MEDIATING ROLE OF FINANCIAL LEVERAGELEVEL ON THE EFFECT OF FIRM SIZE ONFINANCIAL PERFORMANCE OF SUGAR FIRMS IN WESTERN KENYA

BY

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(PhD/BE/00196/2015)

A RESEARCH PROPOSAL SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION

DEPARTMENT OF ACCOUNTING AND FINANCE

MASENO UNIVERSITY

2018

DECLARATION

Declaration by the candidate:

I declare that this research proposal is my original work and has not been previously presented in any university for award of any degree.

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This research proposal has been presented for evaluation with our approval as the university supervisors.

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ABSTRACT

Kenyan sugar industry, an agricultural sub-sector, contributes 15% of the agricultural GDP and 7.5% of the national GDP. 14 out of the 15 sugar firms are located in the Western region of Kenya, of which 6 are state owned. These firms experience poor financial performance compared to other global players. Globally, Brazil records an average of 53% profit after tax, India achieves an average of 42% profit after tax. Regionally, South Africa tops with an average of 28% profit after tax as Kenya achieves an average of -24% profit after tax during 2007-2016. Kenya government negotiated COMESA import safeguard to protect the local sugar firms, reshuffled their management and has occasionally offered financial grants to them. Thus, the poor financial performance is an enigma. Miwani Sugar Company is under receivership, while Mumias Sugar Company ails. The extension of the COMESA import safeguard expires in February, 2019 putting the existence of the sugar firms at stake. Sugar firms are said to be highly leveraged. Financial leverage and economies of scale are theoretically associated with financial benefits to a firm, yet the available empirical literature has not established their influence on financial performance of sugar firms in western Kenya, but the focus has been on corporate governance strategies. Previous research on influence of financial leverage and firm size on financial performance in other industries has been marred by conflicting results leaving no idea of the sugar scenario. Theoretically, leverage level is determined by firm size thereby making financial leverage a potential mediator in size-performance relationship. However, there is no known information on the influence of financial leverage level on the relationship between firm size and financial performance of sugar firms in Western Kenya. The purpose of this study will be to analyse the mediating role of financial leverage level on the relationship between firm size and financial performance of sugar firms in Western Kenya. Specifically the study seeks to determine the effect of; firm size on financial performance, firm size on financial leverage level, financial leverage level on financial performance and to analyse the influence of financial leverage level on the relationship between firm size and financial performance of sugar firms in Western Kenya. The study will be anchored on the theories of; economies of scale to capture the varied sizes of sugar firms against their financial performance, trade- off theory to demystify leverage level and financial performance relationship, ROA and ROE to analyse the financial performance of sugar firms. Correlational research design will be used on 14sugar firms in Western region of Kenya sampled using saturated sampling technique due to their concentration in the region. The study will use secondary data of the firms' financial statements obtained from the various firms and the Kenya Sugar Board. Panel data for the period 2007-2016 comprising 140 data points will be used. The data will be subjected to unit root test to check on stationarity. The data collection form will be used to extract the required information from the financial statements. Data will be analysed using panel multiple regression analyses to establish the relationships between firm size and financial performance, firm size and financial leverage level, financial leverage level and financial performance and influence of financial leverage level on the relationship between firm size and financial performance. The findings of the study may be of use to policy makers as they seek to formulate policy addressing the sugar industry and to other researchers with related interest in academia.

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LIST OF ABBREVIATIONS

EBITDA	-	Earnings before Interest, Taxes, Depreciation and Amortization
EBIT	-	Earnings before Interest and Taxes
EPS	-	Earnings per Share
FGL	-	Feasibility Generalized Least Squares
NMP	-	Net Profit Margin
NSE	-	Nairobi Securities Exchange
OLS	-	Ordinary Least Square
ROA	-	Return on Asset
ROE	-	Return on Equity
TA	-	Total Assets
TS	-	Total sales
MVE	-	Market Value of Equity
BVE	-	Book Value of Equity
COMESA	-	Common Market for Eastern and Southern Africa
GDP	-	Gross Domestic Product
KSB	-	Kenya Sugar Board
PAT	-	Profit after tax
NW	-	Net Worth

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OPERATIONAL DEFINITION OF TERMS

Financial Leverage-The amount of borrowed funds in the capital structure of a firm measured in terms of debt ratio, interest coverage ratio and debt to equity ratio.

Firm size–How large or small a firm is and defined by the production capacity of a firm, assets held by the firm and book value of equity.

Financial Performance - Position of a firm in terms of profitability, liquidity and solvency, reflected by a firm's Return on Equity (ROE), Return on Asset(ROA) and Tobin's Q.

Return on Asset- A ratio used to measure a firm's profitability relating its earnings to its assets.

Return on equity- A ratio used to measure profitability of a firm by relating its profit after taxes to its net worth.

Tobin's Q -The ratio of the market value of a firm's assets (equity and debt) to its assets' replacement cost.

APPENDICES

1.0 INTRODUCTION

This section brings into perspective the background of the study, and how the variables; firm size, financial leverage level and financial performance relate with each other. It also highlights the statement of the problem, objectives of the study, research hypotheses, significance of the study, scope of the study and the conceptual framework.

1.1Background to the Study

Firms have different production capacities, total number of assets and total sales achieved hence, small, medium and large firms. From the theory of economies of scale, larger firms enjoy cost advantage since cost per unit of output decreases with increasing scale as fixed costs are spread over more units of output. They reap from discounts on bulk buying, specialization and division of labor, Grant and Vernon (2003).This qualifies firm size as a predictor of a firm's financial performance. Given the benefits of economies of scale, larger firms are likely to have more savings and retained profits, they are more diversified than smaller firms, have low bankruptcy costs and are well known making it easier for them to raise funds for investment through the stock market instead of borrowing as opposed to their smaller counterparts. In this respect, firm size is a possible predictor of a firm's financial leverage level.

Firms trade-off benefits and costs of debt and equity financing and finds an optimal capital structure after accounting for market imperfections such as taxes, bankruptcy and agency costs. This incorporation of debt capital in the capital structure of a firm is referred to as financial leverage. Financial leverage enhances afirm's value as reflected by its ROE, ROA and profit margin, Pandey (2010) Miller and Modigliani (1963),in their study on capital structure relevancy in predicting the value of a firm observed that in the presence of corporate income taxes, and the treatment of interest paid to debt-holders as a deductible expense, there is tax savings on interest paid on borrowed funds by firms making debt financing cheaper. This makes the value of levered firms to be higher than those of unlevered firms. However, debt financing when used in excess, beyond the optimal level can bring down the firm causing bankruptcy. Financial leverage level is therefore a predictor of a firm's financial performance. The fact that financial leverage level is predicted by firm size but predicts a firm's financial performance qualifies it as a possible mediator variable in this study.

Kenya's vision 2030 envisage the role of the manufacturing sector as to create employment and wealth by increasing its contribution to the GDP by at least 10 % per annum, Ministry of Industry, Trade and Cooperatives (2011), *Vision 2030 manufacturing sector*. Among the objectives to be pursued are to; strengthen the capacity and quality of domestically manufactured goods, increase the generation and utilization of Research and Development results, raise the market share for the products in the regional market from 7% to 15% and to develop niche products for existing and new markets.

The manufacturing sector in Kenya is the third largest by sectoral contribution to GDP with 10.3% after transport and communication's 11.3% and Agriculture and Forestry's 23.4%, Kenya National Bureau of Statistics (2008).The manufacturing sector in Kenya is diversified in terms of manufacturing activities. Processing of food and other agricultural goods still contributes the largest share of manufacturing GDP followed by textile and garment and refining of crude petroleum respectively. For instance, in 2006, the contribution from the agro-processing of food commodities to manufacturing value added to GDP was 21% while that of refining of petroleum products was 15%. Report from the Kenya Sugar Board (2010-2014) states that sugar industry accounts for about 15% of Agricultural GDP. There is therefore need to improve the sugar industry since this will translate to improved contribution to Agricultural GDP and enhances achievement of vision 2030.

Most of the sugarcane crushing firms are located in the Western region of Kenya where we find 14 out of the 15 sugar firms available in the country prompting studies on sugar firms to be based in the region. Sugar industry as an agricultural sub-sector registers impressive financial performance in some countries but records penurious financial performance domestically. Globally, Brazil achieves the best financial performance with an average of 53% profit after tax, while India comes first with an average of 42% after tax profit continentally. Regionally, South Africa leads with an average of 28% profit after tax, whereas Kenya achieves -24% profit after tax which is substantially below other global players in the industry and a major cause for alarm. This was echoed by the report from the departmental committee on Agriculture, Livestock and Co-operatives as presented by the Kenya National Assembly, Eleventh Parliament, third session (2015) on

the crisis facing the sugar industry in Kenya and the imminent collapse of the sugar industry in Western Kenya. This is evident with the collapse and occasional closure of some sugar firms.

