

**AN ANALYSIS OF THE EFFECTS OF CAPITAL STRUCTURE OF SMALL AND  
MEDIUM ENTERPRISES ON THEIR FINANCIAL PERFORMANCE: A CASE OF  
NAKURU TOWN**

**PENVILIA CHEPKEMOI**

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## **DECLARATION**

I hereby declare that this research project is my original work and has not been submitted to any institution for purposes of examination or academic award. Any information given is my entire work and effort and all sources used and quoted are acknowledged in the reference.

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

**PENVILIA CHEPKEMOI GMB/NE/1257/09/11**

## **APPROVAL**

This report has been submitted with our approval as the University Supervisors.

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

Dr. PAUL M. NZIOKI

**School of Business and Economics**

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

Dr. KALIO, AQUILARS

**School of Business and Economics**

## **DEDICATION**

First and foremost, this project is dedicated to my God whose provision, grace, and care I cherish.

Secondly to my loving husband Cleophas, who has supported me morally, materially and financially in my education journey and to produce this project successfully.

Thirdly, this project is dedicated to my parents, Mr. Jonah .K. Koech and Mrs. Lucy C. Bore, Mr.&Mrs Charles N.Omanga for their continued support and encouragement.

Finally, this project is dedicated to my siblings Phylis, Sylvia, Ivyonne, and Marion. My cousins, Flevy, Eddah, Brian, Enoch, Tito, Modeghai, Elvas and Elvis.

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## ABSTRACT

Small and Medium Enterprises (SMEs) use different sources of financing. Some of them emerging to be a challenge to the performance of the SME since most SME owners' lack necessary knowledge on which sources of finance enhances financial performance. Despite SMEs using different sources of financing some of them are still not growing and others are collapsing, majority of SME owners do not have ideas on how debts and internal sources of finance influences their financial performance. Therefore, this study aimed at analyzing the effect of SME capital structure on financial performance. Specifically, this study assessed effects of SMEs capital structure on their profitability, effects of SME capital structure on their liquidity and effects of SME capital structure on their sales growth. The study was informed by pecking order theory. The study targeted 295 SMEs which are registered as companies in Nakuru town. Stratified sampling was applied for allocating samples in different strata. The sample size selected under proportional allocation was 170. Secondary data was collected from financial records of SMEs. Documentary guide aided in data collection. Descriptive statistics such as mean and standard deviation and inferential statistic such as Pearson correlation and multiple regression model was used in analyzing data. The findings revealed that capital structure had negative effect on firm profitability. However, capital structure had positive and significant effect on firm liquidity. Similarly, capital structure indicated a positive effect on sales growth. Based on the study findings, under increased capital structure firm profitability decreases. On the other hand, under increased capital structure, liquidity and growth in sales increases. Thus, SMEs owners should utilize funding from investors by providing insights, resources, accountability and updating sales accounting data. Moreover, firms should avoid situations where they are highly leveraged since this may lead to bankruptcy if they are unable to make payment on their debt and SME owners should also make good investment decisions in order to increase profitability.

**Keywords:** Financial performance, Capital structure, Liquidity, Sales growth, Profitability.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

**CMA** Capital Markets Authority

**CBD** Central Business District

**ECB** European Central Bank

**GDP** Gross Domestic Product

**POT** Pecking Order Theory

**ROA** Return on Assets

**SMEs** Small and Medium Enterprises

**TOT** Tradeoff Theory

## **CHAPTER ONE**

### **INTRODUCTION**

This chapter outlines the background of the study, statement of the problem, objectives of the study, the research hypotheses, justification of the study and the scope, and finally limitations and delimitations of the study.

#### **1.1 Background of the Study**

According to Capital Markets Authority CMA (2010), Small and Medium Enterprise (SME) Sector has continued to play an important role in the economy of this country. The sector's contribution to the Gross Domestic Product (GDP) has increased from 13.8 % in 1993 to about 40 % in 2008. The Small Enterprise Sector or Informal Sector provided approximately 80% of total employment and contributed over 92% of the new jobs created in 2008 according to the Economic Survey of 2009. In addition, financing gap exists with regards to access to capital for SMEs in Kenya. The main challenges facing SMEs in Kenya include overlap and inconsistencies in Legal and Sectoral Policies; Lack of clear boundaries in the institutional mandates; lack of a suitable legal framework; outdated council by-laws; unavailability of land and worksites; exclusion of local authorities in policy development; lack of access to credit; lack of a central coordination mechanism; lack of a devolved coordination and implementation mechanism. Other main impediments to SME securities offerings in Kenya include company law limitations; stringent listing requirements at the NSE; lack of a formal over the counter (OTC) market; control concerns; and tax and disclosure concerns.

Financing decisions are some of the most critical decisions for SME owners since they have direct impact on capital structure and financial performance of the SME. Small and Medium Enterprises prefer internal funds over debt, growth oriented firms use more debt to fund their growth and higher educated firm owners use less debt (Lucey et al., 2006). Previous studies on general small firm capital structure have presupposed small and medium sized enterprises to (predominantly) act in such a way as to maximize their financial wealth. A consequence of this presupposition is that, these studies have assumed that SMEs, in general, desire substantial

growth and consequently have a desire for external finance (Beck et al., 2008), Academic research has documented that there are differences in financing patterns between SMEs and large firms and analyzed possible causes of these differences (Elaine et al, 2005; Kaplan and Turluccio, 2007; Howorth, 20001; mac et al, 2010 among others).

Given the constraints on the supply side of debt financing, an option for SMEs would be to resort to external funding financing, for example, private investors and business angels (Mac et al., 2010). Owners of SMEs, particularly from those which have high growth possibilities, might be willing to concede some control in a firm and attract venture capital funding. Nevertheless, formal venture capital by institutional investors has been so far a viable option only for a very small minority of SMEs, the ones with high growth and feasible exit possibilities for outside investors (European Commission, 2010). Moreover, the supply of venture capital is insufficient, and the costs of this form of finance for SMEs at the start-up stage are high. In the context of SMEs, Ramalho and Vidigal da Silva (2009) document that the proportion of zero-leverage firms in their sample of Portuguese SMEs is even higher than a proportion of zero-leverage large public firms ( Strebulaev and Yang, 2006).

Due to fixed costs of external financing, smaller firms choose to refinance less frequently than larger firms because they are more affected by these fixed costs in relative terms. Hence, small firms choose to operate at a higher leverage level at a refinancing moment to compensate for less frequent rebalancing. This argument explains why smaller firms, if they have some debt, are more levered than larger firms. In addition, as the time period between restructurings is longer for small firms, on average, they have lower leverage ratios (Hirth, 2011).

## **1.2 Statement of the Problem**

The important role of the SMEs as an engine for development could be hampered if the essential elements of their performance are not well catered for by the public and private sectors of an economy. One of the essential elements is financing. Businesses need finance for their expansion, production, innovation, growth and development. Despite SMEs using different sources of financing some of them are still stagnated and others are failing. This could be attributed to lack of knowledge on the best sources of financing with majority of SME owners

having no ideas on how debts and internal sources of finance influence their financial performance. In addition, low-growth SMEs may also exhibit a high mix of debt-to-equity because they are unable to generate retained earnings. However, there is little that has been done to provide viable solutions on which side of financing will benefit financial performance of SMEs and especially in Kenya. Therefore, this study analyzed effects of capital structure on financial performance of SMEs.

