciences Statistical Package (SPSS) to script, enter and quantify the measurements of the study's multiple regressions.

**Table 4.5: Model of Summary**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.356 <sup>a</sup>	.127	.101	.095

a. Predictors: (Constant), N.Y, Debt Equity, T.R

R<sup>2</sup> is the coefficient of determination. The goodness of fit model indicated that there was a moderate to strong relationship between debt financing measured by Total Revenues, Debt to Equity and Number of years with financial performance measured by ROA ( $R = .356^a$ ). The results shows moderate to high linear dependency of Return on Assets on debt financing, number of years and sales revenues. Indeed, the Coefficient determinant R<sup>2</sup> indicated the variation in the debt financing effect and financial performance results evidenced by goodness of fit model. Specifically, 0.127 (12,7%) variation in Return on

Assets which measures financial performance in the study can be explained by Sales revenues, number of years and debt financing in the public universities in Kenya.

#### 4.5 Analysis of Variance (ANOVA)

**Table 4.6 Analysis of Variance (ANOVA)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.133	3	.044	4.893	.003 <sup>b</sup>
	Residual	.915	101	.009		
	Total	1.048	104			

- a. Dependent Variable: ROA
- b. Predictors: (Constant), N.Y, Debt Equity, T.R

#### **4.6 Coefficient of Determination**

According to the table created above, the equation ( $ROA = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$ ) becomes:

As per the SPSS generated the established regression equation was:

$$Y = 0.24 + 0.17\beta_1 + 03.814X_2 + 0.01X_3 + 0X_4 + \epsilon$$

ROA = Return on assets

X1= Represents debt financing which is measured by the proportion of Loans to Total owners funds

X2= Size of the university measured by the log of total revenue

X3= Age of the university measured by the log of number of years it has existed.

X4= Corporate governance that is measured by the proportion of independent council members to total number of council members.

**Table 4.7: Coefficient of Determination**

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.025	.014		1.721	.088
	Debt_Equity	.017	.005	.356	3.733	.000
	T.R	3.814E-009	.000	.127	.952	.343
	N.Y	-.001	.001	-.152	-1.163	.248

a. Dependent Variable: ROA

**Table 4.8 Return on Assets over the Years as a Measure of Performance**

<b>University</b>	<b>Years</b>	<b>D/TE</b>	<b>T. R '000</b>	<b>N.Y</b>	<b>I/TC</b>	<b>ROA</b>
Karatina University	2014	0.29	842317	12	44.4	0.08
	2015	0.28	933817	12	44.4	0.05
	2016	0.21	935722	12	44.4	-0.02
	2017	1.33	914280	12	44.4	0.003
	2018	1.35	925291	12	44.4	0.021
Kenyatta University	2014	0.15	8795952	54	44.4	0.085
	2015	0.02	9182983	54	44.4	0.066
	2016	0.23	9595462	54	44.4	0.005
	2017	0.26	10711698	54	44.4	-0.003
	2018	0.28	11345981	54	44.4	0.007
Kibabii University	2014	0.052	374048	8	44.4	0.011
	2015	0.15	653763	8	44.4	0.03
	2016	0.12	713626	8	44.4	-0.01
	2017	0.079	845972	8	44.4	0.012
	2018	0.065	925892	8	44.4	0.034
Kirinyaga University	2014	-	-	3	44.4	-
	2015	0.025	373032	3	44.4	-0.001
	2016	0.037	377632	3	44.4	-0.045
	2017	0.065	482,660	3	44.4	-0.018
	2018	0.69	498672	3	44.4	0.001