Kenya has 15 sugar firms, 6 of which are government owned. These firms operate at different scales as reflected by their production capacities, total sales and total assets hence large, medium and small sizes. These sugar firms are said to be debt laden and unable to pay their cane suppliers in time, a situation making cane producers to shift to alternative crops. The situation is further complicated by the proliferation of cheap sugar from other producers into the country, creating unconducive trade environment to the already ailing sugar firms. Miwani Sugar Company has been under receivership since the year 2000, while Mumias Sugar Company closed down in March, 2015 but was later revived by the government, yet unstable to date.

In early 2001, the Kenya government negotiated COMESA safeguard to give the sugar industry sufficient time to improve its productivity and efficiency. Kenya was allowed an extension of the safeguard effective March 2015 which expires in February 2019. In addition to that, the government has occasionally given financial grants to these sugar firms, Mumias Company being the latest beneficiary in 2016.The management of these firms have often been reshuffled with the ultimate goal of improving on their governance, yet no good performance has been achieved. Researchers are therefore faced with the task of demystifying the paradox of the poor financial performance of these Kenyan sugar firms despite all the effort to protect and promote them. This forms the motivation behind this study on sugar firms in Western Kenya.

Previous studies on Sugar firms have concentrated on areas such as growth and productivity of sugar companies and effect of corporate governance on financial performance of sugar firms leaving the information on effect of financial leverage on financial performance of sugar firms blurred. For instance, Chellaswamy and Revathi (2013),conducted a study on Indian sugar firms to investigate growth and productivity of these firms using a sample of 40 out of 119 sugar firms listed in Bombay Security Exchange and observed that effective utilization and modernization of the company resources was core together with the introduction of quality labor compensation such as

rewards to workers alongside proper planning, purchasing, handling of and accounting for materials.

Another study was conducted on drivers of financial Performance of Sugar Industry in India by Rajan and Chandrasekaran (2015), where they sought to investigate reasons for sustainability of sugar mills despite poor economy and observed that; a possible explanation for sugar mills to exist in the business, while claiming that they are not able to pay the farmers back in time, is just a strategy to regulate the supply (cultivation) of sugarcane by farmers in the catchment area of their mills.

In Kenya, a study was carried out by Mbalwa *et al* (2014), on effect of corporate governance on sugar firms in Kenya and observed that corporate governance practices were positively related to the financial performance of sugar manufacturing firms in Western Kenya. They apportioned the poor financial performance of Kenyan sugar firms to poor corporate governance and lack of diversification. Whereas, a study carried out by Harwood *et al* (2015) on effect of financial leverage on financial performance of sugar firms using retrospective research with a sample of 3 sugar firms obtained a negative relationship between the study variables as reflected by ROA and ROE.

Besides corporate governance, there are other predictors of financial performance of firms as suggested by various theories. This study will be guided by the theory of economies of scale and the trade-off theory. The theory of economies of scale postulates that large firms perform better than smaller firms due to discounts they access on large quantity buying, better interest rates and division of high fixed costs across large number of units. These firms also enjoy specialization of labor and can take advantage of fields requiring huge capital outlay. This theory would help this research in establishing the extent to which the sugar firms' financial performances are anchored on economies of scale due to their sizes. A review of the validity of this theory across different firms in different countries show that; Yoon and Jang (2005), Papadognas (2007), Ching and Gerab (2012), Malik (2011), Vijayakumar and Tamizhselvan (2010), Babalola and Abiodun (2013), Kipkoech and Kigen (2013), Kaguri (2012), Mehrjardi (2012) and Mule *et al*(2015) investigated the effect of firm size on financial performance while applying ordinary least square regressions, multi ratio model and multivariate statistical method,

multiple regression model and obtained positive effect of firm size on financial performance of firms. Whereas, Amato and Burson (2007), Lee (2009), Dermigunes and Ucler (2015) and Amar (2003) investigated linear and cubic forms of relationships using fixed effect dynamic panel data model, using unit root test and co-integration test to check on the stationarity of the series and obtained negative relationship between firm size and financial performance. However, Niresh and Velnampy (2014) applied regression model and correlation analysis but found no relationship between firm size and financial performance.

Studies carried out on various firms using ordinary least square regression model, multi-ratio model and multivariate statistical method, based on linear and non-linear specifications, simple semi-logarithmic specification of the model, using cross-sectional data and time series data and using panel correlation and multiple regression methods revealed positive relationship between firm size and financial performance and hence in tandem with the theory of economies of scale. On the contrary research done on other firms examining both linear and cubic forms of relationships, using fixed effect dynamic panel data model, revealed negative relationship between firm size and financial performance thereby contradicting the theory of economies of scale. While, a study was done on quoted manufacturing firms using regression model and correlation analysis and the findings revealed no relationship between firm size and financial performance. The findings from industries researched on conflict and there is lack of information on effect of firm size on financial performance on sugar firms in Western Kenya.

Firms incorporate different levels of financial leverage and prefer to use their internal sources of financing to equity financing. If internal financing does not meet their financial needs, external financing is sought, Pandey (2010). Large profitable firms are less likely to opt for external financing for new projects because they have the available funds in the form of retained earnings and due to the attached costs of debt and equity financing. In this case internal financing is more popular than external financing among large firms which have huge amounts of retained profits and that debt is considered the best option for smaller firms which have very little in terms of retained earnings. Attempts by researchers to verify the validity of this assumption has since yielded the results thereof.

Marete (2015) and Kale (2014) used regression analysis and Pearson's product correlation analysis and random effect model and obtained positive relationship between firm size and financial leverage, while Vithessonthi and Tongurai (2014), Baloch *et al* (2015) and Ezeoha (2015) used multiple regression technique ,panel data regression model, cross sectional regression, year by year regression and panel data fixed effect regression model and found a negative relationship between firm size and financial leverage.

There is observable lack of cohesion in the research results given that, studies using listed non-financial blue chip companies and on listed companies revealed positive relationship between firm size and financial leverage, whereas research carried out using a data of sampled firms' yearly observations analyzed using panel regression and year by year cross-sectional regression, on auto sector consisting of sub-sectors as motor vehicle, trailers and parts using multiple regression model, on data set of quoted firms using panel data fixed effect regression model and results revealed negative relationships. The negative results support the pecking order theory since the results demonstrates that the level of financial leverage reduces with the increase in firm size since these firms tend to have other alternative funding for their investment from their retained profits. However, findings from the European countries emitted mixed results across the geographical distributions using similar methodology and sample characteristics. The discrepancy in the findings makes it difficult to draw a conclusion on the effect of firm size on financial leverage among sugar firms in Western Kenya.

The Kenyan sugar firms are said to be debt laden and unable to meet their long term and short term financial obligations. This makes it necessary to establish how financial leverage relates with financial performance especially in the context of sugar firms. The trade-off theory by Kraus and Litzenberger, (1973) and Pandey (2010) postulates that a firm trades-off the benefits and costs associated with debt and equity financing and finds an optimal capital structure after accounting for market imperfections such as taxes and bankruptcy costs. According to this theory, debt capital is associated with some financial benefits which helps improve the value of the firm. According to the theory of financial performance as reflected by Return on equity (ROE) by Brigham (2010), greater and optimal use of financial leverage is portrayed by a firm's ROE which will be seen to be

higher than the industrial average. This has attracted the attention of researchers to try to establish to what extent the trade-off theory applies to various firms within different industrial set-ups in different countries.

Studies on effect of financial leverage level on the financial performance of firms across different industrial contexts and countries present mixed results with positive, negative and no relationships obtained. For instance, Berger and Bonaccorsi (2006), Marko (2014), David and Olorunfemi (2010), Akhtar *et al* (2012) and Rehman (2013) found positive relationship between financial leverage and financial performance after applying multiple regression analysis, panel data analysis using fixed effect estimation, random effect estimation and maximum likelihood estimation and correlation analysis. Whereas Onalapo and Kajola (2010),Al-Taani(2013), Harwood and Cheruiyot(2015), Mwangi et al (2014), Maina and Kodongo (2013) found negative relationship between financial leverage and financial performance using multiple regression model, Pearson's correlation analysis, Panel data model and feasible generalized least squares. On the contrary, Lauretnte (2002) found different results across different countries using maximum likelihood procedure to estimate a stochastic cost inefficiency to leverage across medium sized firms. However, there is lack of in-depth information on the effect of financial leverage on financial performance of sugar firms in Western Kenya.