### **1.3 Objectives of the Study**

#### **1.3.1 Overall Objective**

The study aimed at analyzing the effects of capital structure of small and medium enterprises on financial performance of SMEs in Nakuru Town

#### **1.3.2 Specific Objectives**

- i. To assess the effects of capital structure on profitability of SMEs.
- ii. To analyze effects of capital structure on the liquidity of SMEs.
- iii. To investigate effects of capital structure on the sales growth of SMEs.

### **1.4 Research Hypotheses**

- i. Capital structure has no significant effect on profitability of SMEs.
- ii. Capital structure has no significant effect on liquidity of SMEs
- iii. Capital structure has no significant effect on the sales growth of SMEs.

### **1.5 Significance and Justification of the study**

The study will assist policymakers in formulating effective strategies and policies to curb under performance of SME.

Scholars and researcher's knowledge and information realized through this research undertaking will benefit other future scholars who wish to study the same area as it provides an insight of what has not been examined.

SME capital structure is rapidly growing as a field of practice. Many business leaders believe that there is need to make effective financial decisions. The findings will inform appropriate policy making and implementation that could spur the growth of SMEs into medium-sized companies. In addition, the study provided information to the SME' owners on the problems that generally face them and on how best they can be able to solve the challenges. Prospective entrepreneurs might find the conclusions on the challenges that face the SME sector useful on how best they can surmount them upon entry into business. The research helped to elucidate on how well capital structure could explain the growth of SMEs within Nakuru Town.

## **1.6 The Scope of the Study**

This study focused on the capital structure influence on the financial performance of small and medium enterprises (SMEs) located within Nakuru town. Thus, the geographical scope of this study only involved SMEs which are located within Nakuru town , while the data was collected from of SME owners.

## **1.7 Limitations and Delimitations of the study**

The study was limited to small and medium enterprises (SMEs) in Nakuru town. The data was captured from audited financial reports of the enterprises. Considering the exponential growth of Nakuru town, the number of SMEs is growing on a daily basis hence accurately capturing these Enterprises was a challenge.

The target population did not willingly provide the information relevant for the study because of confidentiality of such information; hence the researcher took up the responsibility of informing respondents on relevance of the study and assured confidentiality of their information.

## 1.8 Definitions of Terms

**Liquidity** The ease of converting an asset into money (either checking accounts or currency) in a timely fashion with little or no loss in value. It refers to current ratio, which is calculated by dividing the total current assets by the total current liabilities (Irwin 2001).

**Profitability** The state or condition of yielding a financial profit or gain. It is often measured by price to earnings ratio. Booth et al. (2001) point out that profitability is measured by return on assets (ROA) which is the ratio of net operating income to total assets

**Capital structure** refers to the way an organization finances its assets through some combination of equity, debt or hybrid securities is measured as total debt divided by total equity (Peek and Rosengren (2000). In this study, capital structure refers to debt and internal sources.

**Small and Medium Enterprises**-In Kenya small enterprises have from 11 to 50 workers and medium enterprises have from 51 to 100 workers (Gray, Cooley and Lubatingwa, 1997). The researcher in this context refers to SMEs registered as companies.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter reviews the theoretical and empirical literature relevant to the factors affecting firm performance. It mainly focuses on the concept of firm performance, leverage, liquidity, company size, company's age, agency theory and the conceptual framework.

#### **2.2 Theoretical Literature Review**

Since the seminal Modigliani and Miller, (1958) paper showing that subject to some restrictive conditions, the impact of financing on the value of the firm is irrelevant, the literature on capital structure has been expanded by many theoretical and empirical contributions.

##### **2.2.1 Pecking Order Theory**

According to the pecking order theory (POT) (Donaldson, 1961; Myers and Majluf, 1984; Myers, 1984), asymmetries of information between insiders and outsiders will force the company to prefer financing by internal resources, then by debt and finally by stockholders' equity. SMEs are often opaque and have important adverse selection problems that are explained by credit rationing and therefore bear high information costs (Psillaki, 1995). These costs can be considered null for internal funds but are very high when issuing new capital. SMEs prefer debt to new equity mainly because debt means lower level of intrusion and lower risk of losing control and decision-making power than new equity.

The pecking order theory suggests that firms follow a certain hierarchical fashion in financing their operations. They initially use internally generated funds in the form of retained earnings, followed by debt, and finally external funding. The preference is a reflection of the relative cost of the available sources of funds, due to the problem of information asymmetries between the firm and potential finance providers. This means that it is more costly to use external debt finance than using internal funds (Myers and Majluf, 1984).

### **2.2.2 Tradeoff Theory**

According to the traditional (or static) tradeoff theory (TOT), firms select optimal capital structure by comparing the tax benefits of the debt, the costs of bankruptcy and the costs of agency of debt and funding, that is to say the disciplinary role of debt and the fact that debt suffers less from informational costs than outside equity (Modigliani and Miller, 1963; Stiglitz, 1972; Jensen and Meckling, 1976; Myers, 1977; Titman 1984). So optimal leverage minimizes cost of capital and maximizes firm value.

### **2.3 Concept of SME Financial Performance**

Financial performance is generally defined as the use of outcome-based financial indicators that are assumed to reflect the fulfillment of the economic goals of the firm (Murphy et al., 1996). It has been widely used to measure business performance in both small and large firms. A great deal of accounting literature (Kaplan and Atkinson, 1998; Lau and Sholihin, 2005) recognizes the inherent advantage of financial measures. They argue that the financial measures might be beneficial because they are objective and certain to provide a summary view of the success of the organization's performance and operating tactics. Kaplan and Atkinson (1998) consider financial measures as traditional, most widely practiced, and popular management accounting tool because they focus on 'what matters most in most organizations is profitability'. Financial measures consist of a wide range of dimensions, but liquidity (current ratio, quick ratio and cash ratios.), profitability (return on sales, net profit margin and gross profit margin.) and growth (sales growth, market share growth and change in net income.) are commonly chosen output

Performance management literature (Kaplan and Norton, 2001 and Otley, 2003) suggests that when monitoring their firm performance, managers tend to place relatively less emphasis on traditional financial measures of performance such as return on investment or net profit. This is usually explained in terms of traditional performance measures (the accounting-based measures or financial measures) which is unable to satisfactorily reflect firms' performance affected by today's changing business environment (Hoque, 2004).

Return on Investment measures the ability of the firm to generate a return on all the available

resources and assets. It is computed as the Profit after tax divided by total assets. This is also a good measure of performance as it tries to justify the use of resources by the firm Guthrie (1990). The empirical research about the interaction between financial performance and corporate social disclosure has produced mixed results. This is due to the lack of consensus on the measurement of financial performance (Scholtens, 2008). McWilliams (2006) criticized the use of stock market-based measures of financial performance, as stock price only relates to financial stakeholders whereas non-financial stakeholders are also affected by corporate social responsibility activities. Profitability is a key component of financial performance. From the management's point of view, profitability reflects the effectiveness with which management has employed both the total assets and the net assets that are recorded on the balance sheet (Moya, 2010).