Kisii University	2014	0.51	286571	6	44.4	0.005
	2015	0.42	298786	6	44.4	0.002
	2016	0.31	3197065	6	44.4	0.01
	2017	0.214	3048605	6	44.4	0.001
	2018	0.202	3158651	6	44.4	0.05
Machakos University	2014	0.097	544179	6	44.4	-0.078
	2015	0.086	780259	6	44.4	-0.077
	2016	0.076	783887	6	44.4	0.006
	2017	0.073	756384	6	44.4	-0.038
	2018	0.045	792891	6	44.4	0.056
Maseno University	2014	0.28	2580621	64	44.4	0.001
	2015	0.21	3103545	64	44.4	0.01
	2016	0.19	3204012	64	44.4	0.011
	2017	0.075	2858922	64	44.4	0.030
	2018	0.067	3569629	64	44.4	0.039
Masinde Muliro	2014	0.56	2012901	47	44.4	0.093
	2015	0.48	2310524	47	44.4	0.087
	2016	0.69	2653544	47	44.4	0.065
	2017	0.037	2858922	47	44.4	0.030
	2018	0.029	2904567	47	44.4	0.025
Meru University	2014	0.93	795095	11	44.4	0.023
	2015	0.99	903253	11	44.4	0.041

	2016	0.093	840160	11	44.4	-0.026
	2017	0.078	902104	11	44.4	0.021
	2018	0.089	952265	11	44.4	0.013
Multimedia University	2014	0.725	958181	11	44.4	-0.108
	2015	0.313	1033011	11	44.4	-0.074
	2016	1.04	1057224	11	44.4	-0.0001
	2017	0.98	1097342	11	44.4	-0.003
	2018	0.87	1145276	11	44.4	-0.01
Nairobi University	2014	0.004	12204752	63	44.4	-0.004
	2015	0.043	11274702	63	44.4	-0.005
	2016	0.049	13533066	63	44.4	0.005
	2017	0.002	12959382	63	44.4	0.028
	2018	0.034	14967234	63	44.4	0.031
Pwani University	2014	10.22	844897	12	44.4	0.24
	2015	12.37	899935	12	44.4	0.34
	2016	5.72	1027632	12	44.4	0.76
	2017	6.04	1069171	12	44.4	0.04
	2018	4.10	1156189	12	44.4	0.012
University of Eldoret	2014	0.93	2017891	6	44.4	0.0001
	2015	0.82	2098701	6	44.4	0.001
	2016	0.55	2159840	6	44.4	0.003
	2017	0.357	2696636	6	44.4	0.197



	2018	0.246	2783561	6	44.4	0.249
University of Embu	2014	0.049	626519	8	44.4	0.006
	2015	0.042	636332	8	44.4	0.062
	2016	0.048	757654	8	44.4	0.016
	2017	0.037	829642	8	44.4	0.019
	2018	0.032	843321	8	44.4	0.053
University of Kabianga	2014	0.398	896423	10	44.4	0.002
	2015	0.355	991946	10	44.4	0.006
	2016	0.287	1106554	10	44.4	-0.010
	2017	0.231	1245076	10	44.4	-0.021
	2018	0.190	1135879	10	44.4	0.045
Egerton University	2014	0.39	5100127	80	44.4	0.001
	2015	0.35	5568466	80	44.4	0.02
	2016	0.311	5310670	80	44.4	-0.045
	2017	0.291	5870215	80	44.4	0.035
	2018	0.256	5618907	80	44.4	0.046
Jomo Kenyatta	2014	0.92	719376	38	44.4	0.046
	2015	2.84	185706	38	44.4	-0.051
	2016	9.7	201853	38	44.4	-0.107
	2017	7.8	256978	38	44.4	-0.008
	2018	4.5	269801	38	44.4	0.0002
Chuka University	2014	0.066	1184335	15	44.4	0.09

	2015	0.077	1412346	15	44.4	0.12
	2016	0.067	1602671	15	44.4	0.14
	2017	0.035	1678901	15	44.4	0.23
	2018	0.045	1823149	15	44.4	0.28
Co-Operative University	2014	0.08	479248	15	44.4	0.001
	2015	0.10	490245	15	44.4	0.012
	2016	0.45	560145	15	44.4	0.021
	2017	0.39	589241	15	44.4	0.031
	2018	0.23	602189	15	44.4	0.06
Moi University	2014	0.43	6015821	35	44.4	0.0132
	2015	0.46	6721935	35	44.4	-0.0269
	2016	0.39	6202891	35	44.4	-0.033
	2017	0.32	6509261	35	44.4	-0.0001
	2018	0.38	6890241	35	44.4	0.006
Dedan Kimathi University	2014	0.122	1108988	12	44.4	-0.028
	2015	0.180	1148907	12	44.4	-0.039
	2016	0.195	1198351	12	44.4	0.014
	2017	0.256	1237989	12	44.4	0.034
	2018	0.231	1234571	12	44.4	0.046

