

**THE RELATIONSHIP BETWEEN PROFITABILITY AND CAPITAL
STRUCTURE OF SMALL AND MEDIUM ENTERPRISES IN NAIROBI
COUNTY**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT
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DECLARATION

This is my original work and it has not been presented for degree award in any other university.

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DEDICATION

This research project is dedicated to my late parents, my late Grandmother Grace, my husband Steve, my children Kimberly and Ethan and to all my friends. I thank you for your love, support and encouragement in the course of my studies.

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First, I am grateful to God Almighty for the gift of life, health, strength, finances and knowledge during my studies.

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LIST OF ABBREVIATIONS AND ACRONYMS

ARBT	_____	African Review Business Technology
GDP	_____	Gross Domestic Product
GoK	_____	Government of Kenya
KNBS	_____	Kenya National Bureau of Statistics
OLS	_____	Ordinary Least Squares
ROA	_____	Return on Assets
SMES	_____	Small and Medium Enterprises

ABSTRACT

Small and Medium Enterprises play an important role towards economic growth and development not just in Nairobi county, but Kenya at large. The relationship between the capital structure of firms and their profitability has been explored in both developed and developing countries. However, despite the limitation of empirical findings in the Kenyan case, the existing literature seems inconclusive due to mixed findings. Thus, this study investigated how capital structure affects profitability of the firm, focusing on SMEs in the county government of Nairobi. This study was guided by trade-off and Pecking Order Theories. The study employed a correlation survey design to investigate the relationship between profitability and capital structure among SMEs in Kenya. Secondary data obtained from the World Bank Enterprise Survey of 2013 was used. A total of 179 SMEs was sampled for the study. The study used both descriptive and regression analysis with the help of Ordinary Least Square Methods. Findings of the study indicate that the capital structure of the firm, positively influenced firm profitability. In addition, the size of the firm, growth in terms of sales, and the assets influenced firm profitability positively. Furthermore, the age an SME does not affect its productivity. Following the findings, the study concluded that higher ration of loans in the capital structure, the size of the SME and the assets, leads to an increase in SMEs profits. The study, therefore, recommends that SMEs should be encouraged to take loans and increase their business operations since, the benefits are more than the costs. In addition, the study recommends that SMEs should find ways of expanding their business to reap the benefits of economies of scale.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Selection and adoption of optimal capital structure is among key decisions of business enterprises. This is because, such decisions have implications on enterprise performance (Ayyagari, Demirgüç-Kunt & Maksimovic, 2010a). The decisions need a careful evaluation of the best capital mix combinations. It entails how best to combine loans and owner 's equity required to finance firm activities. This subject has elicited more debates in the academia based on the notion that getting the correct capital structure will positively influence firm's performance (Ayyagari, Demirgüç-Kunt & Maksimovic, 2010a; Forte et al., 2013).

Various theories and empirical studies have paid attention to the relationship between capital of the enterprise and its financial performance. For instance, capital structure theory proposed by Salteh et. al. (2009) observes no relationship between the two variables among firms in a perfectly competitive market. However, this argument assumes of no information asymmetry in a perfectly competitive market which is very unrealistic. Empirically, there are those who have established negative relationship between capital structure and enterprise financial performance (Chen, 2004; Karadeniz et al., 2009; Onaolapo, 2010; Mwangi, 2015) and others who find a positive relationship (Salteh et. Al.,2009; Maigua, 2014). This study is based on trade-off theory, Myers (1984), Modigliani and Miller (1958) and Pecking Order Theory by Mayers and Majluf (1984). Trade-off theory states that every firm has a suitable capital structure which could be realized by balancing owners and borrowed capital. Modigliani and Miller on their part argued for non-existence of a relationship between enterprise capital structure and the value of a firm. Lastly, proponents of Pecking Order theory observe that firms follow a hierarchical order followed in making financing decisions.

Literature has shown that most Small and Medium Enterprise (SMEs) across the world, and developing countries like Kenya in particular, encounter greater financial difficulties as compared to large and well-established companies (Ayyagari, Demirgüç-Kunt & Maksimovic, 2010a & Forte et al., 2013). Some authors have established that SMEs use mostly internal finances relative to big companies which mostly seek external funding (Olwale & Asah, 2011). This is likely to limit the size of the firm, and therefore, its financial performance.

1.1.1 Capital Structure

Capital structure concerns the decisions to do with debts and firm equity. Studies have defined capital structure in different ways. For instance, Schnabel (1992) defined capital structure broadly as the use of both formal and informal debt. On their part, Muiru and Kamua (2014) defined capital structure as the leverage which they measured by dividing total debts with total assets of the firm. On the other hand, capital structure is defined by Onaolapo (2010) as the manner in which enterprises employ debts and equity in financing their operations. This is a financial strategy which comprises of usage of loans to realize maximum returns on investment.

Capital structure explains the link between owners' equity and borrowed funds which make up a company's financing mix. It has also been defined as the use of a third party's funds to finance the operations of an organization which could lead to increase in profits and taxes as well (Kariuki, 2017). There are various forms of debts which include: bonds issuance or long-term notes payable. On the other hand, owner's equity might take the form of common stock which might have no preferences, or preference shares and undistributed earnings (Harris & Raviv, 1991).

Financing an enterprise through borrowed funds can both be advantageous and disadvantageous to both the firm and the economy in general (Forte et al., 2013). For instance,

debt financing can result to tax shield and decrease of cash flow challenges by improving managerial behaviour. Contrastingly, debt financing involves transaction costs such as agency and bankruptcy bring disagreements between shareholders and debtors (Farah & Nina, 2016). It is therefore imperative for managers to try to balance the costs and benefits of debt financing during decision making to enhance performance. Most studies have measured debt which compares total debt and total shareholders' equity of the firm (Forte et al., 2013; and Kariuki, 2017). A low ration is an indication of less dependence on borrowed funds.

1.1.2 Profitability of Firms

Profitability can be explained as the amount of money which the firm produces as a result of utilization of its resources (Farah & Nina, 2016). The aim of any business entity is to maximize profits. Profitability is an indication of the firm's ability to generate earnings from the use of assets within a given time period. It encompasses the capacity to generate benefits from business activities of the firm. Generally, profit is the reward that an entrepreneur receives for the investment and it is the main motivator for engaging in business operations. In addition, firms use profit as a performance indicator (Onaolapo, 2010). Profit is measured by subtracting total costs from total revenue.