Effectiveness is assessed by relating net profit to the assets utilised in the generation of the profit. From the owners' point of view (the shareholders in the case of a company), profitability means the returns achieved, through the efforts of management, on the funds invested by the owners (Helfert, 1991).

Donovan (2005) demanded that all financial statements given by firms to the public must provide valuable information about their financial status." For information to be useful it must facilitate comparisons between firms and time periods, thus under international Financial Reporting Standards, financial statements must be relevant and contain material which is reliable," Donovan (2005) maintained.

Irwin (2001) noted that many people find it difficult to look at a profit and loss account or a balance sheet and derive a full picture. As a result, ratios are often used to interpret accounts. They indicate how a business is performing and provide indications of trends and patterns. They can be compared to the same ratios in previous years' accounts and the accounts of other businesses operating in a similar environment. Ratios are published for many business sectors which can be used as a comparison (these are sometimes referred to as Industry Norms- thus; Profitability - how good is the business as an investment. Liquidity - the amount of working capital available.

Ratios rather than absolute financial measures are often used for benchmarking. Ratios present financial information in the form of relative relationship between two absolute measures of performance.

Sejpal (2006), advised that accounting ratios are normally used in interpreting financial statements and usually include comparison of results with other companies in a similar industry or for comparing results of the same company over a period of time. Accounting ratios cannot be used on their own and interpretation of financial statements though use of accounting ratios can only provide clues to the financial situation of a company all of which is based on historical information. Ratios are highly important profit tools in financial analysis that help financial analysts implement plans that improve profitability, liquidity, financial structure, reordering, leverage, and interest coverage. Although ratios report mostly on past performances, they can be predictive too, and provide lead indications of potential problem areas.

Dobbins, Barnard (2000) looked at measures of Financial Position and Performance as those which include; Profitability- which measures the extent to which a business generates a profit from the use of land, labor, management, and capital.

Liquidity looks at the ability of a business to meet its financial obligations as they fall due in the short term, without operations being disrupted, thus being measured by current ratio Moya (2010).

A business should always hold enough current assets (stock, work-in-progress, reducing debtors, cash in the bank and so on) to cover current liabilities (bank overdraft and creditors). Liquidity ratios therefore indicated the ability of the business to meet liabilities with the assets available.

The current ratio shows the relationship of current assets to current liabilities while solvency gauge the firm's ability to pay all financial obligations if all assets are sold, and the firm continues to meet viable operations after financial adversity and is measured by Debt to asset ratio, and equity to asset ratio. If the net worth of the business becomes negative, then the business would become insolvent. One ratio which gives an indication of solvency is the gearing ratio normally defined as the ratio of debt.

Sales growth, looks at the sales turnover and the market share in the same industry, is also significant in determining the financial performance of an SME because increases in turnover, leads to increases in profits and market share which must be maintained for a company to breakeven (Moya,2010).

## **2.4 Concept of SME Capital Structure**

SME capital structure typically follows pecking order behavior. However, the theoretical underpinnings of the pecking order theory are doubted in the case of SMEs as SME managers highly value financial freedom, independence, and control while the pecking order theory assumes firms desire financial wealth and suffer from severe adverse selection costs in accessing external finance (Lopez-Garcia and Sogorb-Mira, 2008)

Holmes and Kent (1991), by proposing a restricted version of pecking order theory to explain SMEs capital structure, argue that SMEs do not have easy access to equity; it is expensive and raising it implies a dilution of control of the firm. According to Damodaran (2001), capital structure decision is the mix of debt and equity that a company uses to finance its business. Capital structure decisions represent another important financial decision of a business organization apart from investment decisions. It is important since it involves a huge amount of money and has long- term implications on the firms. According to Gleason et al. (2000), the utilization of different levels of debt and equity in the firm's capital structure is one such firm-specific strategy used by managers in the search for improved performance. Hence, most firms have strived to achieve an optimal capital structure in order to minimize the cost of capital or to maximize the firm value. Previous research has established that small-firm finance differs from large-firm finance and that optimal capital structure rules are often not applicable to SMEs (Uzzi and Gillespie, 1999; Van der Wijst, 1989; Welsh and White, 1981). In the finance literature, the optimal capital structure (i.e. debt-equity ratio) is defined as that which minimizes the overall cost of financing the venture (Moro et al., 2010).

## 2.5 Financing Pattern of Small Medium Enterprise

According to Moro et al. (2010), firms in general and SMEs in particular have various sources of finance to support their activities that can be summed up as, equity and shareholders' funds, trade credit, short term and long term bank debt. Financing decisions in small and medium-sized enterprises (SMEs) have received comparatively little academic attention, despite their economic importance elaine et al. (2005).

Academic research has documented that there are differences in financing patterns between SMEs and large firms and analyzed possible causes of these differences. Cressy and Olofsson (1997) note that smaller businesses are heavily reliant on retained earnings to finance their investment flows and obtain most of additional finance from banks, while other resources, especially equity, are less important. Brighi and Torluccio (2007) used data from an Italian SMEs survey and found that on average, self-financing as a major form of finance is the preferred choice of the youngest firms. They also found that a preference for self-financing is related to the firm's size: the smaller the firm, the more common self-financing of investments. Although these findings seem consistent with the predictions of the pecking order theory, there might be alternative explanations why smaller firms prefer internal resources over debt and debt over outside equity, related to both the supply-side and demand-side effects.

It is also likely that SMEs are more vulnerable to credit crunches during economic downturns or financial crises than larger enterprises. The European Central Bank (ECB) and the European Commission twice a year conduct a survey of SMEs to analyze their financing conditions in the euro area. The surveys from 2009 provide evidence that the financial and economic crisis had an adverse effect on the availability of external financing for SMEs (ECB, 2009, 2010). The surveys reveal that access to finance was the second most serious problem, reported by 17% of SMEs in the first half of 2009 and by 19% in the second half of 2009 (ECB 2009, 2010). Although around three out of four applications for the bank loans were successful either wholly or in part, the results suggest that the bigger and older the firm applying for a bank loan is, the more likely it is that the loan is granted.

In the survey of the first half of 2009, around half of micro firms reported that they received the full amount of loans they applied for, while this is the case for around 70% of medium enterprises, on average, 25.2% of the enterprises in the twelve new member states report that they encounter constraints or difficulties in access to finance, while the percentage for fifteen old member countries is 20.3%. The most pressing problem SMEs in the euro area was finding customers, reported by 27% of SMEs in the first half of 2009 and 28% in the second half of 2009, Sized and large companies (ECB 2009). Similarly, the number of rejected applications is significantly higher for the smallest firms than for larger companies. Hence, it seems that the smaller the firm, the more severely it might be affected by the deteriorating economic conditions. SMEs are financially constrained in accessing additional equity and their only option is to obtain additional bank finance or leverage their trade credit capability (Berger and Udell, 1998; Howorth, 2001)

Given the constraints on the supply side of debt financing, an option for SMEs would be to resort to external equity financing, for example, private investors and business angels (Mac and Bhaird and Lucey, 2010). Owners of SMEs, particularly of those which have high growth possibilities, might be willing to concede some control in a firm and attract venture capital funding. Nevertheless, formal venture capital by institutional investors has been so far a viable option only for a very small minority of SMEs, the ones with high growth and feasible exit possibilities for outside investors (European Commission 2010). Moreover, the supply of venture capital is insufficient, and the costs of this form of finance for SMEs at the start-up stage are high.