D/TE- Debt over Total Equity

T.R- Total Revenue

N.Y- Number of Years of Existence

I/TC- Independent Council over total Council\* 100 to get percentage of independent council

ROA- Return on Asset Measured by Net income/Total Assets

Mean and Standard deviation

#### **4.7 Discussion of Research Findings**

The study identified the positive and significant relationship between Kenya's debt financing and financial performance of public universities. This is a sign that debt funding has a major impact on Kenya's public universities ' financial performance. Similarly, Saad et al (2015) said equity funding has a substantially positive relationship with business performance.

According to the proven regression formula, all variables (debt ratio, college age, corporate governance and size) are taken into account. A unit increase in the debt ratio would result in an increase of 0.17 in the effect of debt financing on financial performance; a unit increase in total revenue would result in an increase of 3.814E-0.09 in the effect of debt financing on financial performance and a unit increase in university age will lead to a - 0.001 increase in the effect of debt financing on financial performance. This refers to the size calculated by the total revenue log, which is more related to the financial performance effect of debt financing followed by debt.

Results of the correlation analysis showed moderate to high debt-to-equity relationship and asset return of 0.339. Nevertheless, there is no statistically significant correlation between ROA and other factors, including the number of independent council members, total revenue, and years. Nevertheless, there is a high positive statistically significant correlation between the number of years the universities have served and the total revenue of 0.699\*

( $P < 0.05$  at 0.00). Nonetheless, the goodness of the fit model showed the fit was perfect. The regression analysis showed that a strong relationship existed between financial performance and debt financing ( $R = 0.356a$ ) indicating a moderate to high linear dependency on Return on Assets debt financing.

$R^2$  is the coefficient of determination. The goodness of fit model indicated that there was a moderate to strong relationship between debt financing measured by Total Revenues, Debt to Equity and Number of years with financial performance measured by ROA ( $R = .356^a$ ). The results shows moderate to high linear dependency of Return on Assets on debt financing, number of years and sales revenues. Indeed, the Coefficient determinant  $R^2$  indicated the variation in the debt financing effect and financial performance results evidenced by goodness of fit model. Specifically, 0.127 (12,7%) variation in Return on Assets which measures financial performance in the study can be explained by Sales revenues, number of years and debt financing in the public universities in Kenya.

The results from ANOVA showed the model's overall statistical significance. In addition, a substantial value of 0.003. The significance value in this analysis is.003, which is less than 0.05, so the model is statistically significant in predicting debt and profits. In addition, it was found from the study's regression model that any unit increase in debt would improve financial performance by 12.7%. Because the critical values acquired were less than 5 percent ( $0.003 = 0.3$  percent) within the appropriate zone, the null hypothesis can be dismissed to mean that debt financing has a positive relationship with the financial performance of public universities in Kenya.

## **CHAPTER FIVE: DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter presents the discussions on the data findings, conclusions and recommendation. The chapter is outlined into discussions, conclusions, recommendation and areas for further studies.

### **5.2 Summary of Findings**

The goal of the research was to assess the impact of debt financing on the financial performance of public universities in Kenya. The conceptual model for the analysis was debt funding, university size, university age, and corporate governance as the independent variable with dependent financial performance. The research surveyed 21 public universities in Kenya from a population of 31 public universities comprising 67.74 million over a 5-year period from 2014-2018.

### **5.3 Conclusion**

The study found a positive and meaningful relationship between debt financing and public university financial performance in Kenya. Therefore, the study concludes that any rise in the proportion of loans to total owners funds increases the return on resources that calculate public universities' financial performance in Kenya. Results of the correlation analysis showed moderate to high debt-to-equity relationship and asset return of 0.339. Nonetheless, ROA has no statistically significant relationship with other variables including number of independent council members, total revenue, and the number of years.