Evidence from the empirical studies reveals a diversity of findings. Studies on various firms applying parametric measures of profit efficiency as indicator to measure agency cost, multiple regression analysis, panel data analysis using fixed-effect estimation, random effect estimation and maximum likelihood estimation, on listed sugar firms applying correlation analysis and on secondary data from financial statements of sampled listed firms which were selected using stratified random sampling technique applying multiple regression technique revealed positive relationships. Whereas studies on a sample of three sugar firms using retrogressive research strategy in data collection while applying multiple regression analysis and Pearson's product correlation analysis, on various firms applying multiple regression analysis and correlation analysis presented negative results as reflected by ROA & ROE. In some cases results were positive as reflected by ROA but negative as reflected by ROE, whereas the converse held true in other cases. The research done on sugar firms was retrospective hence prone to a lot of

bias and the 3 firms used may not give the overall picture of the relationship between financial leverage and financial performance in sugar firms in Western Kenya.

According to the theory of financial performance as reflected by Return on asset (ROA) by Brigham (2010), efficient utilization of a firm's assets and incorporation of debt capital in a firm's capital structure are reflected in a firm's ROA. High ROA results from high basic earning power and low interest costs due to average use of debt making its net income to be high. Whereas the theory of financial performance as reflected by Return on equity (ROE) acknowledges the benefits associated with debt financing hence in tandem with the trade-off theory. The theory of financial performance as reflected by ROA and ROE imply positive relationship between financial leverage and financial performance but within the optimal limits above which it becomes disastrous. Concurrently, the theory of economies of scale by Gan and Vernon (2003) predicts a positive relationship between firm size and financial performance of firms. These theories guide the study in investigating the influence of financial leverage on the effect of firm size on financial performance.

Research findings on the influence of financial leverage on the relationship between firm size and financial performance reveal conflicts given that Yoon and Jang (2005), Pervan and Josipa (2012) used ordinary least square regression, multiple regression analysis and Tobin's Q and found positive relationships. Whereas, Vithessonthi and Tongurai (2014), Umar *et al* (2014) used panel regressions and year-by-year cross-sectional regression, and correlation analysis and obtained negative relationships. However, Laurente (2002) used multiple regression analysis and obtained varied results across different countries. However, there is no known information on the mediating role of financial leverage on the relationship between firm size and financial leverage.

The findings above contradict each other. Research results on restaurant firms using ordinary least square regressions model, on manufacturing industry which tested both linear and non-linear specifications revealed that firm size and financial leverage have positive effect on financial performance with size having dominant effect. This contradicts results from selected firms' year by year cross-sectional regression analysis,

panel regression analysis and research on listed blue chip companies analyzed using random effect model which indicated a negative effect of firm size and financial leverage on financial performance of firms. The results based on Tobin's Q revealed a positive influence of firm size and financial leverage on financial performance of firms. There is no known information on the influence of financial leverage on the effect of firm size on financial performance in Sugar firms in Western Kenya.

The Kenyan sugar firms are concentrated in Western region of the county where 14 out of the 15 sugar companies are based. These sugar firms experience poor financial performance thereby posting an average of -24% average profit after tax, with occasional closure of some firms. For instance, Mumias Sugar Company was closed in February, 2015 but was later revived by the government. In May 2017 the company closed down shortly citing financial challenges but later resumed its operations after the government intervened. The company has remained unstable to date. Miwani Sugar Company went under receivership back in 2000.

These sugar firms are said to be highly leveraged and unable to meet their short term and long term financial obligations. Financial leverage is theoretically associated with financial benefits to a firm if applied to an optimal limit. However, when excessively applied beyond the optimal level, may lead to bankruptcy. Pandey, (2010).This information on how financial leverage level predicts financial performance lacks within the context of sugar firms in Western Kenya. Firm size equally has a bearing on a firm's financial performance as provided by the theory of economies of scale. From this theory, larger firms stand to perform better than their smaller counterparts financially. However, no known study has attempted to address the effect of firm size on financial performance of the sugar firms in Western Kenya. A firm's financial leverage level is dictated by its size. This makes financial leverage level a potential mediator in the firm size-financial performance relationship. Yet, no known study has attempted to establish the effect of firm size on financial leverage level of the sugar firms of western Kenya. There is also lack of information on the mediation effect of financial leverage level in the relationship between firm size and financial performance of the sugar firms in Western Kenya.

The focus of the previous research work among sugar firms has been on corporate governance and strategies, diversification and liberalization as possible predictors of financial performance of these firms. These previous studies have attributed the poor financial performance among firms to ineffective utilization and lack of modernization of the company's resources, poor labor compensation, corporate governance challenges and lack of diversification. The sugar firms researched on were in other countries but the few on Kenyan sugar firms had their shortcomings such as the use of retrospective research approach which is vulnerable to bias and the study population of only 3 sugar companies could probably not be a good representation of the total population of 15 sugar firms of uneven sizes in the country. A review of the previous Studies based on different industrial set-ups and geographical locations has revealed mixed findings comprising positive, negative and none existence of relationships between firm size and financial performance, firm size and financial leverage level, financial leverage level and financial performance. However, no study has addressed the mediation effect of financial leverage level on the relationship between firm size and financial performance of the various firms. These information gaps prompts the need to carry out this research to examine these relationships with reference to sugar firms in western Kenya.

1.2 Statement of the Problem

Sugar industry, an agricultural sub-sector contributes 15% of the agricultural GDP and 7.5% of the national GDP.14 out of the 15 sugar firms are located in the Western region of Kenya, of which 6 are government owned. These government owned sugar firms experience poor financial performance and occasional closures. For instance, during the period2007-2016, Kenyan sugar firms achieved -24% average profit after tax. Miwani Company has been under receivership since the year 2000, while Mumias Company ails. The government has previously negotiated COMES Aimport safeguard to create a conducive trade environment for the sugar industry. The latest extension of the import safeguard expires in February 2019 leaving sugar firms' existence at stake. The firms are of varied sizes and said to be highly leveraged financially. Financial leverage and economies of scale are theoretically said to boost a firm's financial performance due to the cost advantages associated with them. Available empirical literature on sugar firms focuses on the role of corporate governance strategies and production cost. However, there is no known study on the role of firm size and financial leverage level on the financial performance of sugar firms. Financial leverage level of a firm is guided by the size of the firm thereby qualifying financial leverage level as a possible mediator in the size-performance relationship. Research findings on the influence of financial leverage level on the relationship between firm size and financial performance based on varied firms from different industrial settings and countries lack consensus revealing the vibrancy of some factors in certain industrial sectors and geographical locations. While this information lacks in the context of sugar firms in Western Kenya. Therefore, the purpose of this study is to analyze the mediating role of financial leverage level on the relationship between firm size and financial performance of sugar firms in western Kenya.

1.3Objectives of the Study

The main objective of the proposed research is to establish the mediating role of financial leverage level on the relationship between firm size and financial performance of sugar firms in Western Kenya.

Specific Objectives

This study specifically seeks to:

i. Determine the effect of firm size on the financial performance of Sugar firms in Western Kenya.
ii. Establish the effect of firm size on financial leverage level in sugar firms in Western Kenya.
iii. Determine the influence of financial leverage level on financial performance of Sugar firms in Western Kenya.
iv. Analyze the influence of financial leverage level on the effect of firm size on financial performance of sugar firms in Western Kenya.

1.4 Research Hypotheses

The study will test the following hypotheses:-

$H0_1$: Firm size has no effect on the financial performance of sugar firms in Western Kenya.

$H0_2$:Firm size has no effect on financial leverage level in sugar firms in Western Kenya.

Ho_3:Financial leverage level has no influence on financial performance of sugar firms in Western Kenya.

$H0_4$:Financial leverage level has no influence on the relationship between Firm size and Financial performance of Sugar firms in Western Kenya.

1.5Justification of the Study

Agriculture is the backbone of Kenya's economy and sugar cane is one of the cash crops grown in the country, basically in the Western region of the country where the crop thrives best hence the concentration of the sugar firms in the region. The manufacturing sector in which sugar companies belong contribute 10.3% of the country's GDP, while sugar industry as a sub sector contributes 15% of the agricultural GDP. Sugar as a cash crop is grown worldwide and the financial performances of the firms involved vary greatly with some achieving overwhelming performance as others achieve penurious performance. Globally, Brazil tops with an average of 53% profit after tax while continentally, India leads with an average of 42% after tax profit. Regionally, South Africa tops with an average of 28% profit after tax. However locally, Kenya achieves an average of -24% after tax profit. This points out the need to analyze how the variables with theoretical relationship with financial performance such as firm size and financial

leverage relate in the in the context of Kenyan sugar firms to predict financial performance of these firms.