The problem of bank financing to SMEs has been persistent for many years in the developing countries with both parties actively responsible for the lack of SME financing. SMEs because of their shortfalls in meeting the classic requirements of the banking sector and banks could mobilize more resources in order to penetrate the SMEs segment, basically both parties share the blame of the problem as both groups show real weaknesses in their capacity to respect the requirements and practices of the other (Lindholm-Dahlstrand and Cetindamar, 2000).

## **2.6 Internal Source of Financing on the SME Financial Performance.**

SMEs are traditionally financed by the entrepreneurs and their relatives (for the role of family, see Fletcher, 2000). They do not like to access external finance since it implies a reduction in the freedom in managing the firm (Delmar, 2000), limitation in the possibility of accessing non-pecuniary benefits (Jensen and Meckling, 1976) and the implementation of additional control and management tools (Delmar, 2000). SMEs are very opaque and for them the implementation of control mechanisms can be very costly. Therefore, potential investors face big problems in valuing the venture and making investment decisions (Block and McMillan, 1985).

When the firm is run as a sole trader or it does not rely on limited liability, it implicitly leverages all entrepreneurs' personal assets since in case of distress, creditors can access not only the firm's assets but also the entrepreneurs' private assets. Either way, shareholders and entrepreneurs usually invest in the venture all their wealth from the beginning (Avery, et al. 1998).

Equity and the return on equity cannot be quantified or even clearly defined for the majority of SMEs. The cost of equity cannot therefore be ascertained and employed in capital structure decisions. Also profit is not necessarily a source of finance. When, for example, the profit is the result of assets revaluation (as in mark to market accounting), profit does not generate any financial benefit. In addition, there is a time lag between earning profit and generating cash (Moro et al, 2010).

Many small firms are established as family businesses, which may not pursue growth strategies, and the 'contentment hypothesis' argues that SMEs attach a greater utility value on connections and relationships than financial wealth. Moreover, if SMEs have unconstrained choice between external debt and internal resources, they will choose not to use debt financing because of a desire to retain control and independence (Bell and Vos 2009). It is also likely that SMEs might be managed by the owners whose expert skills are not in the field of finance. Due to constrained knowledge and management skills, they may not understand the benefits and costs of debt and other funding options. Consequently, the owners of SMEs may show a strong preference for the funding options, which have minimal or no intrusion into their companies, that is, retained



earnings and personal savings. If external financing is necessary, they prefer debt financing over an introduction of new equity, which implies an ultimate intrusion into their businesses. Hence, the smaller the firm, the higher might be the probability that it is not using external financing deliberately.

## **2.7 Concept of Debts and the Financial Performance of SMEs**

Empirical research mainly examines capital structure of SMEs and SMEs lending relationships. This research tends to consider the owner and the manager of the firm as one actor and is mainly concerned with investigating how external actors (banks, trade creditors, among others.) deal with the information asymmetries resulting from the opaqueness of SMEs (Moro et al., 2010). Although SMEs can rely on various sources of finance such as trade credit (Rodriguez-Rodriguez, 2006), research stresses the core role played by bank finance

Heyman et al. (2007) suggest that maturity matching between debt and the life of assets plays an important role in deciding the length of the debt. Short-term debt is positively correlated with a firm's growth opportunities (Garcia-Terul and Martinez-Solano, 2007): it is higher in stronger and more flexible firms, when there are big differences between short-term and long-term interest rates and when firms have more growth opportunities. Some research investigates specifically the role short-term debt has in SMEs (ibid, 2007). It is regarded as a good tool for the bank which can act rapidly to recoup the principal on the arrival of bad news (although with the limitations pointed out by Gupta et al., 2008). It is also considered a good financing tool by entrepreneurs: they are optimistic and tend to overestimate the success of their projects, either because they receive non-economic benefits or because they fail to evaluate correctly the probability of success. Either way, from the entrepreneur's point of view, short-term debt is the best financing tool because it is perceived to be cheaper. Thus, both entrepreneur and bank prefer short-term debt (Landier and Thesmar, 2009).

SMEs financing challenges the proposition that capital structure can be modelled by looking at agency theory, asymmetry of information, taxes, among others. In contrast with previous models, support was provided for the proposition that the determinants of short-term debt and long-term debt are different; for instance short-term debt is not affected by the tradeoff between tax

benefits and bankruptcy costs. Long-term debt is affected by collateralisable assets but short-term debt is not (Pindalo, et al., 2006).

This was found both for SMEs and for new ventures for which the access to finance is more limited than for traditional SMEs (Örtqvist et al., 2006). Indeed, since new ventures are very risky due to lack of a track record and frequently have not already entered the production and selling stage, finding a substitute for equity is very hard, notwithstanding the tax benefits linked with leveraging debt (Örtqvist et al., 2006)

In addition, the firm is required to provide trade credit to customers. Since the value of sales is greater than the value of the purchases, the amount of credit provided to the customers is usually greater than the amount of credit received from suppliers. As a consequence, the firm is not necessarily better off by the use of trade credit. The firm can benefit from trade credit if it is able to discount its receivables with the bank or with factoring organization but at a cost. From this point of view, the firm is simply using a peculiar kind of bank credit (Moro et al., 2010).

The cost of trade credit is not easy to establish, since firms are usually not charged differently according to the length of the period for which credit is taken. Petersen and Rajan (1994) define the cost of trade credit in terms of cash discount available by paying in advance rather than utilizing the full period of credit available. Such an approach provides inconsistent figures and it does not work when cash discount is not an option and where no differences in price can be found between different terms of payment. Some other works define cost of trade credit as the discount rate on discounting receivables (Miwa and Ramseyer, 2008), stressing that trade credit is an example of delegated monitoring (Diamond, 1984), where the bank exploits seller economies of scale in monitoring the buyer.

Either way, the cost of trade credit is not relevant per se: either it is non-existent, or it is a component of the cost of bank funds (and therefore included in the cost of debt (Moro et al, 2010).