## **5.4 Recommendations**

Research has found that the relationship between debt financing and public university financial performance in Kenya has been positive and negligible. The study therefore suggests that public university administration should employ appropriate debt levels as interest on debt can impact the cash flows of the institution.

Furthermore, the study also found out that there is a negative and negligible correlation between universities sizes and universities age with the financial performance of Kenya's public universities. Therefore, the study suggests that organizations use the best corporate governance practices to run their institutions.

Finally, the study suggests good corporate governance by making more independent representative members to the council of the public universities. Independent council members do not represent a particular interest but a public interest and will therefore instill stability in debt acceptance and transparency. This would reduce the level of public universities ' lending and debt burden.

## **5.5 Limitations of the Study**

The purpose of this study was to investigate the relationship between debt financing and the financial performance of public universities in Kenya. Consequently, the findings are based on public universities and may not be applicable to private universities because financial models differ as they are more dependent on fees charged to fund their operations by students and donors.

The research also used secondary information from the internet that was searched. Secondary information is historical in nature and may not reflect the current state of public

universities lending and financing in Kenya. If the organizations release misleading information, secondary data from the organizations' financial statements may be deceptive, it is difficult to identify if the data is accurate.

Furthermore, the observations and conclusions are based on a perceived five-year cycle from 2014-2018 and are therefore not relevant to any other period.

## **5.6 Areas for Further Research**

The study recommends that further research should be on the effect of debt financing on financial performance of private universities in Kenya.

## REFERENCES

Chepkemoi N. (2013). An analysis of the effect of capital structure of SMEs on financial performance: A case of Nakuru town. Unpublished research project of Kabarak University

CPS. (2016). The state of research funding in Kenyan Universities, Nairobi: CPS International

Dube (2013). The impact of debt financing on productivity of small and medium scale enterprises (SMEs): A case study of SMEs in Masvingo urban. International Journal of Economics, Business and Finance.

Davydov, D. (2014). Essays on debt financing, firm performance, and banking in emerging markets. Unpublished thesis. Act. Wasaensia

Githaigo, P. N. & Kabiru, C. G. (2015). Debt financing and financial performance of small and medium sized enterprises: evidence from Kenya. *Journal of Economics Finance and Accounting*, 473-471.

Harelimana, J. B. (2017). Effect of debt financing on business performance: a comparative study between I&M Bank and Bank of Kigali, Rwanda. *Global journal of management and Business Research*, 37-45



Kajirwa, H. I. (2015). Effects of debt on firm performance: A survey of commercial banks listed on Nairobi securities exchange. *Global Journal of advanced Research*, 1025-1029

Kothari, C. (2004). *Research Methodology: Methods & Techniques*, 2nd edition. *New age International Publishers*, New Delhi, India.

Koskei, N.K. (2017). Capital structure relation to the performance of an organization: private sugar manufacturing companies. *International journal of Innovative Research and Development*, 98-103

Lambe (2014). Corporate capital structure and firm's market value in Nigeria. *Research journal of finance and accounting*, 12-16.

Langat C.P, Chepkoech L., Shavulimo M.P., Wachira, M., & Thuo D. (2014). The effect of debt financing on the profitability of Kenya Tea Development Authority processing factories

Magara, M., (2012). Capital structure and its determinants at the Nairobi Securities Exchange. MSc thesis: University of Nairobi, Kenya.

Maina, L. &Ishmail, M. (2014). Capital structure and financial performance in Kenya: Evidence from firms listed at the Nairobi Securities Exchange. *International Journal of Social Sciences and Entrepreneurship*.

Muchugia L. (2013). The effect of debt financing on firm profitability of commercial banks in Kenya.

Myers, S. C., &Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*.

Makanga, A. M. (2015). The effect of debt financing on the financial performance of companies listed at the Nairobi Securities Exchange. MBA project University of Nairobi.

S. A. Al-Sakran (2001) Leverage determinants in the absence of corporate tax system: the case of non-financial publicly traded corporations in Saudi Arabia.