Previous empirical data attributes the poor financial performance to corporate governance challenges, over reliance on one source of revenue and ineffective utilization and lack of modernization of the company's resources and poor labor compensation, but little has been done to determine the relationship between firm size and financial performance, firm size and financial leverage, financial leverage and financial performance and the influence of financial leverage on the relationship between firm size and financial performance of the sugar firms in Western Kenya, an area this research intends to address. This information may be of use to policy makers as they formulate policies governing the use of financial leverage in sugar firms taking care of their different sizes to achieve good financial performance and to other researchers interested in similar areas in other firms and industries.

1.6 Scope of the Study

This study will be carried out in all the 14 sugar firms found in western region of Kenya, comprising of the three sugar belts; (Western sugar belt, South Nyanza sugar belt and Nyando sugar belt) for the period 2007-2016. Their panel data will be used to determine their sizes, financial leverage levels as presented in their capital structures and their annual financial performance with a view to establish: effect of firm size on financial performance, effect of firm size on financial leverage level, influence of financial leverage level on financial performance and the influence of financial leverage level on the relationship between firm size and financial performance of sugar firms in western Kenya. This is aimed at establishing the mediating role of financial leverage on the relationship between firm size and financial performance of sugar firms in western Kenya.

1.7Conceptual Framework

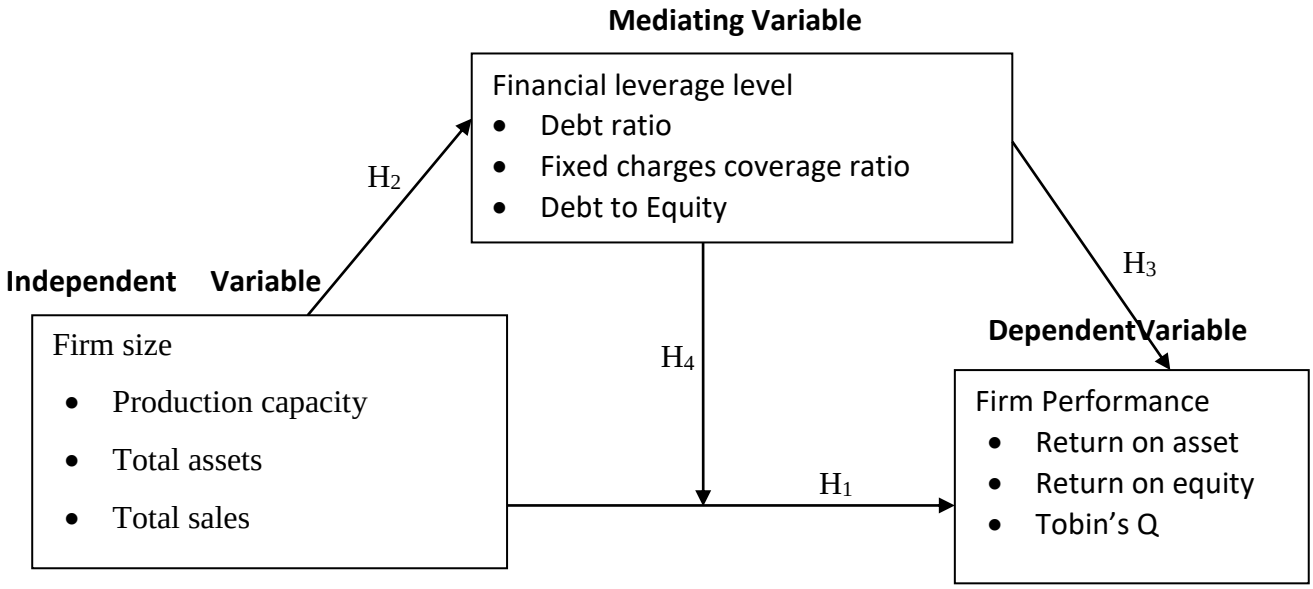

Figure 1.1 Mediating role of financial leverage level on the effect of firm size on financial performance

Source: Adapted from; Gan and Vernon (2003) Theory of Economies of scale, Kraus and Litzenberger (1973) Trade-off theory, Brigham (2010) Theory of financial performance

In this conceptual framework, firm size is the independent variable measured by production capacity, total assets and total sales. Financial Performance is the dependent variable measured using return on equity, return on asset and Tobin's Q. While financial leverage level is the mediator variable measured using debt ratio, debt to equity ratio and fixed charges coverage ratio. Path H_1 is the direct effect predicting the effect of firm size on financial performance as reflected on ROA, ROE and Tobin's Q. This is anchored on the theories of economies of scale and financial performance. Path H_2 predicts the effect of firm size on financial leverage level anchored on the theories of economies of scale and trade-off. Path H_3 predicts the effect of financial leverage level on financial performance as reflected on ROA, ROE and Tobin's Q, anchored on the trade-off theory and the theories of financial performance. H_4 predicts the influence of financial leverage level on the effect of firm size on financial performance. This path serves to establish the mediating effect of financial leverage on the effect of firm size on financial performance among sugar firms of Western Kenya.

2.0 LITERATURE REVIEW

This section will review the existing relevant literature on the study topic. The literature will be structured under the sub headings: the effect of firm size on financial performance, relationship between firm size and financial leverage level, relationship between financial leverage level and financial performance and influence of financial leverage level on the relationship between firm size and financial performance. These will be looked at from theoretical and empirical perspectives, summaries and research gaps will also be highlighted.

2.1 Theoretical Review.

The literature in the theoretical review will further be arranged in sub themes as guided by the concepts of study.

2.1.1The Theory of Economies of Scale by Gan and Vernon (2003)

This theory postulates that large firms enjoy cost advantages due to their scale of operation with cost per unit of output generally decreasing with increasing scale as fixed costs are spread out over more units of output. Economies of scale arise from discounts given due to large quantity buying as well as due to specialization and division of labor. Bigger firms have a head start over smaller firms in fields requiring competition hence have the opportunity to profit more. They are able to seize the opportunity to work in the fields which require huge capital outlays since they presumably have larger resources as compared to their smaller counterparts.This theory proposes positive relationship between firm size and financial performance as reflected by ROA, ROE and Tobin's Q. The theory will guide the study in establishing the effect of firm size on financial performance of sugar firms in Western Kenya by observing the behaviour of the performance measure when the size variables are increased and decreased in the regression.

2.1.2The Trade-off Theory by Kraus and Litzenberger (1973)

This theory states that a firm trades-off the benefits and costs of debt and equity financing and finds an optimal capital structure after accounting for market imperfections such as taxes, bankruptcy and agency costs. According to this theory, debt capital is associated with some financial benefits which helps improve the value of the firm and firms go for debt capital until they exploit all the benefits, a point referred to as the optimal capital

structure beyond which the firm would be faced with losses. This probably explains why debt is referred to as a double edged sword with the potentials of improving and destroying the value of the firm. Pandey, (2004) states that firms use debt financing together with owners' equity with the intention of earning more return on the fixed charge funds than their cost as well as improve a firm's performance by increasing its earnings per share (EPS), its return on equity (ROE), return on asset (ROA) and overall profit margin.This theory predicts a positive relationship between financial leverage and financial performance if debt is optimally used. The theory will guide the study in determining the relationship between financial leverage level and financial performance in sugar firms in Western Kenya by observing the behaviour of ROA and ROE and Tobin's Q given different levels of financial leverage incorporated in the firm's capital structure.

2.1.3 The theory of Financial Performance

According to Brigham (2010), financial performance is measured using ration such as Return on asset (ROA), Return on equity (ROE) and Tobin's Q. A firm's ROA reflects a firm's basic earning power resulting from efficient asset utilization as well as effect of interest cost resulting from its use of debt. High ROA results from high basic earning power and low interest costs due to average use of debt making its net income to be high while the converse holds true. This ratio will guide the study in establishing how well these sugar firms utilize their assets and whether these firms optimally use debt capital so as to reap from the benefits associated with it as will be portrayed by the behavior of ROA of the firms.

According to Brigham (2010) ROE above industry average is an indication of a company's greater use of debt. This theory acknowledges the benefits associated with debt financing hence in tandem with the trade-off theory by Kraus and Litzenberger (1973). This theory implies positive relationship between financial leverage and financial performance but within the optimal limits above which it becomes disastrous. This theory will guide the study in investigating the influence of financial leverage on the relationship between firm size and financial performance by looking at the behavior of ROE of the firms given their varied sizes when financial leverage is introduced as a variable after observing the relationship between firm size and financial performance.