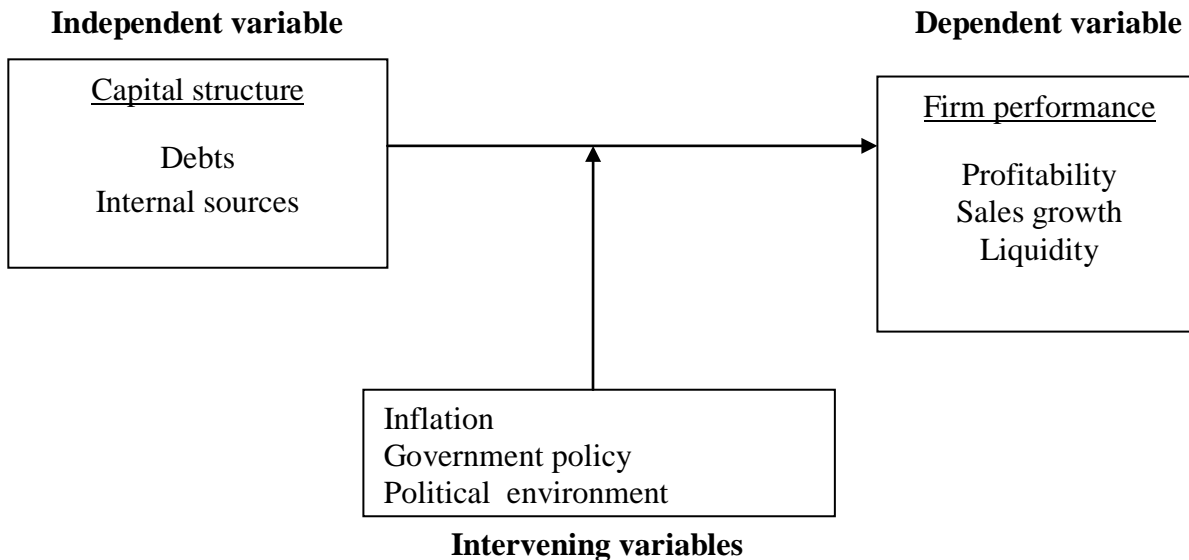
According to Moro et al (2010), repayment plan has a key role in building up the optimal debt structure of the firm since, if it is too short, the firm will end up again using short-term debt to

finance long term assets, if it is too long, it can raise problems of underinvestment since the firm has additional, free cash temporarily available (Jensen, 1986).

Thus, the repayment plan has to match the cash flows available after all current expenditure (suppliers, personnel, taxes, etc.) and repayment of other long-term debt but before the payment of dividends. The model attempts to match the life of the firm’s assets and the debt maturity. The repayment plan matches the cash flows available after all current expenditure (suppliers, personnel, taxes, etc.) but before the payment of dividends.

## 2.8 Conceptual Framework

The overall objective of the study is to determine the SMES capital structure patterns and their effects on their financial performance. To provide the link between capital structure and firm performance, a conceptual framework is developed to assist in analyzing data in relation to how these effects of SME capital structure on firm performance which will be the dependent variable. The conceptual framework below represents independents variables which are debts and internal financing.



**Figure 2.1 Capital structure patterns on financial performance**

Source: Author (2013)

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter covers the research design, target population, sampling procedure and sample size, data collection method, data validity and reliability, data analysis and presentation, ethical consideration and finally the expected output.

#### **3.2 Research Design**

Polit and Hungler (1999) described research design as a blue print or outline for conducting a study in such a way that maximum control was exercised over factors that could interfere with the validity of the research results. This study adopted an explanatory design because the research was a cause-effect relationship. This design was best for analyzing the SME capital structure patterns and its effects on the SMEs financial performance. Explanatory research focuses on why questions and causal relationships design. Answering the 'why' questions involves developing causal explanations. Causal explanations argue that phenomenon Y (e.g. SME financial performance) is affected by factor X (e.g. debts). Some causal explanations were simple while others were more complex. For example, argue that there was a direct effect of debts on financial performance (De Vaus, 2001)

#### **3.3 Target Population**

The population of study comprised SMEs registered as companies within Nakuru town which is located in Nakuru County. According to Nakuru Municipal records, there were 295 SMEs registered as companies under the Companies Act (Cap 486) (Municipal records, 2013). The study targeted these 295 SMEs within four sectors, namely; general traders, metal wok and carpentry, agriculture and other different sectors such as mobile accessories, electronics and computer. This is because the targeted SMEs kept proper books of accounts as required by law and the four sectors dominated Nakuru town.

### 3.4 Sample Size and Sampling Design

From the target population of 295 SMEs, Taro Yamane (1967) sample size formula was used to select a sample size of 170 SMEs as shown below;

$$n = \frac{N}{1 + N e^2} = \frac{295}{1 + 295_{0.05}^2}$$
$$= 170$$

Where:

n = Sample size

N = Population size

e = the error of Sampling

This study allowed the error of sampling on 0.05. Thus, sample size was 170 SMEs.

#### 3.4.1 Sampling Procedure

The study used stratified random sampling technique to select the SMEs where owners/managers were picked from. Therefore, SMEs were stratified into four strata (sectors) where the sample size was allocated under stratified proportional allocation. The purpose of the method was to maximize survey precision, given a fixed sample size. With stratified proportional allocation, the best sample size for stratum h was:

$$n_{h=} \left( \frac{N_h}{N} \right) n$$

Where,

nh - The sample size for stratum h,

n - Total sample size,

Nh -The population size for stratum h,

N - The total population

Hence, distributions was as follows;

**Table 3.1: Sampling**

| <b>Name of SME</b>      | <b>Target population</b> | <b>Sample size of SMEs</b> |
|-------------------------|--------------------------|----------------------------|
| Agriculture             | 50                       | 29                         |
| Workshops and carpentry | 70                       | 40                         |
| General retailers       | 80                       | 46                         |
| Others                  | 95                       | 55                         |
| <b>Total</b>            | <b>295</b>               | <b>170</b>                 |

The researcher assigned random numbers to SMEs in each street then calculated the max-value of the sampling interval (the number of individuals in the population divided by the number of individuals to be chosen for the sample, Select a random number between 1 and the max-value, and repeatedly add the max value to select the rest of the SME). And Choose the sample by selecting the SMEs corresponding to the number sequence obtained.

### **3.5 Data Collection Method**

Documentary guide was used to collect secondary data. The secondary data was obtained from SME financial records. The study only collected data related to debts, internal source of financing, profits, sales, total asset and current assets and current liabilities for a period of the past three years. The data collected was purely quantitative.

### **3.6 Data Validity and Reliability.**

The validation process for the survey instrument had two steps: content validity, which was covered in designing the survey instrument; construct validity, which included reliability (O’Leary-Kelly and Vokurka, 1998). The literature review and in-depth interviews was conducted with SME debt financing to establish the basis of content validity of the survey instrument. The purpose of construct validity was to show that the items measured and were correlated with what they purported to measure and that the items did not correlate with other constructs.

### 3.7 Data Analysis and Presentation.

Since the data collected was quantitative in nature and seek to determine the degree of association and cause-effect relationship between the variables, descriptive, inferential, correlation and simple regressions was used in analyzing the data.

Descriptive statistics was used to test for normality of the data collected. Measures of central tendency like mean and Standard deviation was computed to see if it concurs with the research hypothesis. Inferential statistics was used to draw implications from the data with regard to the regression model. Correlation analysis was utilized to test the hypothesis of the study.