According to Anene (2014), profits are the main purpose of establishment of business enterprises. Profit generating firm portrays efficiency in management (Muya & Gathogo, 2016). This means that firms could reap a lot of gains associated with high levels of profits. Profit is a necessity for the long-term survival of a business enterprise. This is because, investors are induced to invest in the firm due to profits and therefore, many firms put in relentless efforts to enhance their profits and spend innumerable hours in strategizing on how to cut down operation costs and ways of increasing sales (Muya & Gathogo, 2016).

1.1.3 Profitability and Capital Structure of Enterprises

There is evidence that firm's combination of borrowed capital and owner's equity is related to its profitability, and thus, those entrusted to make financial decisions, should focus more on how to realize the most effective debt/equity ratio. San and Heng (2011) noted that the optimal leverage mix is realized when costs of securing both loans and owner's equity are minimized. This will ensure higher profit margins. More efficient companies are in advantageous position to make compromises regarding borrowed funds and equity. This agrees with the philosophy of trade off that asserts, businesses can alter their structures either up or down as they try to achieve efficiency in growth (San & Heng, 2011).

There is an attendant tax benefit associated with debt financing. Modigliani and Miller (1963) argued that a business entity will achieve upward trajectory at that moment when tax benefits enjoyed by the firm on debt financing exceeds bankruptcy costs. In equity financing, dividend payable is not a deductible cost and could therefore make equity financing more enticing (Pandey, 2002). Financial leverage affects business performance when determined through return on investment and assets (Baker, 2002). An increase on leverage leads to an increase in company's savings on taxes up to a certain level beyond which more debts reduces profitability due agency costs. Debt influences quality of investment opportunities in the sense that managers are forced to invest in those projects which bring more value to the shareholders which ultimately reduces agency costs and hence, more profits (Jensen & Meckling, 1984).

1.1.4 Small and Medium Enterprises in Nairobi County

Micro and Small enterprise Act of 2012 defines an SME as a firm less than 100 permanent employees (GoK, 2012b). Specifically, a small enterprise has full-time employees between 10-49 while, a medium enterprise has 50-99 employees. SMEs are very key towards Kenya's growth and development. This is best explained by numerous job opportunities and wealth

created by SMEs(GoK, 2005). This arises from the observation that during the early stages of economic development, these enterprises manifest unique opportunities for wealth and employment creation. There is about 1.3 million SMEs in Kenya, the bulk of which are based in Nairobi (African Review Business Technology (ARBT), 2018). In Four years' time, the number of people employed by the SMEs was about 5.1 million people (GoK, 2003) and in 2015, 15,160.8 people were employed (Government of Kenya & Kenya National Bureau of Statistics (KNBS), 2016). Moreover, this sector has enhanced entrepreneurial culture. Therefore, this sector is very critical for Kenya's growth and development.

SMEs in Kenya, just like those in other jurisdictions, encounter difficulties in rising additional capital to finance their operations. The reason is that some of them are incapable of securing loans due to lack of collateral (Mwangi and Birundu, 2015). However, for those that are able to borrow money from financial institutions, it still remains unclear on factors which explain such decisions and more specifically, their capital structure and what informs it. More importantly, the debate on the effect of capital structure and profitability among the SMEs in Nairobi county and Kenya by extension, is inconclusive as explained by the mixed findings and which are also limited.

1.2 Research Problem

Globally, there is a lot of debate in the academia with regard to the relationship between capital structure and the financial performance of enterprises. It has been theorised that finding the optimal combination of borrowed funds and owners' equity, is a key decision because, it affects the performance of firms. Financing business operations through owners' equity can sometimes be difficult especially in times of financial crisis and therefore, debt financing becomes inevitable. In addition, Modigliani and Miller (1963) idea of tax benefits associated with debt financing is an indication of the effect of debts to the performance of a firm.

SMEs play a significant role towards Kenya's economic growth which cannot be gainsaid. They play an important part in terms of employment creation, production, contribution to export and facilitation of equal distribution of resources, especially in the wake of numerous socioeconomic challenges facing the country. For SMEs to effectively promote economic development, it is important for them to enhance growth and graduate relatively. It has been hypothesised that capital structure is a key determinant of firm financial performance and hence the link between these two variables cannot be ignored. Studies conducted in Kenya and other countries have yielded contradictory results. For instance, studies by Berger (1995), Iorpev and Kwanum (2012) and Kariuki (2017) have reported significant and positive relationship, while Xue and Shuai (2013), Arimi (2010), Abor (2005) have found a negative link. In addition, other studies found no statistical relationship (Mohoho, 2013; Njagi, 2013; Mwangi & Birundu, 2015). Furthermore, a few studies conducted in Kenya especially by Mohoho (2013), Mwangi and Birundu (2015) and Kariuki (2017) employed OLS to but failed to control for autocorrelation which could have compromised the findings. Moreover, studies that have been undertaken paid attention on the link between firm financial performance and capital structure among large firms. Arising from these gaps, this study undertook to conduct a robust investigation on this relationship focusing on SMES in Nairobi county by addressing the methodology anomalies of the past studies. The study sought to answer the question, "what is the relationship between SMEs profits and capital structure in Nairobi county?"

1.3 Objective of the Study

To investigate the relationship between profits and capital structure for Small and Medium Enterprises in Nairobi county.

1.4 Value of the Study

Given the mixed findings and the limited literature on profitability-SMES capital structure relationship in Kenya, this study attempted to fill these gaps by conducting a robust

investigation. The study will in addition to providing clear empirical evidence, seek to provide evidence or test the theories (Trade-off, Modigliani & Miller and Pecking order theory) proposed to guide the study.

In addition, since SMEs are critical in the Kenya's economy, recommendations of this study could help in drafting policies to boost the operations of SMEs and their performance as well. Such policies could specifically provide guidelines on the best leverage mix for SMEs to enhance their growth and development.

Furthermore, the results of the study could elicit a debate in the academic fora. This is likely to act as a spring board upon which further studies will be undertaken. Moreover, the Kenyan society is likely to benefit in general. This is because, policies emanating from the study could lead to growth of these SMEs which would have a ripple effect on the entire economy.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter contains literature related to the topic of this study. Both theoretical and empirical findings are discussed. In addition, determinants of capital structure, conceptual framework and summary of literature is presented.

2.2 Theoretical Review

Theories related to the study are reviewed here. There are several theories which have attempted to explain how firms determine capital structure as well as the link between capital structure and firm financial performance. Key among these theories for which the study relied on include: Trade-off theory, Modigliani & Miller theory and Pecking order theory.