Sugar firms across the world register diverse financial performances ranging from overwhelming to penurious financial achievements. Global financial performance of sugar firms has Brazil leading with an average of 53% profit after tax, while continentally, India tops with 42% profit after tax. Regionally, South Africa achieves an average of 28% profit after tax. However locally, Kenya achieves an average of -24% profit after tax. Report by the Kenya National Assembly, eleventh parliament (2015) indicates that Sugar industry contributes 15 % of agricultural GDP and 7.5 %of the country's GDP and has a major impact on the economies of Western Kenya region. Kenyan Sugar firms are concentrated in the western region of Kenya, and a source of livelihood to over two million people. These sugar firms have been experiencing poor financial performance over the years and are said to be debt laden. Miwani sugar factory has been under receivership since 2000, Mumias the biggest sugar firm in Kenya closed down in March 2015, though later bailed out by the government.

Most of these sugar firms are not able to pay their cane suppliers in time and fairly a situation which has seen a section of cane farmers resort to growing alternative crops such as maize. Report from the World Bank indicates that the Kenya sugar industry remains under global and regional threat. This creates the need to establish the relationships that exist between the variables that have direct effect on financial performance of a firm such as firm size and financial leverage. The focus of the study will therefore be to; determine the effect of firm size on financial performance, establish the relationship between firm size and financial leverage level, determine the relationship between financial leverage level and financial performance and analyze influence of financial leverage level on the relationship between firm size and financial performance. This will aid in establishing the mediating role of financial leverage level on the relationship between firm size and financial performance of sugar firms in western Kenya.

2.2 Empirical Review

2.2.1 Effect of Firm Size on Financial Performance of Sugar Firms in Western Kenya

Researchers have attempted to look at the relationship between firm size and financial performance in various industrial contexts and below are some of their findings.

Yoon and Jang (2005) conducted a study on the relationship between return on equity, financial leverage and size of 62 restaurant firms in US for the period 1998 to 2003. They used ordinary least square (OLS) regressions model. Their results show that highly leveraged firms were less risky in both market and accounting based performance measures. The results also indicate positive relationship between financial leverage and performance indicators(return on asset and return on equity).Their findings further indicate that firm size had a more dominant effect on ROE than debt and regardless of the level of leverage; smaller firms were relatively more risky than larger firms, hence a positive relationship between size and financial leverage.

Amato and Burson (2007) empirically tested size-profitability relationship for firms operating in the US financial services sector. They examined both linear and cubic form of relationship. With the linear specification in firm size, their findings revealed negative influence on profitability, though not statistically significant. On the other hand they found evidence of a cubic relationship between return on asset and size. Lee, (2009) examined the role played by firm size on profitability of firms. He used fixed effect dynamic panel data model and performed analysis on a sample of more than 7000 US publicly held firms for the period 1987-2006. His results indicated that absolute firm size plays an important role in explaining profitability. However, this relationship was non-linear, meaning that gains in profitability reduced for larger firms.

Papadognas, (2007) conducted a research on a sample of 3035 Greek manufacturing firms for the period 1995-1999. In his study, he divided firms into four size classes and applied regression analysis. His results revealed that for all size classes, profitability is positively influenced by firm size. Ching and Gerab, (2012) studied the determinants of financial performance in Brazilian companies. They used multi-ratio model applying multivariate statistical method. They used a sample of 16 companies with current assets greater than 50% of total assets for the period 2005-2009. Their findings revealed that firm size has

positive effect on financial performance of the companies. Amar *et al*, (2003) examined the nature of size-profitability relationship on a sample of Indian electrical contractors for a period of 1985-1996. They used first order auto regression model built into the error term. Their findings revealed a significant difference in terms of profitability between small, medium and large firms. Their findings revealed that profitability drops as firms grow larger than $50million in sales. Malik, (2011) investigated the determinants of profitability in insurance companies of Pakistan. He specifically examined the effects of firm specific factors such as age of company, size of company, volume of capital, leverage ratio and loss ratio on profitability. He applied multiple regression models to identify the relationship between profitability and determinants. The study used a sample of 35 listed life and non-life insurance companies covering the period 2005 to 2009.His findings revealed that there was no relationship between profitability and age of the company, but there was a positive association between size and profitability.

Niresh and Velnampy, (2014) explored the effects of firm size on profitability of quoted manufacturing firms in Sri Lanka using a data of 15 companies active in the Colombo Stock Exchange between 2008 to 2012. He used return on asset and net profit as indicators of profitability, while total sales and total assets were used as indicators of firm size. He used regression model and correlation in the empirical analysis. Their findings revealed that firm size has no relationship with profitability of the listed firms in Sri Lanka. Pervan and Josipa, (2012) studied the influence of firm size on its profitability using data from Croatian manufacturing industry from 2002-2010. Both linear and non-linear specifications were tested and the results showed that firm size has a significant positive influence on firm profitability. The results further revealed that asset turnover and debt ratio have statistically significant influence on firm performance.

Demirgunes and Ucler, (2015) investigated the inter-relationship between Profitability, Growth and Size of firms using Turkish manufacturing industry consisting of Borsa Istanbul listed manufacturing firms covering 1991-2014. To test the stationarity of series and the co-integration relationship between them, unit root test of Carrion-i-Silvestre *et al*, (2009) and co-integration test of Maki, (2012) were used respectively. Their result indicated negative relationship between profitability and firm size. The causality test results indicate the existence of one-way causality from size to profitability.

Vijayakumar and Tamizhselvan, (2010) carried out an empirical analysis of corporate size and profitability in South India. Their study was based on a simple semi-logarithmic specification of the model. They used total assets and sales as proxies for firm size and profit margin and profit on total assets as indicators of performance while using a sample of 15 companies operating in South India. Their findings indicated a positive relationship between firm size and profitability. Babalola and Abiodun, (2013) studied the effects of firm size on firm profitability in Nigeria using secondary data obtained from sampled firms. They used panel data set over the period 2000-2009.They measured profitability using Return on asset, while both total assets and total sales were used as proxies of firm size, used regression model in their study. Their research results revealed that firm sizes, both in terms of total assets and total sales have positive impact on the profitability of manufacturing companies in Nigeria.

Kipkoech and Kigen (2014) studied the effects of firm size on profitability of insurance companies in Kenya using cross-sectional data and time series data for the period 2009 to 2013. They obtained data from annual report of insurance companies. They used regression model to establish the relationship. Their results indicated that there is a strong positive relationship between profitability and firm size as measured by market share of both general and long term insurance companies in Kenya. Kaguri, (2012) carried out a study on the relationship between firm characteristics and financial performance of life insurance companies in Kenya. He used a data of 17 life insurance companies in Kenya for the period 2008-2012. He used Return on asset as a dependent variable whereas size, diversification, leverage, liquidity, age, premium growth and claim experience were used as independent variables. His regression result revealed that there is a positive relationship between size and profitability of an insurance company.

Mehrjardi, (2012) studied the relationship between firm size and profitability of banks in Kenya using a data of 43 licensed banks in Kenya for the period 2008-2010. He applied regression model in the panel data. Return on asset was used as proxy for profitability, whereas customer base number of branches, deposit liabilities and market share were used as the independent variables. The study revealed that there is a strong positive relationship between profitability of banks and customer base, number of branches, deposit liabilities and market share. Mule *et al*, (2015) studied the effect of corporate size

on profitability and market value of listed firms in Kenya. They used data for companies which were active in NSE between 2010 to 2014.Unit root test results indicate that all the variables are integrated of order zero (p=0.000) meaning that they were stationary at levels. They used panel correlation and multiple regression methods. Their results indicate a positive relationship between firm size and profitability.

The studies show that; Yoon and Jang (2005), Papadognas (2007), Ching and Gerab (2012), Malik (2011), Vijayakumar and Tamizhselvan (2010), Babalola and Abiodun (2013), Kipkoech and Kigen (2013), Kaguri (2012), Mehrjardi (2012) and Mule *et al*(2015) investigated the effect of firm size on financial performance while applying ordinary least square regressions, multi ratio model and multivariate statistical method, multiple regression model and obtained positive effect of firm size on financial performance of firms. Whereas, Amato and Burson (2007), Lee (2009), Dermigunes and Ucler (2015) and Amar (2003) investigated linear and cubic forms of relationships using fixed effect dynamic panel data model, using unit root test and co-integration test to check on the stationarity of the series and obtained negative relationship between firm size and financial performance. However, Niresh and Velnampy (2014) applied regression model and correlation analysis but found no relationship between firm size and financial performance.

Studies on restaurant firms using ordinary least square regression model, manufacturing firms using regression analysis, sampled companies using multi-ratio model and multivariate statistical method, manufacturing industry using linear and non-linear specifications, life and non-life insurance companies using a simple semi-logarithmic specification of the model, secondary data obtained from sampled firms, insurance companies using regression analysis, licensed banks using cross-sectional data and time series data and using panel correlation and multiple regression methods revealed positive relationship between firm size and financial performance and hence in tandem with the theory of economies of scale.