Simple regressions was employed to estimate the effects of multiple independent variables on a single dependent variable for purposes of prediction (Blalock 1979).To analyze the data, Regression model was used with assumptions:

According to Osborne, Jason and Elaine Waters (2002) the regression model has the following assumptions, assumptions that variables are normally distributed, assumption of a linear relationship between the independent and dependent variable(s).assumption that variables measured are reliably, assumption of homoscedasticity ( i.e. the variance of errors is the same across all levels of the IV).

Regression analysis was used to test hypothesis about the relationship between the independent variable and dependent variable

The simple regression model used in this study is given as;

$$y_1 = \alpha_{it} + \beta_1 x_1 + \beta_2 x_2 + \varepsilon_{it}$$

$$y_2 = \alpha_{it} + \beta_1 x_1 + \beta_2 x_2 + \varepsilon_{it}$$

$$y_3 = \alpha_{it} + \beta_1 x_1 + \beta_2 x_2 + \varepsilon_{it}$$

Where,

$y_1$ =SME liquidity

$y_2$ = profitability

$y_3$  sales volume)

$\alpha$  = constant.

$\beta_1$  and  $\beta_2$ = the slope which represents the degree in which firm performance changes as the independent variable change by one unit variables.

$x_1$ = Debts

$x_2$ = Internal sources

$\varepsilon$  = error term

### **3.8 Ethical Consideration**

The researcher purely used the information collected for the purpose of this study and was not forward to any other party. The information from any individual was treated with high degree of confidentiality without disclosing the respondents identity, and was open minded as possible and express opinions as they were given. The researcher did not modify anything and was also appreciative of all the literature that contributed in any way to this research.



## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND DISCUSSION

#### 4.1 Introduction

This chapter presents results of the study based on the formulated objectives and hypotheses as presented in chapter one. The chapter analyzes the variables involved in the study and explains the conceptual model described in chapter two. In the first two sections, data description and analysis is presented. First, descriptive statistics were used to analyze data as per the sector, thereafter, hypothesis testing was done using inferential statistics based on the study objectives.

#### 4.2 Descriptive statistics Analysis of Data

##### 4.2.1 General Traders

Findings as shown in Table 4.1 reported that SMEs in the general traders sector disclosed profitability at 11.1%. Further, the analysis reported that capital structure was 30.94% debt against internal sources (retained earnings (mean=0.3094). Liquidity was recorded at 2.9611 current asset over current liabilities (mean = 2.9611) with sales growth of 7.089.

**Table 4.1 General Traders**

|                   | <b>Minimum</b> | <b>Maximum</b> | <b>Mean</b> | <b>Std.<br/>Deviation</b> | <b>Kurtosis</b> |
|-------------------|----------------|----------------|-------------|---------------------------|-----------------|
| Profitability     | -0.03          | 0.47           | 0.111       | 0.10295                   | 3.23            |
| Capital structure | 0.17           | 0.63           | 0.3094      | 0.08902                   | 3.937           |
| Liquidity         | 0.66           | 12.41          | 2.9611      | 2.41892                   | 5.599           |
| Sales growth      | 4.55           | 8.93           | 7.0896      | 1.18345                   | -0.783          |

#### 4.2.2 Workshops and Carpentry

Data in table 4.2 indicated that SMEs dealing with workshops and carpentry had profitability of 0.62%. Further, analysis reported that capital structure was 37.11% debt against internal sources (mean=0.3711). SMEs dealing with workshops and carpentry recorded liquidity at 1.679 current assets over current liabilities (mean=1.679) with sales growth of 6.5447.

**Table 4.2 Workshops and Carpentry**

|                   | Minimum | Maximum | Mean   | Std. Deviation | Skewness | Kurtosis |
|-------------------|---------|---------|--------|----------------|----------|----------|
| Profitability     | -0.31   | 0.25    | 0.0062 | 0.12685        | -1.125   | 2.23     |
| capital structure | 0       | 3.19    | 0.3711 | 0.76654        | 3.117    | 9.91     |
| Liquidity         | 0.27    | 3.43    | 1.679  | 0.82224        | 0.572    | -0.16    |
| Sales growth      | 5.75    | 7.34    | 6.5447 | 0.46282        | 0.172    | -1.115   |

#### 4.2.3 Agricultural sector

As depicted in table 4.3 SMEs dealing with agriculture had a profitability of 7.83%. In addition, the SMEs specializing with agricultural sector reported a capital structure of 67.55% debt against internal sources (mean=0.67559). Further the findings reported that the SMEs dealing with agricultural sectors had liquidity of 1.3764 current assets over current liabilities (mean=1.3764) with a sales growth of 6.3842.

**Table 4.3 Agricultural sector**

|                   | Minimum | Maximum | Mean   | Std. Deviation | Skewness | Kurtosis |
|-------------------|---------|---------|--------|----------------|----------|----------|
| Profitability     | -0.3    | 0.24    | 0.0783 | 0.09374        | -1.816   | 6.672    |
| capital structure | 0       | 2.16    | 0.6719 | 0.67559        | 0.798    | -0.554   |
| Liquidity         | 0.31    | 2.31    | 1.3764 | 0.62619        | -0.205   | -0.946   |
| Sales growth      | 5.7     | 8.09    | 6.8342 | 0.72322        | 0.481    | -0.994   |

#### 4.2.7 Other sectors

Study findings in table 4.4 illustrated that profitability, sales growth, capital structure and liquidity for other sampled SMEs in Nakuru town. Results reported that profitability was 8.03%. It was also shown that capital structure was 44.81% debt against internal sources (mean=0.4481). Liquidity was reported to be 1.824 current assets over current liabilities of SMEs and a sales growth of 7.1654.

**Table 4.4 Other Sectors**

|                   | <b>Minimum</b> | <b>Maximum</b> | <b>Mean</b> | <b>Std. Deviation</b> | <b>Skewness</b> | <b>Kurtosis</b> |
|-------------------|----------------|----------------|-------------|-----------------------|-----------------|-----------------|
| Profitability     | -0.31          | 0.47           | 0.0803      | 0.09548               | -0.274          | 4.351           |
| capital structure | 0              | 3.19           | 0.4481      | 0.50017               | 2.117           | 5.484           |
| Liquidity         | 0              | 12.41          | 1.8324      | 1.34726               | 4.332           | 25.64           |
| Sales growth      | 4              | 9.96           | 7.1654      | 1.0096                | 0.369           | 0.371           |

#### 4.3 Results for Correlation Test

The Pearson correlation test for the variables (capital structure and financial performance) to assess the relationship between the variables is reported in Table 4.5 The relationship between capital structure and profitability indicated a Pearson correlation ratio = (-0.337,  $p < 0.01$ ) indicating a significant negative correlation between capital structure and profitability of SMEs. The relationship between capital structure and liquidity of listed firms showed a negative and significant correlation as evidenced by Pearson correlation ratio = (-0.209,  $p < 0.01$ ) hence the researcher concluded that capital structure was negatively correlated with liquidity. The relationship between capital structure and sales growth indicated a Pearson correlation ratio = (0.036,  $p < 0.01$ ) hence inferring that capital structure had no significant positive correlation to sales growth. That is, there was no correlation between sales growth and liquidity as well as between sales growth and capital structure.