2.2.1 Trade-off-Theory

The proponent of the trade-off theory, Myers (1984), argues that every enterprise has an ideal capital structure level which can be arrived at by striking a balance between firm costs and benefits derived from equity. Therefore, according to this theory, a firm makes a choice between how much a loan capital and how much equity capital to have in its capital structure through balancing of the costs and benefits of each source of capital. In their contribution to the Trade-off-theory, Karadeniz et al. (2012) observed that managers weigh the advantages of financing the firm through debts against the costs associated with obtaining loans from financial institutions. While borrowing costs comprises of bankruptcy costs and payments of interest rates, the benefits of borrowing on the other hand includes: discipline instilled in the management and tax allowance on the payment of interest rates.

According to Gill et al. (2012), as a firm increases loans in its capital structure, the marginal cost related to a rise in debt increases but, the marginal cost related to debt benefits declines until an optimal point is achieved. Beyond this point, the theory states that marginal costs

exceed marginal benefits and this leads to reduced firm value. Therefore, the firm should be at an optimal financial structure so as to improve its return on investment according to the theory. Meyer extends the argument by stating that business entities with more physical assets should maintain high leverage ratio while, firms with more intangible assets should rely more on equity capital because they are likely to lose their value should a liquidation situation arise. This theory was instrumental in exploring debt/equity ratio of SMEs and how this related to the value of profit situation of the firm.

2.2.2 Modigliani and Miller Theory

This theory was proposed by Modigliani and Miller (1958). The theory argues that there is no relationship between company capital structure and the value of the firm. This means that debt/equity ratio is not relevant when it comes to the determination of the firm values (real assets). Contributing on this theory, Addae et al. (2012) criticized Modigliani and Miller of assuming that financing decisions of companies have nothing to do with their value, capital cost and firm profitability. However, this theory was criticized because it had assumed a world that is free of taxes which was deemed unrealistic (Gill et al., 2012).

The criticism of the theory led to its revision to incorporate tax component (Modigliani & Miller, 1963). One of the most important characteristic of tax policy is that interest is a tax-deductible outlay. Brigham and Ehrhardt (2005) supported the integration of tax into the theory. According Brigham and Ehrhardt, levered firms are highly valued as compared to unlevered ones. The reason is because, levered firms enjoy tax advantage on debts which explains an increase on returns to equity and therefore, shareholder's value. This theory is ideal for this study in examining the relationship between the value of an SME and its capital structure. Specifically, the study will employ the theory in comparison between the real value of levered and unlevered SMEs as a way of testing Brigham and Ehrhardt hypothesis. The study

therefore, employed this theory to find out whether SMEs with loans have more value both in terms of assets and profitability than those without debts.

2.1.3 Pecking Order Theory

This theory was pioneered by Myers and Majluf (1984). It is among the most influential theories with regard to determinants of capital structure. The theory argued that there is a hierarchical order followed in making financing decisions for firms. The first priority for firm financing is the internal sources, while debt to equity comes second. To realize more profit, the theory argues that an entrepreneur has to avoid transaction costs such as those emanating from adverse selection and information asymmetry. The basic principles of the theory convincingly show how it might apply naturally to SMEs (Schnabel, 1992). To begin with, the argument that decisions are always made in the best interest of the of the shareholders.

Secondly, SMEs find it difficult to access some sources of business financing like bonds. These considerations, coupled with the advantages of remaining independent, could explain the reason why some business managers would always want to raise finances internally. In other cases, managers might want to preserve their rights over control of the business and to want to avoid diluting firm capital. For instance, in the case of family business, the manager could want to slow down growth rather than risking the loss of control. The theory was therefore, instrumental in understanding how financing decisions of SMEs affect their profitability.

2.3 Determinants of Firm Profitability

Literature presents various factors which explain firm capital structure decisions. Key among these factors include: firm growth, age, size of the firm, capital structure and firm asset value.

2.3.1 Growth of the Firm

Existing literature holds that as the firm expands its operation, it is expected that this will have some effects on its financing options with more emphasis on debt financing and profitability as well (Harris & Raviv, 2012). This argument is shared by Myer (1984) in the Pecking Order theory which advocates for positive link between firm growth and profitability. This brings out the argument that enterprises which invests heavily for future growth might be able to make more profits than those operating on a low scale. This implies a positive relationship between firm growth and profitability. A rise in firm's sales value has been used to measure the growth of a firm (Ellilli & Farouk, 2011).

2.3.2 Firm Size

The relationship between firm profitability and firm size has been adduced in literature. For instance, Mohoho (2013) argue that bigger firms can enjoy economies of scale which ultimately leads to more profits. Some of the advantages of the economies of scale are the discounts received when purchasing in large quantities, the ease of obtaining loan from financial institutions for further business expansions among others. This also lowers the costs of operations which leads to competitive pricing and hence, a large market size. Two measures of firm size have been employed in different studies. While some studies use total assets to determine firm size, other studies employ World Bank recommended measure of firm size, the number of full-time employees (World Bank, 2017). Palacín-Sánchez et al. (2013) used firm assets as a measure of firm size in study which found that firm's asset structure, age, profitability and size were all positively related to profitability.

2.3.3 Firm Age

Some studies have found that the age of a firm is associated profitability of firms around the world. However, a review of these studies shows that the effect of firm age on profits is unclear because, some firms find a positive relationship (see Saarani & Shahadan, 2012) for, while

others like Forte et al. (2013) have revealed firm profitability is negatively associated with the age. Firms with many years are more likely to have accumulated more experience in business operations which are likely to increase profits (Forte et al., 2013). Mostly, smaller firms receive low ratings in terms of credit worthiness by most financial institutions. This is based on the fact that they have low asset base and are also less profitable.

2.3.4 Firm Capital Structure

Various studies have linked firm profit to capital structure. However, the existing empirical evidence indicates mixed results. For example, Muya & Gathogo (2016) for the case of the Brazilian SMEs established a negative link between firm profits and capital structure. This observation agrees with the pecking order theory that argue that firms tend to finance their activities with loans only after exhausting their internal sources. This implies that firm profitability can be influenced by its capital structure. Firms which have more loans in their capital structure are likely to make less profits due to the cost of those loans in terms of interest rates (Shuai, 2013). It is therefore expected that firm profitability is negatively correlated to capital structure especially for SMEs. Net income is the widely used measure on profits where operating expense are subtracted from gross revenue (Forte et al., 2013; Xue & Shuai, 2013).