On the contrary results from financial services sector, examining both linear and cubic forms of relationships, publicly held firms using fixed effect dynamic panel data model revealed negative relationship between firm size and financial performance after

employing the different analysis methods thereby contradicting the theory of economies of scale. However, a study on quoted manufacturing firms using regression model and correlation analysis revealed no relationship between firm size and financial performance. The diversity of the results makes it difficult to make a conclusion as to whether sugar firms draw from economies of scale as proposed by the previous theories. There is also lack of information on effect of firm size on financial performance of sugar firms in western Kenya since the focus of these previous research was on other firms and not sugar firms.

2.2.2 Effect of Firm Size on Financial Leverage level in Sugar Firms in Western Kenya

Review of previous studies done on the relationship between firm size and financial leverage level of firms have the following results; Laurente (2002) studied the relationship between financial leverage and corporate financial performance in European countries which included France, Germany and Italy. He used multiple regression technique on the study variables which included financial leverage, asset tangibility, short term liabilities, inventory and firm size. He found mixed results from different countries. His findings revealed negative relationship in Italy but significantly positive relationships between leverage and performance in France and Germany across firms of different sizes.

Vithessonthi and Tongurai (2014) studied the effects of firm size on the leverage level-financial performance relationship during the world financial crisis of 2007-2009. The study was carried out in Thailand using a data of 496,430 firm year observations of a sample of 170,013. Their findings revealed that the magnitude of the effect of leverage on financial performance is non-monotonic and conditional on firm size. Their panel regression results indicate that leverage has a negative effect on financial performance across firm size sub-samples. Their year by year cross-sectional regression results show that the effect of leverage on financial performance is positive for small firms and is negative for large firms.

Baloch *et al* (2015) studied the impact of firm size, Asset Tangibility and Retained Earnings on financial leverage in Pakistan. They used auto sector as case consisting of sub-sectors namely; motor vehicles, trailers and parts. They collected data pertaining to

22 firms from the financial statement analysis document issued by the state bank of Pakistan. They used multiple regression models to determine the relationship between the underlying variables. Their result indicated that firm size and asset tangibility significantly affect the financial leverage negatively. Ezeoha (2015) investigated the nature and significance of firm size as a determinant of corporate financial leverage level from an underdeveloped market perspective. He used a panel data fixed effects regression model to estimate the relationship between financial leverage and firm size while controlling for the effects of other acclaimed determinants like asset tangibility, profitability and firm age. He used a data set covering 71 firms quoted in the Nigerian stock market over 17 year period (1990-2006). His findings revealed that firm size is negatively and significantly related to financial leverage.

Marete (2015), carried out a study on the relationship between firm size and financial leverage level of the 64 companies listed at the Nairobi Securities exchange for the period 2010-2014. She used regression analysis and Pearson's product correlation analysis and established a positive relationship between firm size and financial leverage. Kale (2014) in his study of non-financial blue chip companies listed at the Nairobi securities exchange in Kenya analyzed data using random effect model and found a negative relationship between small firms and financial leverage and a positive relationship between large firms and financial leverage.

It can be deduced from the studies above that; Marete (2015) and Kale (2014) used regression analysis and Pearson's product correlation analysis and random effect model and obtained positive relationship between firm size and financial leverage level, while Vithessonthi and Tongurai (2014), Baloch *et al* (2015) and Ezeoha (2015) used multiple regression technique, panel data regression model, cross sectional regression, year by year regression and panel data fixed effect regression model and found a negative relationship between firm size and financial leverage level. However, Laurente (2002) used multiple regression technique on the study variables which included financial leverage, asset tangibility and firm size and came up with mixed results with positive results in France and Germany but a negative result in Italy.

The above research results lack cohesion given that studies using listed non-financial blue chip companies and on listed companies revealed positive relationship between firm size and financial leverage, whereas research carried out using a data of sampled firms' yearly observations analyzed using panel regression and year by year cross-sectional regression, on auto sector consisting of sub-sectors as motor vehicle, trailers and parts using multiple regression model, on data set of quoted firms using panel data fixed effect regression model and results revealed negative relationships. The negative results support the pecking order theory since the results demonstrates that the level of financial leverage reduces with the increase in firm size since these firms tend to have other alternative funding for their investment from their retained profits. However, findings from the European countries emitted varied results across the geographical distributions using similar methodology and sample characteristics where both positive and negative relationships were obtained. The discrepancy in the findings makes it difficult to draw a conclusion on the effect of firm size on financial leverage. Moreover no study has been done on effect of firm size on financial leverage among sugar firms in Western Kenya.

2.2.3Effect of Financial Leverage level on Financial Performance of Sugar Firms in Western Kenya

There has been increased interest among researchers attempting to investigate how financial leverage level relates with financial performance and the following are the findings. Laurente (2002) investigated the relationship between financial leverage level and corporate financial performance of medium sized firms in European countries using maximum likelihood procedure to estimate a stochastic cost inefficiency to leverage simultaneously and multiple regression technique on the study variables which included financial leverage, asset tangibility, short term liabilities, inventory, firm size and corporate financial performance. His findings revealed negative relationship in Italy but significantly positive relationships between leverage and performance in France and Germany.

Berger and Bonaccorsi (2006) tested the agency theory of capital structure on the United States banking industry using parametric measures of profit efficiency as indicator to measure the agency cost, they used annual information for 695 United States commercial banks for the period 1990-1995. They found that higher leverage is associated with better

financial performance. Tian and Zeitun (2007) investigated the effects of capital structure on corporate performance of corporations in Jordan using a panel data approach of 167 companies for the period 1989-2003. Their study used accounting ratios as ROA, ROE, EBIT and tax plus depreciation to total assets as proxies of financial performance measurements and Tobin's Q, market value of equity, price/earnings ratio and market value of equity plus book value of liabilities divided by book value of equity as market performance measures. Their findings reveal that a firm's capital structure has significant negative effect on the firm's performance using both accounting and market measurements. The study also reveals that short term debt to total assets as a measure of leverage has a significantly positive effect on the market performance as measured by Tobin's Q. Akhtar, Jared, Maryam and Saidia (2012) investigated the relationship between financial leverage and financial performance using the Fuel and Energy sector of Pakistan while applying regression analysis. Their findings showed a positive relationship between financial leverage and firm performance of companies. They recommended that players of fuel and energy in Pakistan can improve the financial performance by employing financial leverage.

Al-Taani (2013) investigated the relationship between capital structure and firm's financial performance across 45 Jordanian manufacturing companies listed on Amman Stock Exchange for a period of 5 years from 2005-2009. His study variables included; ROA and Profit Margin as the dependent variables taken as proxies for financial performance, and short term debt to total assets, long term debt to total assets and total debt to equity comprised the independent variables and were taken as proxies for capital structure. He used multiple regression analysis to establish the relationships. His results show that there is no significant relationship between short term debt to total asset and return on asset and between total debt and return on asset, short-term debt and profit margin. There is also no relationship between total debt to equity and profit margin. However, the results revealed significant negative relationship between long term debt to total asset and return on asset.

Rehman (2013) investigated the relationship between financial leverage and financial performance of 35 listed sugar companies in Pakistan for a period of 6 years from 2006 - 2011. He used correlation technique to investigate the association between financial

leverage as the independent variable represented by debt-equity ratio and financial performance represented by EPS, NPM, ROA, ROE and sales growth as the dependent variables. His results reveal that financial leverage has a positive relationship with ROA and sales growth, but a negative relationship with EPS, NPM and ROE.

Ebeid (2009) carried out a study to investigate the impact of choice of capital structure on the financial performance of firms in Egypt. He used ROE, ROA and gross profit margin as proxies for performance, while financial leverage was measured using short tern me debt to asset ratio, long term debt to asset ratio and total debt to total asset ratio. He used multiple regression technique to determine the relationship between financial leverage and performance. His results revealed that leverage has no impact on a firm's financial performance. Onalapo and Kajola (2010) investigated the effect of capital structure on financial performance of companies listed on the Nigerian Stock Exchange. The study was performed using 30 non-financial companies in 15 Industry sectors in a 7 year period from 2001 to 2007 using regression analysis and correlation analysis. Their findings showed that financial leverage has a significant negative effect on financial performance as observed in the return on asset and return on equity of the sampled firms.

David and Olorunfemi (2010) studied the impact of capital structure on corporate performance of firms in the Nigerian petroleum Industry for the period 1999-2005. They employed panel data analysis using fixed-effect estimation, random effect estimation and maximum likelihood estimation. The study found that there is a positive relationship between financial leverage and financial performance reflected on earnings per share and dividend per share. Abubakar (2015) investigated the relationship between financial leverage and performance of depository banks in Nigeria using 11 deposit money banks for the period 2005-2013. He used correlation analysis to investigate the relationship, and his findings revealed that there is significant relationship between debt-equity ratio and financial performance proxy by return on equity. He however, came up with no significant relationship between debt ratio and financial performance surrogated by return on equity. The study recommends that an appropriate debt-equity mix should be adopted by banks if they must improve their financial performance, survival and remain competitive.