**Table 4.5 Correlations Results**

|                   |  | profitability | Liquidity        | Sales Growth   | Capital structure |
|-------------------|--|---------------|------------------|----------------|-------------------|
| Profitability     | Pearson Correlation<br>Sig. (2-tailed) | 1             |                  |                |                   |
| Liquidity         | Pearson Correlation<br>Sig. (2-tailed) | .371**<br>0   | 1                |                |                   |
| Sales Growth      | Pearson Correlation<br>Sig. (2-tailed) | .487**<br>0   | 0.047<br>0.504   | 1              |                   |
| Capital structure | Pearson Correlation<br>Sig. (2-tailed) | -.337**<br>0  | -.209**<br>0.003 | 0.036<br>0.606 | 1                 |

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

#### 4.4 Results From Regression Analysis

##### 4.5.1 Effects of Capital Structure on Profitability of SMEs.

The coefficient for capital structure (-0.337), in Table 4.6 indicate that as capital structure increase by one unit profitability would decrease by .337 units. The results showed that capital structure explained 11.4% percent variation of profitability. This showed that, considering the independent variable (capital structure), there is a probability of predicting profitability by 11.4% (R squared =0.114). It was also revealed that the above discussed coefficient of determination was significant as evidence of F ratio of 25.8 with p value 0.000 <0.05 (level of significance). Thus, the model was fit to predict profitability using capital structure. The findings therefore concur with Holmes and Kent (1991) that SMEs do not have easy access to equity thus it is expensive to them and raising equity is disadvantageous to the SMEs because it brings about dilution of control thus profitability can be sabotaged. Profitability plays a key role in financial performance of SMEs. However, the utilization of different levels of debt and equity in the firm's capital structure is one of the methods employed by managers in order to improve performance. Usually, most SMEs are financed by the entrepreneurs and their relatives

(Fletcher,2000) hence it becomes hard for SMEs to access non-pecuniary benefits, for instance flexibility over one’s schedule and being one’s own boss (Jensen and Meckling, 1976).Therefore access to equity from external sources creates complexity in management there by impacting negatively on profitability.

**Table 4.6 Capital Structure and Profitability**

|                   | Unstandardized Coefficients |            | Standardized Coefficients |        |       | Collinearity Statistics |     |
|-------------------|-----------------------------|------------|---------------------------|--------|-------|-------------------------|-----|
|                   | B                           | Std. Error | Beta                      | T      | Sig.  | Tolerance               | VIF |
| (Constant)        | 0.109                       | 0.009      |                           | 12.835 | 0.000 |                         |     |
| capital structure | -0.064                      | 0.013      | -0.337                    | -5.079 | 0.000 | 1                       | 1   |
| R Square          | 0.114                       |            |                           |        |       |                         |     |
| Adjusted R Square | 0.109                       |            |                           |        |       |                         |     |
| F                 | 25.8                        |            |                           |        |       |                         |     |
| Sig.              | 0.000                       |            |                           |        |       |                         |     |

a Dependent Variable: Profitability

**4.5.2 Effects of Capital Structure on The Liquidity of SMEs.**

The coefficient for capital structure (0.371) in Table 4.7 indicate that as capital structure increase by one unit liquidity would increase by 0.371 units. The results showed that capital structure explained 13.8% percent variation of liquidity. This showed that considering the independent variable (capital structure), there is a probability of predicting liquidity by 13.8% (R squared =0.138).Table 4.7 also indicated that the above discussed coefficient of determination was significant as evidence of F ratio of 32.051 with p value 0.000 <0.05 (level of significance). Thus, the model was fit to predict liquidity using capital structure. The research findings concur with Moya (2010) that liquidity focuses on the ability of a business to meet its financial obligations without disruption of its operations. Therefore, a liquid firm is one that promptly pays all its obligations and as such is desirable for funding sources thereby affirming that capital structure has a positive significant effect on liquidity. The research findings are also in agreement with(Garcia-Terul and Martinez-Solano, 2007 that it is important for a business to always hold enough current stocks for example work in progress so that it is able to cover current

liabilities such as bank overdrafts and creditors. Liquidity ratios therefore indicated the ability of the business to meet liabilities with the assets available.

**Table 4.7 Capital Structure and Liquidity**

|                   | Unstandardized Coefficients |            | Standardized Coefficients | T     | Sig.  | Collinearity Statistics |     |
|-------------------|-----------------------------|------------|---------------------------|-------|-------|-------------------------|-----|
|                   | B                           | Std. Error | Beta                      |       |       | Tolerance               | VIF |
| (Constant)        | 0.032                       | 0.011      |                           | 3.042 | 0.003 |                         |     |
| Capital Structure | 0.026                       | 0.005      | 0.371                     | 5.661 | 0     | 1                       | 1   |
| R Square          | 0.138                       |            |                           |       |       |                         |     |
| Adjusted R Square | 0.133                       |            |                           |       |       |                         |     |
| F                 | 32.051                      |            |                           |       |       |                         |     |
| Sig.              | .000b                       |            |                           |       |       |                         |     |

a Dependent Variable: Liquidity

### 4.5.3 Effects of capital structure on the sales growth of SMEs

The coefficient for capital structure (0.487) in Table 4.8 indicated that as capital structure increase by one unit, sales growth would increase by .487 units. The results showed that capital structure explained 23.7% percent variation of sales growth. This showed that considering the independent variable (capital structure), there is a probability of predicting sales growth by 23.7% (R squared =0.237). Indicated that the above discussed coefficient of determination was significant as evidence of F ratio of 62.572 with p value 0.000 <0.05 (level of significance). Thus, the model was fit to predict sales growth using capital structure. The findings thus concur with (Moya, 2010) that short-term debt is positively correlated with a firm's growth opportunities. The sales growth focuses on the sales turnover and the market share in the same industry therefore access to debt and equity is important in determining the financial performance since an increase in a firm's finances and its assets leads to an increase in sales growth. The research findings are also in agreement with (European Commission 2010) that formal venture capital by institutional investors is viewed as a viable option for a minority of SMEs whereas SMEs with high growth and feasibility prefer outside investors since they bring together large amounts of money and invest them in the SMEs thus enhancing performance.

**Table 4.8 Capital Structure and Sales Growth**

|                   | Unstandardized Coefficients |            | Standardized Coefficients | Collinearity Statistics |       |           |     |
|-------------------|-----------------------------|------------|---------------------------|-------------------------|-------|-----------|-----|
|                   | B                           | Std. Error | Beta                      | T                       | Sig.  | Tolerance | VIF |
| (Constant)        | -0.225                      | 0.039      |                           | -5.763                  | 0.000 |           |     |
| Capital Structure | 0.043                       | 0.005      | 0.487                     | 7.91                    | 0.000 | 1         | 1   |
| R Square          |                             | 0.237      |                           |                         |       |           |     |
| Adjusted R Square |                             | 0.234      |                           |                         |       |           |     |
| F                 |                             | 62.572     |                           |                         |       |           |     |
| Sig.              |                             | .000b      |                           |                         |       |           |     |

a Dependent Variable: Sales growth

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

In this chapter, the major findings are discussed in summary; the conclusions are drawn based on the findings and recommendations are made with reference to concerned stakeholders and policy makers. The general purpose of this study was to analyze the effects of capital structure of small and medium enterprises on financial performance in Nakuru Town. The study was guided by the following research objectives; to assess the effects of capital structure on profitability of SMEs, analyze effects of capital structure on the liquidity of SMEs and investigate effects of capital structure on the sales growth of SMEs.