2.3.5 Firm assets

Empirical literature has also delved into the relationship between firm assets its profitability, where almost all studies seem to agree on the existence of a positive relationship and hence implying, assets increases firm's profits. A study by Kamau and Mwangi (2015), established that assets influences firm's profits positively. In addition, the study argued that the firm's asset structure matters a lot when it comes to financing decisions. In a study which applied OLS regressions on survey data for 270 SMEs, the study observed that firm's tangible assets are positively related to capital structure.

Firms which have more valuable tangible assets, tend to borrow more debts. This implies that availability of tangible assets has a role to play regarding firm financing decisions. Borrowing costs can be prohibitively high for firms with fewer tangible assets (collaterals), and therefore, their availability increases chances of firm borrowing.

2.4 Empirical Literature

This section examines previous studies which attempt to link profitability and capital structure. Globally, the link between profitability and capital structure of firms have been examined by various studies. To begin with, Xue and Shuai (2013) while conducting a study in Sweden, reported that firm capital structure was negatively associated with profitability. This study covered before the global financial crisis and the period after and observed that debt-equity ratio was much high before the crisis and gradually normalized after the crisis (after three years). The study applied Ordinary Least Square (OLS) on the firm level panel data. Based on the study, the methodology could not establish correlation among explanatory variables was controlled for since, its presence could have compromised the estimates. This study will fill this gap by controlling for multicollinearity problem.

Contrastingly, a study by Berger (1995) on the link between firm leverage and profitability argued that the two variables were positive and significant association. The study noted that making of more profits by firms increases their credit worthiness and therefore, more profitable enterprises have a good chance to secure loans from financial institutions. indeed, the study revealed that, more profitable enterprises had a high debt-equity ratio. Similar arguments were advanced by Abor (2005) who noted that more profitable of bigger enterprise have tax shields and low risk of bankruptcy. However, Abor (2005) noted a significant and negative link between the two variables among Ghanaian firms.

In South Africa, Mohoho (2013) investigated the same relationship and discovered that firm profitability is related to firm value in terms of assets. However, this study had only focused on companies operating at the stock market using data which covered between (2002-2011), that is, ten years. Using OLS method, this study reported that there was no statistical linkage between firm profitability and leverage as well as the value of the firm. The study measured the value of the firm using tangible assets such as cash and fixed assets. Had the value of intangible assets like patents been included, the results could have been different. In addition, the study had focused on firm value and not profit. This study seeks to investigate how firm profits are related with financing sources. The study will use sales value less production expenses to measure profits.

A study by Iorpev and Kwanum (2012) on how capital structure influences performance of manufacturing firms in Nigeria reveal that debt to asset ratio, a proxy of capital structure was positively associated with Return on Assets (ROA) and negatively related to profit margin. This study was conducted among 15 firms listed at the Nigerian Stock Exchange and applied multiple regressions on a five-year panel data (2005-2009). Findings of this study show no significant relationship. Iorpev and Kwanum study could have suffered from the limitation of capital structure measurement (debt/asset). It is not easy to get the value of all firm assets and in addition, the conventional measure of capital structure which has been successfully used by many studies is the ratio of debt to equity for which this study proposes to use.

Using firms listed at NSE, Arimi (2010) observed a negative link between capital structure and financial performance of a firm. These results implied that increased borrowing by business enterprises, would basically lead to a reduction in firm profitability. The study which had focussed on industrial and allied firms, concluded that most firms would find it inappropriate for debt financing when ROA is on the increase. The study used a four period panel data with OLS regression analysis and ROA as a measure of financial well-being. ROA cannot

adequately capture the financial wellbeing of the firm. This is because, ROA is largely an indicator of firm efficiency in the utilization of firm assets due to the fact that it is computed as income divided total assets. Could the study had used profit as excess of revenue over expenses, the results could have been different.

Still on Kenya, Njagi (2013) examined the link between firm profitability and leverage of commercial banks. A total of 35 banks were incorporated in a study that utilized secondary data between 2008 -2012. The study employed OLS regression method to analyse data. Findings argued that there was no relationship or the capital structure did not explain firm profitability. From the study, it was not clear on how the problem of correlation of independent variables was controlled. Failure to account for this problem could have compromised the estimated results. In addition, just like Arimi (2010), Kuria study used ROA as a proxy for financial performance. Contrastingly, a study by Kariuki (2017) of firms listed at NSE found a significant relationship for the case of Kenya. OLS regression was applied on secondary data for the period of six years (2008-2013) of 40 firms.

In another recent study on the relationship between SMEs and financial performance of SMEs in Thika, Mwangi and Birundu (2015) find that there is no significant relationship. They used to employ descriptive study design and multiple regression method to analyse data. In addition, the study argued that both tangible assets and ROA did not have a significant relationship with the firm financial performance.

2.5 Summary of Empirical Review

Various studies have examined the concept of the link between profitability and capital structure of firms locally and internationally in both developed and developing countries. These reviewed studies indicate mixed findings. While some studies found a positive relationship between firm capital structure and profits (Berger, 1995, Iorpev and Kwanum, 2012), Kariuki,

2017), other studies have established a negative relationship (Xue & Shuai, 2013, Arimi, 2010, Abor, 2005) and still, other authors have reported that there is no statistical relationship between capital structure and profitability (Mohoho, 2013, Njagi, 2013, Mwangi & Birundu, 2015).

In addition, some of these studies employed OLS to investigate the effect of capital structure on firm profitability but, failed to control for autocorrelation which could have compromised the findings (see Xue and Shuai, 2013, Mohoho, 2013). Based on these gaps, the study attempted to fill them by conducting a robust analysis using World Bank Enterprise Survey of 2013.

2.6 Conceptual framework

A conceptual framework is a presentation of how dependent variable is related to independent variables. In this study, firm profit is the dependent variable, while capital structure, growth of the firm, firm size, age and asset value of the firm are the independent variables. Figure 2.1 indicates this association.