Maina and Kodongo (2013) examined the effects of debt-equity ratio on financial performance of firms. They investigated firms listed at the Nairobi Securities Exchange (NSE) for the period 2002-2011 using regression analysis and correlation analysis. Their study findings revealed that firms listed at the NSE rely more on short term debt. They also found out that there exists a significant negative relationship between debt-equity ratio and all measures of financial performance. Mwangi, Makau and Kosimbi (2014) investigated the relationship between capital structure and performance of 42 non-financial companies listed in the Nairobi Securities Exchange-Kenya, using secondary panel data contained in the annual reports and financial statements of the sampled listed firms. They employed panel data models and feasible generalized least squares (FGLS). Their findings show that financial leverage is statistically negatively related to performance measured by return on assets and return on equity. Marko (2014) examined the influence of capital structure on organizational financial performance of firms listed in Nairobi Securities Exchange. He used secondary data from financial statements of sampled listed firms which were selected using stratified random sampling technique. He used multiple regression technique to explain the relationship between financial leverage, cost of equity, debt interest and organization financial performance. His findings revealed that there exists a positive relationship between financial leverage, and financial performance.

Harwood *et al* (2015) studied the effect of long term loan on financial performance using selected sugar manufacturing firms in Kenya. Retrospective research design was used in collecting data on a target population of 9 sugar firms. A sample of 3 firms was used in the study computed based on Mugenda and Mugenda (2003) 10-30 percent rule and simple random sampling was used in the collection of data from the sample. The data was analyzed using simple linear regression model to identify significant predictors of ROA while controlling for the confounders, Pearson's product moment correlation coefficient was used to assess for significant relationship between the dependent variable (ROA) and independent variable, long term debt. The results established a significant negative relationship between long term debt and financial performance as reflected by ROA. He observed that state owned sugar firms are highly indebted.

Kale, (2014) investigated the impact of financial leverage on firm performance using the non-financial blue chip companies listed under the NSE 20 share index in Kenya. He measured performance using ROA, ROE and Tobin's Q. The study expanded its explanatory variables by controlling for liquidity, firm size and firm age. He analyzed data from the three models using random effect model. The results revealed that there is a significant negative relationship between financial leverage and return on assets. That profitable firms use pecking order theory in their financing. The findings from the Tobin's Q model indicate that large firms have a positive insignificant relationship between financial leverage and firm performance.

What emanates from the empirical studies above is that; Berger and Bonaccorsi (2006), Marko (2014), David and Olorunfemi (2010), Rehman (2013), Saidia *et al* (2012) and Akhtar *et al*(2012) applied multiple regression analysis technique, fixed effect, random effect and maximum likelihood estimation procedures and correlation analysis and obtained positive relationship between financial leverage and financial performance. Whereas, Mwangi et al (2014), Maina and Kodongo (2013), Onalapo and Kajola (2010), Harwood and Cheruiyot (2015), Altaani (2013), Tian and Zeitun (2007) applied panel data models and feasible generalized least squares, regression analysis, simple linear regression analysis on a sample of 3 sugar firms out of a target population of 9 sugar firms based on retrogressive research design and Pearson's Product moment correlation and obtained negative relationship between financial leverage and financial performance. On the contrary, Ebeid (2009) and Abubakar (2015) applied multiple regression analysis and correlation analysis but found no relationship between financial leverage and financial performance. However, Laurente (2002), applied found mixed results across the geographical location of the firms with positive in some locations and negative in others. Kale (2014), using random effect models found negative relationship between financial leverage and financial performance as reflected by ROA, but using Tobin's Q, positive relationship was obtained.

Evidence from the empirical studies reveal a diversity of findings from different countries and industries whereby; In banking industry using annual information of commercial banks and applying parametric measures of profit efficiency as indicator to measure agency cost, using fuel industry applying regression analysis, using petroleum industry

employing panel data analysis using fixed-effect estimation, random effect estimation and maximum likelihood estimation, and on secondary data from financial statements of the sampled listed firms which were selected using stratified random sampling technique applying multiple regression technique, using sugar firms while applying correlation analysis, results revealed positive relationship as reflected by ROA. Whereas, using listed manufacturing companies applying multiple regression analysis, on listed textile firms using regression and correlation analysis, on non-financial companies in different industry sectors and the results were negative as reflected by ROA & ROE. Research on 9 sugar firms using a sample of 3 firms selected using retrospective research strategy and analyzed using multiple linear regression models and Pearson's product moment correlation and findings were negative contradicting the previous results. The research done on sugar firms was retrospective hence prone to a lot of bias and the 3 firms used may not give the overall picture of leverage performance relationship in sugar firms. This creates a dilemma on what effect financial leverage has on financial performance of sugar firms in Western Kenya.

2.2.4 Effect of Financial Leverage level on the relationship between Firm Size and Financial Performance of Sugar Firms in Western Kenya.

Yoon and Jang (2005) conducted a study on the relationship between return on equity, financial leverage and size of 62 restaurant firms in US for the period 1998 to 2003 using ordinary least square (OLS) regressions. Their results show that highly leveraged firms were less risky in both market and accounting based performance measures. The results also indicate positive relationship between financial leverage performance indicators(ROA and ROE).Their findings further indicate that firm size had a more dominant effect on ROE than debt and regardless of the level of leverage; smaller firms were relatively more risky than larger firms. Laurente (2002) studied the relationship between leverage and corporate performance in France, Germany and Italy. He used multiple regression technique on the study variables which included financial leverage, asset tangibility, short term liabilities, inventory and firm size. He found mixed results from different countries. His findings revealed negative relationship in Italy but significantly positive relationships between leverage and performance in France and Germany.

Vithessonthi and Tongurai (2014) studied the effects of firm size on the leverage-performance relationship during the world financial crisis of 2007-2009. The study was carried out in Thailand using a data of 496,430 firm year observations of a sample of 170,013. Their findings revealed that the magnitude of the effect of leverage on operating performance is non-monotonic and conditional on firm size. Their panel regression results indicate that leverage has a negative effect on financial performance across firm size sub-samples. Their year by year cross-sectional regression results show that the effect of leverage on financial performance is positive for small firms and is negative for large firms.

Pervan and Josipa (2012) studied the influence of firm size on its profitability using data from Croatian manufacturing industry from 2002-2010. Both linear and non-linear specifications were tested and the results showed that firm size has a significant influence on firm profitability. The results further revealed that asset turnover and debt ratio have statistically significant positive influence on financial performance. Umar *et al* (2014) investigated the moderating role of firm strategy in the relationship between financial leverage and financial performance using a data of 125 Pakistan textile firms listed at the Karachi Stock Exchange for the period of 2006-2011, while applying regression analysis and correlation analysis. Results revealed that both short term and long term debt borrowings are negatively associated with profitability.

Kale (2014) investigated the impact of financial leverage on financial performance using the non-financial blue chip companies listed under the NSE 20 share index in Kenya. He measured performance using ROA, ROE and Tobin's Q. The study expanded its explanatory variables by controlling for liquidity, firm size and firm age. He analyzed data from the three models using random effect model. The results revealed that there is a significant negative relationship between financial leverage and return on assets. The findings from the Tobin's Q model indicate that large firms have a positive insignificant relationship between financial leverage and financial performance.

The findings of the literature reviewed portray some conflicts given the diversified results. Yoon and Jang (2005), Pervan and Josipa (2012) used ordinary least square regression, multiple regression analysis and Tobin's Q and found positive relationships.

Whereas, Vithessonthi and Tongurai (2014),Umar *et al* (2014) used panel regressions and year –by-year cross-sectional regression, and correlation analysis and obtained negative relationships. However, Laurente (2002) used multiple regression analysis and obtained varied results across different countries.

Evidence from the literature reveal conflicting results since; Study done using restaurant firms using ordinary least square regressions found firm size to have more effect on ROE as a measure of performance than debt regardless of the level of leverage. They also found financial leverage to have negative effect on smaller firms but positive on larger firms, where results from year by year cross-sectional regression result indicated that financial leverage had positive effect on smaller firms but negative on larger firms though their panel regression results indicate that financial leverage has negative effect on performance across all firm sub-samples. Research findings in different European countries using multiple regressions revealed negative effects in some countries but positive relationship in others. This implies that the geographical location of the firm may contribute to the diverse results. While research on listed non-financial blue chip companies where data was analyzed using random effect model and Tobin's Q, results from random effect model revealed negative relationship between financial leverage and performance as reflected by ROA, but results from Tobin's Q model indicate that large firms have positive influence on leverage-performance relationship. However, there is lacking information regarding effect of financial leverage on the relationship between firm size and financial performance of sugar firms in Western Kenya.