#### 5.2 Summary of Findings

The regression results indicated that each of the predicted parameters in relation to the independent factor were significant;  $\beta_1 = -0.337$ . Therefore, we reject the null hypothesis stating that there is no significant relationship between capital structure and profitability. Research findings revealed that capital structure had negative effect on firm profitability. The SMEs were found to be financing their assets through a combination of equity and debts.

The findings also showed that  $\beta_2$  was 0.371. This represented a significant effect of capital structure and liquidity thus we reject the null hypothesis stating that there is no significant relationship between capital structure and liquidity.

As stated by hypothesis statement, capital structure has no significant effect on sales growth of SMEs ( $H_{O3}$ ), research findings show inconsistency with the hypothesis since capital structure recorded a beta coefficient ( $\beta$ ) of (0.487,  $\rho = 0.00 < 0.05$ ). Thus capital structure has a significant effect on sales growth.



### **5.3 Conclusions**

There is enough evidence of a negative relationship between capital structure and profitability. Access to equity is expensive for SMEs and creates complexity in management of SMEs. It has also been revealed that utilization of different levels of debt and internal sources enables firms to invest more hence more profits.

There is evidence that capital structure has a significant effect on liquidity. From the findings, firm's with more liquid stock is highly likely to meet its financial obligations in the required time and higher liquidity is as a result of proper organization of internal sources and debts. Therefore, it is true to state that there is a positive significant relationship between capital structure and liquidity.

The study affirms that capital structure has a significant effect on sales growth. From the study findings there is enough prove that capital structure enables SMEs to engage in financial investments. A high degree of internal sources implies a relative change in sales which results to growth.

### **5.4 Recommendations**

The study find strong support for the argument that capital structure impacts on liquidity very highly, thus SME owners should be willing to come up with ways to increase the amount of liquid stocks in order to increase financial viability. This way financial performance will improve and growth will be enhanced among the SMEs in the different sectors.

From the study findings it was conceived that capital structure has a remarkable role in sales growth. Therefore, SME owners' should utilize funding from investors by providing insights, resources, accountability and updating sales accounting data. Once this is done, there will be high sales turnover leading to sales growth.

From the study findings, there is an association between capital structure and profitability. Therefore firms should avoid situations where they are highly leveraged since this may lead to

bankruptcy if they are unable to make payment on their debt and SME owners should also make good investment decisions in order to increase profitability.

## **5.5 Recommendations for Further Studies**

This study main objective was to analyze the effects of capital structure of small and medium enterprises on financial performance in Nakuru Town. From the study findings, the findings was only limited to capital structure. Thus, more research and studies should be carried out to determine if indeed capital structure is the only determinant that affects profitability, liquidity and sales growth. There should be a policy implication for concerned parties which consider effects of the determinant (capital structure) while setting the strategic plans of SMEs which will see an increase in liquidity, profitability and sales growth among the SMEs.

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## 1.2 Test of the Assumption of Regression Model

### 1.2.1 Test of Normality

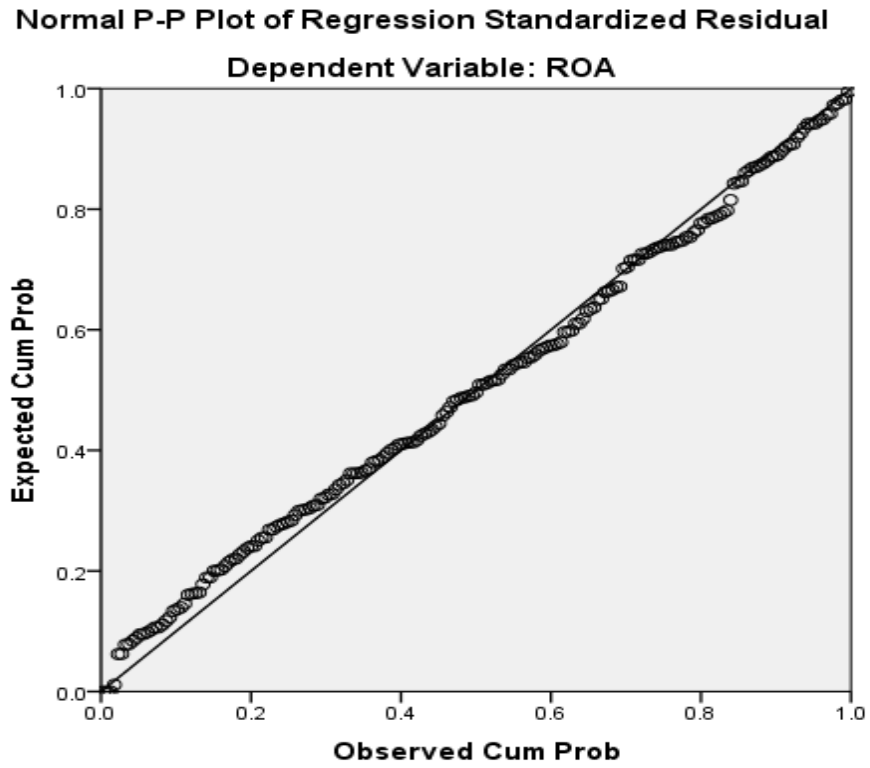
From table 4.6 The Kilmogorov-Smirnov statistic was not significant ( $p>0.05$ ) and therefore the distribution is normal. In addition, also Shapiro walk was not significant ( $p>0.05$ ) indicating that the distribution of the data was normal.

**Table 4.6 Test of Normality**

|                   | Kolmogorov-Smirnova |     |       | Shapiro-Wilk |     |       |
|-------------------|---------------------|-----|-------|--------------|-----|-------|
|                   | Statistic           | Df  | Sig.  | Statistic    | Df  | Sig.  |
| Profitability     | 0.12                | 203 | 0.651 | 0.912        | 203 | 0.651 |
| capital structure | 0.235               | 203 | 0.231 | 0.76         | 203 | 0.41  |
| Liquidity         | 0.203               | 203 | 0.102 | 0.608        | 203 | 0.101 |
| Sales growth      | 0.087               | 203 | 0.452 | 0.968        | 203 | 0.651 |

### 1.2.2 Test of Linearity and Homoscedasticity

Findings showed a random pattern; with no nonlinearity this is true because points are not far above and below the Y axis 0 line. Thus, the assumption that there data was linear and normal was attained



The scatter graph depicted a funnel shaped diagram thus illustrating normal distribution of the data.

### Scatterplot

Dependent Variable: ROA