Independent variables

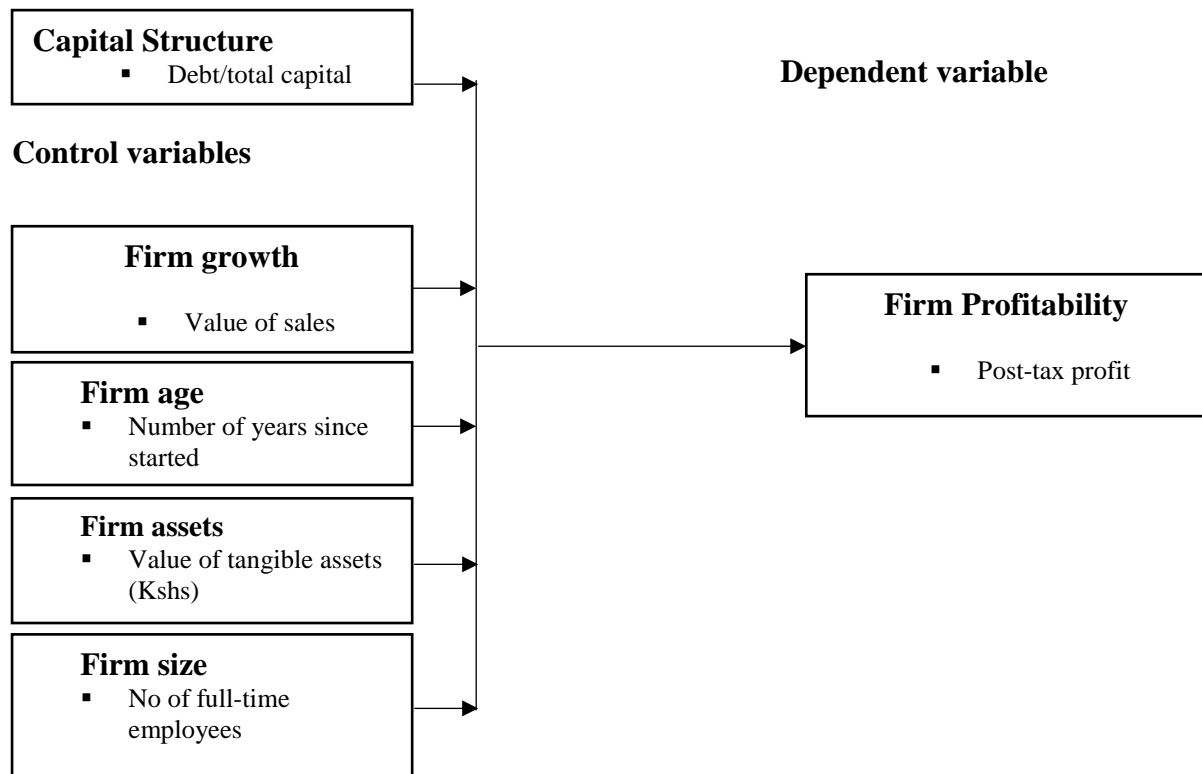


Figure 2.1: Conceptual Framework

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter comprises of research methodology. This includes study design, target population, sample and data collection. In addition, the study presents analytical model, operationalization of variables and data analysis.

3.2 Research Design

The study employed a correlation survey design to investigate the relationship between profitability and capital structure among SMEs in Kenya. This design enabled the study to understand both the nature and direction of the relationships among dependent and independent variables within the analytical model.

3.3 Target Population

All SMEs in Nairobi County are a target for the study. The study determines an SME based on the number of full-time employees as was recommended by the World Bank (2017). World bank argued that SMEs are firms with below 99 full-time employees. The current World Bank Enterprise survey of 2013, covered a total of 325 SMEs in Nairobi county for which this study shall use as a sampling frame

3.4 Sample

A sample refers to units of analysis selected to represent the entire population for a study. Sampling is normally conducted in a study where the population is too large to be covered by the researcher because of distance and cost implications. From the population of 325 firms, the study used Yamane (1967) formula to determine the sample size. The formulae expressed as:

$n_0 = \frac{N}{1+N(p)^2}$, where, N=size of the target population, n_0 is the sample size and p is the margin of error (assumed to be 5%) at 95% confidence level. In the case, the sample size for the study is give as:

$n_0 = \frac{325}{1+325(0.05)^2} = 179$. Therefore, the study included 179 SMEs in the survey. These SMEs were randomly selected. Random selection ensured that all SMEs have equal opportunities for selection and hence, eliminating selection bias.

3.5 Data Collection

The study used secondary, World Bank enterprise survey (ES) data for 2013. This is the latest dataset on Kenya. These data are collected from key firms worldwide using standard instruments. The 2013 data for Kenya has 781 firm-level observations. Enterprise survey of 2013 covered a total of 325 SMEs in Nairobi county. This data contains all variables of interest which includes: year of firm's establishment, capital, assets, loans, expenses, revenues, staff among others.

3.6 Analytical Model

Based on the conceptual framework (see figure 2.1), the study models an equation where firm profitability is the dependent variable. The model seeks to establish the relationship between firm profits and capital structure according to the research objective. The model is in the form of:

$$y = \beta X_i + \varepsilon_i \dots \dots \dots (1)$$

Where y refers to firm's profits and total equity, β are the regression coefficients, x_i represents explanatory variables and ε_i is the estimation error. Model (1) can further be expanded as:

$$(fprofit)_i = \alpha_0 + \beta_1 fsize_i + \beta_2 (fassets)_i + \beta_3 (fage)_i + \beta_4 (leverage)_i + \beta_5 (fgrowth)_i + \varepsilon_i \dots \dots \dots (2)$$

Where leverage is the proportion of debt to total capital by any given firm i.

α is the intercept of the regression model, $\beta_1 - \beta_4$ are the slope coefficients for the independent variables, and ε is the error term.

3.6.1 Operationalisation and Measurement of Variables

Table 3.1 presents variable operationalization

Variable	Type	Operationalization	Measurement	Hypothesized direction
Profitability (profit)	Dependent	Average annual sales less average annual expenses	Value (Kshs)	Negative
Capital structure(leverage)	Independent	Leverage	Ratio (debt/total equity)	none
Firm size (fsize)	Independent	Average number of employees for the last 12 months	Ratio	positive
Firm age (fage)	Independent	Years in operation	Number of years	Negative curvilinear
Firm assets (fassets)	Independent	Total (Current account Buildings Machinery Motor vehicles Land)	Natural log of total assets in Kshs.	positive
Firm growth(fgrowth)		Value of sales	Value of Sales (Kshs)	negative

3.6.2 Data Analysis and presentation

Data analysis was done through both descriptive and inferential statistics. Descriptive statistics such as means, standard deviations, minimum and maximum were generated. On the other hand, regression and correlation analysis were conducted for inferential purposes using Stata version 14.0 software with the aid of OLS. Further, the results are presented using tables, percentages and graphs.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.1 Introduction

The role of SMEs towards economic growth and development on the wider perspective and poverty alleviation by extension cannot be refuted. This chapter presents findings of the study and interpretation of these findings. Both descriptive and regression analyses were conducted. There are two sections in this chapter. There is section 1 which presents descriptive statistics and second 2 which analyses regression findings based on the study objective.

4.2 Descriptive Statistics

Key descriptive statistics considered by the study includes the characteristics of the SMEs covered in this study. These included: firm size, profitability, firm, age, legal status, management by gender and sources of finance.