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This section describes the research procedures and techniques that will be used in the intended study. It highlights a description of the research design, model specification, study area, target population, sample size and sampling design, data collection and analysis techniques together with data presentation.

3.2Research Design

The study will adopt the useof correlational research design on a panel data of the 14 sugar firms of different sizes found in western region of Kenya for the period 2007-2016. The design is appropriate as it allows establishing as many relationships between the variables of the study. Panneer (2007). This will be done by examining how the three concept variables; firm size, financial leverage and financial performance relate with each other guided by the objectives of the study**.**

3.3 Study Area

The study will be carried out in Western region of Kenya. With reference to geographical location, western Kenya lies between latitudes 0^0,34^0 North and longitudes $30^{0,}$ 35^0East. The study covers three major sugar belts; western sugar belt, Nyando sugar belt and South Nyanza sugar belt where all the sugar companies found within these sugar belts will be incorporated in the study.

3.4Target Population

The study targets 14 sugar firms of various sizes located in western Kenya. These will be assessed for the period 2007-2016 yielding a panel of 140 data points. Given that most of the sugar firms are concentrated within western region of Kenya; Saturation method will be applied to sample the sugar firms for the study.

3.5 Sampling Technique

The study will use saturation sampling technique. This sampling method is appropriate as it reduces repetitive and superfluous data, Ritchie *et al* (2003). Saturation sampling is also relevant in this study given the heterogeneity of the Kenyan sugar firms' study variables and the panel data purported to be used, Crouch (2002).

3.6Data Type

The study will use secondary panel data which will be obtained from annual financial reports of the sugar firms from January 2007 to December 2016. The secondary panel data from the financial reports will be used given that it is an audited statutory document which meets the GAAP requirements and produced annually by all the firms. This makes it a credible data to use.

3.7 Data Collection Technique

The secondary panel data will be obtained from the financial statements of the sugar firms available at the various sugar firms, Kenya sugar board and published report in the media. The collected data will be recorded in the collection sheet appended in (Appendix II).

3.8Data Analysis

The panel data of the sugar firms will be analyzed by use of panel multiple regressions to determine the effect of firm size on financial performance, establish the effect of firm size on financial leverage level, financial leverage level on financial performance, and the influence of financial leverage level on the relationship between firm size and financial performance.

3.9.1 Data Presentation Technique

Data summary will be done using the computer package SPSS for ease of analysis, interpretation and processing. The information obtained will be presented in form of frequency tables, charts and graphs.

3.9.2Model Specification

The study will use simple regression models for first three objectives and a multiple regression model for the fourth objective due to its multiple variables. These models are as follows:

(i) $ROA_{it} = \beta_0 + \beta_1 Firmsize_{it} + \epsilon_{it}$

$ROE_{it} = \beta_0 + \beta_1 Firmsize_{it} + \epsilon_{it}$

$Tobin's\ Q_{it} = \beta_0 + \beta_1 Firmsize_{it} + \epsilon_{it}$

Where;
Return on Asset =Earnings before Interest Depreciation, Tax and Amortization
Total Assets

Return on Equity =Profit after tax
Net Worth

Tobin's Q = Market value of Assets
Replacement cost of Assets

Where *i* represents the number of sugar firms studied (14), *t* represents the time period (10years), *it* represents the data points of the study (140) β_0 and $\beta_1$are constants, whileϵ represent the error term. The error term accounts for the omitted variables which affect financial performance, the non-linearity in the relationship between firm size and financial performance, measurement errors and other unpredicted effects of firm size on financial performance.

The equations will be used to determine the effect of firm size on the financial performance of sugar firms in Western Kenya.

(ii) $Financial\ leverage\ level_{it} = \beta_0 + \beta_1 Firmsize_{it} + \epsilon_{it}$

Where, *i* represents the number of sugar firms studied (14), *t* represents the time period (10years), *it* represents the data points of the study (140)β_0 and $\beta_1$are constants, whileϵ represents the error term.The error term accounts for the omitted variables which affect financial leverage other than firm size, the non-linearity in the relationship between firm size and financial leverage, measurement errors and other unpredicted effects of firm size on financial leverage.

Financial leverage level will be measured in terms of; Debt ratio = Total Debt
Capital Employed

Debt-Equity ratio = Total Debt
Net Worth

Fixed Charges Coverage ratio=Earnings Before Interest, Tax, Depreciation and Amortization
Interest +Loan repayment
1- Tax rate

The equation will aid establishing the relationship between firm size and financial leverage in sugar firms in Western Kenya.

(iii) $ROA_{it} = \beta_0 + \beta_1 Financialleverage\ level_{it+}\epsilon_{it}$

$ROE_{it} = \beta_0 + \beta_1 Financialleverage\ level_{it} + \epsilon_{it}$

$Tobin's\ Q_{it} = \beta_0 + \beta_1 Financialleverage\ level_{it} + \epsilon_{it}$

Where, *i* represents the number of sugar firms studied (14), *t* represents the time period (10yrs), *it* represents the data points of the study (140)β_0 and $\beta_1$are constants, whileϵ represents the error term which accounts for the omitted variables which affect financial performance other than financial leverage level, the non-linearity of the relationship between financial leverage level and financial performance, measurement errors and other unpredicted effects of financial leverage level on financial performance.

The equations will aid the study in determining the relationship between financial leverage level and financial performance of sugar firms in Western Kenya.

(iv)$ROA_{it} = \beta_0 + \beta_1 Firmsize_{it} + \beta_2 Financialleverage\ level_{it} + \epsilon_{it}$

$ROE_{it} = \beta_0 + \beta_1 Firmsize_{it} + \beta_2 Financialleverage\ level_{it} + \epsilon_{it}$

$Tobin's\ Q_{it} = \beta_0 + \beta_1 Firmsize_{it} + \beta_2 Financialleverage\ level_{it} + \epsilon_{it}$

Where, *i* represents the number of sugar firms(14),*t* represents the time period(10years), *it* represents the data points of the study(140)β_0, $\beta_1$and$\beta_2$are constants, whileϵ represents the error term which accounts for the omitted variables which mediate in the relationship between firm size and financial performance, the non-linearity in these relationships, measurement errors and other unpredicted effects of financial leverage level on the relationship between firm size and financial performance.

The equations will help establish the mediating role of financial leverage level on the relationship between firm size and financial performance of sugar firms in Western Kenya.

3.9.3 Data quality enhancement measures

The data will be subjected to unit root test to check on stationarity to curb spurious regression results. This will be done using Elliott-Rothenberg-stock test, which applies the P-test, Shahrin(2015).The data collection form and interview sheet will be subjected

to validity test to establish if it conforms to content and construct validity and able to emit the desired results. Mohaffzza *et al* (2015).

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PROPOSAL BUDGET

OCTOBER 2015 – OCTOBER 2016

Activity	**Duration**	**Wage rate per day**	**Total**
Research	60 days	500.00	30,000.00
Research assistant	(1) 30days	300 .00	9,000.00
Research assistant	(2) 30days	300.00	9,000.00
Equipment			
Laptop			45,000.00
Travelling Allowance			
Researcher	24 days	1,000.00	24,000.00
Research assistant	(1)8 days	1,000.00	8,000.00
Research assistant	(2) 8 days	1,000.00	8,000.00
Typing & Questionnaire preparation			5,000.00
Grand Total			**138,000.00**

TIME FRAME

Work Plan	
Proposal preparation	October, 2014 – November, 2016
Conducting research	December, 2016-January, 2017
Data analysis	February,2017-March, 2017
Thesis writing	
First draft	April, 2017-May, 2017
Second draft	June, 2017-July, 2017
Final draft	August, 2017- September, 2017

APPENDICES

Appendix I: List of sugar firms in Kenya

1. Mumias sugar company
2. Chemelil sugar company
3. Nzoia sugar company
4. South Nyanza sugar company(Sonny)
5. Muhoroni sugar company
6. Miwani sugar company
7. West Kenya sugar company
8. Kibos& Allied sugar company
9. Sukari industry
10. Soin sugar company
11. Kabras sugar company
12. Busia sugar company
13. Butali sugar company
14. Transmara sugar company
15. Kwale sugar company

Appendix II: Data Collection form to extract the information from the financial statements of the sugar firms.

Company X

Year	**Debt**	**Assets**	**Sales**	**EBIT**
2007				
2008				
2009				
2010				
2011				
2012				
2013				
2014				
2015				
2016				