4.2.1 Sectorial Analysis

With regard to sectorial analysis, the study sought to analyse the representation of sectors in the sample. Table 4.1 presents the results for this analysis. These statistics reveal that most of the SMEs, 26 (14.52%) were in the retail sector, followed by those operating in the food sector and 11.17%. In addition, 19 SMEs representing 10.61% are in the wholesale, while hotel and restaurant sector was represented by 14 SMEs which accounted for 7.82%.

Table 4.1: Sectors of Nairobi County

Industry Sampling Sector	Frequency	Percent
Food	20	11.17318
Textiles	9	5.027933
Garments	10	5.586592
Leather	3	1.675978
Wood	3	1.675978
Paper	2	1.117318
Publishing, printing, and Recorded media	4	2.234637
Refined petroleum product	1	0.558659
Chemicals	13	7.26257
Plastics & rubber	7	3.910615
Non-metallic mineral products	5	2.793296
Basic metals	1	0.558659
Fabricated metal products	5	2.793296
Machinery and equipment	6	3.351955
Electronics	4	2.234637
Transport machines	4	2.234637
Furniture	5	2.793296
Construction	2	1.117318
Services of motor vehicles	11	6.145251
Wholesale	19	10.61453
Retail	26	14.52514
Hotel and restaurants	14	7.821229
Transport	3	1.675978
Information Technology	2	1.117318
Total	179	100

Source: Computed from Survey Data (2013)

The other sectors which had relatively larger representation in the sample were chemicals at 7.26%, motor vehicle services at 6.14% and garments at 5.59%. In addition, textile, plastics & rubber, fabricated metal products and furniture sectors accounted for 5.03%, 3.9%, 2.79% and 2.79% respectively. Generally, most SMEs in Nairobi county operate largely in the manufacturing sector.

4.2.2 SMEs Legal Status

Table 4.2 presents a summary of the legal status of SMEs surveyed in Nairobi county.

Table 4.2: Legal Status of SMEs

Legal Status	Frequency	Percent
Shareholding company with shares trade	6	3.351955
Shareholding company with non-traded shares	24	13.40782
Sole proprietorship	48	26.81564
Partnership	25	13.96648
Limited partnership	74	41.34078
Other	2	1.117318
Total	179	100

Source: Computed from Survey Data (2013)

These statistics reveal that majority of the SMEs in Nairobi are limited partnership kind of business (41.34%), followed by sole proprietors with a representation of 48 (26.81%). This is followed by partnerships at 13.97%, and Shareholding companies with non-traded shares at 13.41%. Shareholding companies with shares traded shares were represented by 6 SMEs at 3.35% while other types of businesses accounted for 1.12%.

4.2.3 Sources of Finance

The study also sought to establish sources of finance in Nairobi County. The results of these analyses are presented in Table 4.3

Table 1.3: SMEs Financial Sources

Source of capital	Obs	Mean
Capital from Internal sources	179	30.12
Loans from Banks	179	14.43
Loans from non-Banks	179	0.62
Credit purchases	179	6.6
Other sources	179	1.48

Source: Computed from Survey Data (2013)

Results in Table 4.3 indicate that most SMEs in Nairobi county use internally generated finances (retained earnings and owners shares) with the mean of 30.12, followed by loans from commercial banks with the mean of 14.43. In addition, these statistics show that, credit purchases recorded a mean 6.6. Furthermore, other financial sources including contributions from family and relatives had a mean of 1.48. It is surprising to note that most SMEs in Nairobi County obtain loans from formal financial institutions than non-financial sources.

4.2.4 Summary Descriptive Statistics

In this part, the study presents means, standard deviations, maximum and minimum values of variables of used in the study. These are displayed in Table 4.4.

Table 4.4: Means, Standard deviation, Min and Max

Variable	Obs	Mean	Std. Dev.	Min	Max
profit	179	1.16	6.70	0.00	84.00
leverage	179	.019	.15	1.38	1.19
fsize	179	16.19	5.79	0.00	25.15
fage	179	1.93	10.42	9.00	100.00
tassests	179	.144	1.11	18.00	16.5
equity	179	.297	4.72	63.00	85.00
sales	179	1.17	6.86	9.00	84.00

Source: Computed from Survey Data (2013)

Statistics presented in table 4.4 show that profits had a mean of 1.16 million Kshs with a standard deviation of 6.70 million Kshs and a maximum of 84 million Kshs. With regard to leverage (debt/equity) ratio, the mean was 0.019 with a standard deviation of 0.15 and a maximum of 1.19. Concerning the size of SMEs as captured by the number of permanent employees, the mean was 16.19 with a standard deviation of 5.79, and a maximum of 25. This means that from all the SMEs surveyed, the largest had 25 permanent employees.

Statistics on age of the firm indicates that the oldest SME had 100 of existed while the youngest had a total of 9 years of age. The mean of SMEs age was 1.93 years. With regard to SMEs assets, the mean was 0.144 million Kshs with a standard deviation of 1.11 million Kshs and a maximum of 16.5 million Kshs. Findings on SMEs equity in Nairobi county show that the mean was 0.297 million Kshs with a standard deviation of 4.72 million Kshs, and it oscillated between a minimum of 63 million Kshs and a maximum of 85 million Kshs. Finally, the study has shown that mean sales for these SMEs was 1.17 million Kshs with a standard deviation of 6.86 million Kshs.

4.2.5 Correlation Analyses

The study sought to find out the correlation between the dependent variable (profit) and the independent variables especially, the capital structure (leverage). Table 4.5 displays these results.

Table 4.5: Correlation Results

	profit	leverage	fsize	fage	tassests	equity	sales
profit	1.0000						
leverage	-0.0190	1.0000					
fsize	0.2195	-0.0607	1.0000				
fage	0.0026	-0.0703	0.1622	1.0000			
tassests	0.6060	-0.0139	0.1482	0.0548	1.0000		
equity	0.5118	-0.0077	0.0902	0.0338	0.0156	1.0000	
fgrowth	1.0000	-0.0190	0.2201	0.0026	0.6060	0.5118	1.0000

Source: Computed from Survey Data (2013)

The correlation results in Table 4.5 show that SMEs profits and capital structure are negatively correlated. This implies that any change in firm capital structure has a negative implication on SMEs profits. On the other hand, these results indicate that SMEs profits are positively correlated with firm size, firm age, firm assets, equity and annual sales.

4.3 Regression Analysis

The purpose of the study was to investigate the relationship between profitability of the SMES and their capital structure. The study focused on the SMEs in Nairobi county. A part from capital structure (leverage) as an explanatory variable, other variables such as age, firm size, firm growth, and firm assets were incorporated in the study as control variables. To conduct estimation of the coefficients, the study employed Ordinary Least Square (OLS) method. OLS regression shows both the direction and the level of significance. In a regression, there are three levels of significance, that is, 1%, 5% and 10% and therefore, if P-value a variable is found less than either of the three, then that variable is termed significant. After conducting an OLS regression, a post-estimation diagnosis was conducted to find out if the regression suffered from multicollinearity, and heteroscedasticity. If detected, this could be a major problem which could lead to wrong interpretation of the results and hence wrong inferences.

4.3.1 Multi-collinearity Test

This is a problem which occurs when at least two independent variables are correlated. The test is conducted with the aid of Variance Inflation Factors (VIF). The interpretation of this test is that, a regression is said to be free from multicollinearity if VIF is less than 10 and $1/VIF$ is greater than 0.1. Summary findings on this are presented in Table 4.6.

Table 4.6: Variable Inflation Factors

Variable	VIF	1/VIF
tassests	1.18	0.848712
sales	1.15	0.871921
age	1.12	0.893111
leverage	1.11	0.903897
fsize	1.07	0.936591
Mean VIF	1.12	

Source: Computed from Survey Data (2013)

The results in Table 4.6 indicates the absence of multicollinearity in the OLS model. This is because, VIF for all variables is less than 10 and 1/VIF value is greater than 0.1. In addition, the mean VIF is less than 10. This implies that the OLS regression was free from autocorrelation problem.

4.3.2 Heteroscedasticity Test

This problem occurs when standard deviations differ across observations. Heteroscedasticity can also lead to invalid estimates and hence wrong inferences. For the results to be unbiased in a regression, there must be constant variances across all observations. Null hypothesis of the test is that all observations have constant variances, interpreted as lack of heteroscedasticity.

Table 4.7 presents summary result for this test.

Table 4.7: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

chi2(1) = 1.64

Prob > chi2 = 0.2000

Source: Computed from World Bank Enterprise Survey (2013)

The findings of the test show that there is no heteroscedasticity in the regression equation because the study accepted the null hypothesis at P-value which is more than 0.05. Thus, the analysis did not suffer from heteroscedasticity.

4.4 Regression Results

Table 4.8 presents the results of OLS regression with firm profits as the dependent variable.

Table 4. 8: OLS Results

profit	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
leverage	.0013328	.0108877	5.12	0.003	-.0200516 .0227171
fsize	.1239424	.0562414	2.20	0.028	.0134796 .2344051
growth	.9837279	.0091779	107.18	0.000	.9657018 1.001754
fage	.0247462	.0956142	0.26	0.796	-.1630482 .2125406
fassets	.0172978	.0076029	2.28	0.023	.002365 .0322306
_cons	-.401262	.3075082	-1.30	0.192	-1.005234 .2027098
Number of Observations		179			
Prob > F		0.000			
R-squared		0.9587			

Source: Computed from World Bank Enterprise Survey (2013)

Null hypothesis of the OLS model states that all the coefficients of the model are different from zero (0). According to the results in Table 4.8, the OLS model was well fitted based on the fact that the probability F-statistic (Prob > F) is less than 5% (or 95% confidence interval. This also indicates the acceptance of the null hypothesis. The R-squared estimate shows that determinants of profitability among SMEs explain the dependent variable by 95.87%. The estimated profit equation 1 model equation 2 is therefore, expressed as:

$$(fprofit)_i = \alpha_0 + 0.1239424 (fsize)_i + 0.0172978 (fassets)_i + 0.0247462 (fage)_i + 0.0013328 (leverage)_i + 0.9837279 (fgrowth)_i$$

4.5 Discussion

The results on the effect of capital structure on firm profitability indicate that, there is a positive relationship between profitability and leverage (capital structure). These findings are also significant at 5% level given that the P-value is 0.003. However, the impact of capital structure on SMEs profitability is very low. The coefficient of capital structure (0.0013328), indicate that a unit change in capital structure leads to 0.13% increase in the profits of SMEs. These findings imply that higher capital structure ratio increases the profits of SMEs in Nairobi County. This means that SMEs in Nairobi borrow loans to expand their businesses or enhance their operation which in turn, generates additional profits. More borrowing could also increase investment and therefore, help to generate economies of scale and hence more profits.

With regard to the other independent variables, the study has established that firm size explains profits positively. In addition, this variable was significant at 5% given the P-value of 0.028. concerning the impact, the coefficient of firm size, 0.1239424 indicate that, a unit increase in the firm size as measured by the number of full-time employees, leads to 12.39% increase in SMEs profits. This means that employing an addition full-time employee in the SMEs, makes these firms more productive. A study by Moholho (2013) found similar results. This study reported that larger firms enjoy economies of scale which ultimately leads to more profits.

On SMEs growth, the study has established that profits and the growth of firms are positively correlated. The coefficient of growth variable was highly significant at 1% level. In addition, the size of the coefficient, .9837279, means that a unit change in firm growth leads to an increase in SME profits by 98.37%. This shows that the growth of the SMEs as proxied by sales, is a key determinant of their profitability. These findings are supported by various studies. For example, Harris & Raviv (2012) found that expansion of firm's activities is anticipated to positively impact profits. In addition, Myer (1984) in the Pecking Order theory held that there was a positive relationship between firm growth and profitability. Furthermore, an increase in the sales volume has been found to increase profitability (Ellilli & Farouk, 2011).

Concerning the effect of SMEs tangible assets on the profits, the study found a positive and a significant relationship between assets and profits. This is informed by the positive coefficient (0.0172978) and a p-value of 0.023 (less than 5%). This finding also indicates that the effect of firm assets on profits is weak because, an increase in a unit of assets, leads to an increase in SMEs profits by 1.73%. SMEs could use assets to secure loans from financial institutions which they could then, invested to general more income. More assets could also make the operations of SMEs much easier, and therefore, more profits.

Finally, the study has found that the age of the SME was positively related to firm profitability. This means that as the SMEs increases in age, its profit margin increase as well. This implies that older SMEs are more profitable than younger ones. However, the effect of age on SMEs profits was not significant given the P-value of 0.796 which is greater than all the three levels of significance (1%, 5% and 10%).

CHAPTER FIVE: SUMMARY, CONCUSSION AND RECOMMENDATION

5.1 Introduction

The purpose of this study was to examine the relationship between firm capital structure and profitability among SMEs in the county government of Nairobi. Hence, this chapter presents summary, conclusions and recommendations based on the study objective. In addition, the chapter presents suggestions for further studies.

5.2 Summary

The general objective of this study was to investigate the effect of capital structure on the profitability of the firm. The study had focused on SMEs in Nairobi county. The dependent variable, SMEs profits was measured by subtracting total sales less expenditures, while capital structure was measured by leverage, which is the ratio of debt to owner's equity. Other variables such as the firm size measured by the number of full-time employees, the age of SMEs in years, SMEs assets in Kshs., and SMEs growth measured by sales in Kshs, were included in the study as control variables. The study used secondary data, the World bank Enterprise Survey data for 2013. A total of 179 SMEs was sampled for this study.

Concerning data analysis, both descriptive and regression analysis methods were employed. Descriptive statistics included means, standard deviations, minimum and maximum values for all study variables. On the other hand, Ordinary Least Square method was used to conduct regression analysis where, the direction and the level of significance of independent variables were computed. Two diagnostic tests were conducted on the regression to ascertain validity of the results. These were autocorrelation and heteroscedasticity tests which were all found absent in the regressed results.

The regression results show that there is a positive relationship between SMEs profits capital structure. In addition, these findings are significant at 95% confidence interval. There are various interpretations of these findings. First, they could imply that an increase in the debt equity ratio for SMEs causes a rise in their profits. Second, this revelation could mean that most SMEs do not take loans, and there their leverage ratio is very low. Another meaning could be that, SMEs utilize the loans they obtain from financial institutions to expand their ventures and hence leading to generation of more profits. Profits could occur because of increased business activities or economies of scale, and yet still, a combination of the two.

Several studies have supported this argument. For example, a study by Berger (1995), established that profits and firm leverage were positively linked. The study observed that making of more profits by firms increases their credit worthiness and therefore, more profitable enterprises have a good chance to secure loans from financial institutions. Similarly, Abor (2005) argued that borrowing enterprises have tax shields and low risk of bankruptcy and hence, more profitable. However, some studies have found contrasting results. For instance, Muya & Gathogo (2016) for the case of the Brazilian SMEs established a negative link between firm profits and capital structure. This meant that, firms which have more loans in their capital structure are likely to make less profits due to the cost of those loans in terms of interest rates (Shuai, 2013). Other studies in support of this view are: Forte et al., 2013 and Xue & Shuai, 2013).

Regarding other explanatory variables, the study has established that firm size explains profits positively. This variable was also found to be significant. These findings imply that an increase in the size of the SME as measured by full-time employees, increases the profit. Moholho (2013) found similar results. This study reported that larger firms enjoy economies of scale which ultimately leads to more profits.

The study has also found that there is a positive relationship between the growth of SMEs and its profits. The coefficient of growth variable was highly significant at 1% level. These findings consistent with other several studies. For instance, Harris & Raviv, (2012) found that expansion of firm's activities is anticipated to positively impact profits, an argument that was also supported by Myer (1984) in the Pecking Order theory and Ellilli & Farouk (2011).

SMEs tangible assets were also found to have a positive relationship with the profits. The coefficient of firm assets was also significant at 5%. This means that more assets could also make the operations of SMEs much easier, and therefore, more profits. A study by Kamau and Mwangi (2015), established that assets influences firm's profits positively. In addition, the study argued that the firm's asset structure matters a lot when it comes to financing decisions.

Finally, the study has found that the age of the SME was positively related to firm profitability. This imply that older SMEs have an advantage when it comes to profitability. This is likely to occur due to experience or accumulation of assets with time. However, age was not significant. These findings are consistent to those of Saarani & Shahadan (2012). However, Forte et al. (2013) have revealed that firm profitability is negatively associated with the age.

5.3 Conclusion

Several conclusions are drawn from this study. First, capital structure of SMEs has a positive effect on profits. This means that there more the loans borrowed by SMEs, the more their profits. Secondly, the study concludes that an increase in the number of full-time employees increases profits for SMEs in Nairobi county. These imply that there is high labour productivity among SMEs in Nairobi. Finally, the study concludes that firm assets are an important determinant of SMEs profits. SMEs use assets at their disposal to secure loans from commercial banks and other financial institutions.

5.4 Recommendations

Based on the results, summary and conclusions, the study makes several recommendations. First, the study has established that capital structure has a positive effect on SMEs in Nairobi county. The study therefore, recommends that SMEs should not shy away from taking loans to increase their business operations since, the benefits are more than the costs.

In addition, the study has revealed that the size of the firm influences SMEs financial performance positively. Cognisance of the economies of scale enjoyed by large firms, this, study recommends that SMEs should find ways of expanding their business to reap these benefits.

Furthermore, based on the finding that SMEs assets affected their profit margin positively, the study suggests that SMEs should be encouraged to own substantial amount of assets to have an advantage especially, financial security. Assets are also critical when making financial decisions.

5.5 Limitations of the Study

This study was limited in the sense that it focused on SMEs in Nairobi county alone. In addition, only 179 SMEs were sampled for data analysis. Having a large sample size which is distributed across all regions of Kenya, could have been good especially in increasing validity and hence generalizability of the findings.

The study had focused on SMEs in general and not on any sector in particular. There are some sectors which tend to perform well like the food sector (for instance) even during hard economic times, because food is very essential. Had the study been focused on any particular sector, maybe the results would have been different, especially on the relationship between capital structure and SMEs profits.

There are some factors which affect SMEs profits for which this study did not factors in. Such factors include: management, staff competency, SMEs ownership, operating expenses among others. Had these factors been included, the findings could be different.

5.6 Suggestions for further Studies

Capital structure has been found to influence profits positively among the SMEs in Nairobi, contrary to the expectations. It will be imperative to do another investigation into the reasons why this was the case. The study could also incorporate other variables such as management, human capital development, among others to see if they could change these results.

It will be necessary to conduct another study covering a wider sample and geographical area. Additionally, the study should employ a comparative analysis approach on SMES across of the 47 counties.

Furthermore, a study which should focus on specific sectors of SMEs operations will be necessary for sector wise comparison on how capital structure affects firm profits.

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APPENDIX**DATA COLLECTION FORM**

Serial No.: SME 1

Variable	Description	Amount in Kshs. Millions
Dependent Variable	Profits	
		Ratio
Independent Variable (Debt/Equity)	Capital Structure	
Variable	Description	Amount in Kshs. Millions
Control Variables	Firm Growth	
	Firm Age	
	Firm Assets	
	Firm Size (No. of permanent employees)	