

**DETERMINANTS OF CAPITAL STRUCTURE FOR INTERNET SERVICE  
PROVIDERS IN KENYA**

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**D61/68572/2013**

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

**NOVEMBER, 2015**

## **DECLARATION**

I declare that this Research Project is my original work and affirm to the best of my knowledge that it has not been presented for any award of any degree in any University.

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## **ACKNOWLEDGEMENTS**

First I thank the Almighty God for the good health and giving me strength while undertaking my MBA studies.

I would like to give special thanks to my supervisor, Dr. Iraya for the guidance and support he gave me throughout the study. I appreciate my parents and siblings for encouraging and supporting me throughout my studies.

I express my gratitude to my bosses, Prof. Meoli Kashorda and Mr. John Ngunyi for their support and understanding. Finally I appreciate my colleagues who supported me in various ways in the course of my study for this course.

## **DEDICATION**

I dedicate this Research Project to my family for the support that they gave me in the course of this study.

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## **ABSTRACT**

Raising funds for the growth and operations of the firm is a key issue for any organization. Financing decisions have to be made to determine the sources of funds. There are two major ways of raising finance for any organization; debt and equity. The proportion of debt and equity used to finance a firm defines the capital structure. The capital structure is crucial for any organization as it affects the financial risk and tax advantage which arises from use of debt. There are many factors that affect the financing decisions. Raising funds for the growth and operations of the firm is a key issue for any organization. Financing decisions have to be made to determine the sources of funds. There are two major ways of raising finance for any organization; debt and equity. The proportion of debt and equity used to finance a firm defines the capital structure. The capital structure is crucial for any organization as it affects the financial risk and tax advantage which arises from use of debt. There are many factors that affect the financing decisions. Three major theories that attempt to define the factors that influence the capital structure; pecking order theory, trade-off theory and MM irrelevance theory. The purpose of this study is to examine determinants of capital structure for internet service providers in Kenya (ISPs). The ISP sector is one of the sectors of the telecommunications industry which has been experiencing a lot of growth with many entrants venturing into this industry. The study sampled a few firms based on the quarterly CCK reports for September 2014 which revealed that eleven firms controlled 99.5% of the total market share. Secondary data of the financial statements of the sample population for the period between 2009 and 2013 was used for this study. Regression analysis was used to analyse the data that was collected. The factors which were tested are profitability, liquidity, assets tangibility, growth and size of the firm. The study found that all these factors influenced the capital structure of the ISPs in Kenya. The study established that profitability, asset tangibility and growth positively influence the capital structure decision whereas liquidity and size of the firm negatively affect the capital structure.



## **LIST OF ABBREVIATIONS**

**CCK** – Communications Authority of Kenya

**ISPs** – Internet Service Providers

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background to the Study**

Capital structure is one of the areas in financial management that has aroused a lot of debate since the seminal work of Modigliani and Miller in 1958. The question whether there exists a unique combination of equity and debt that maximizes the value of the firm and the factors that influence an optimal capital structure has raised a lot of debate and controversy in corporate finance literature (Myers, 1984). The capital structure is very critical for the success of any organization as it influences the shareholders wealth due to the cost of capital (Salawu, 2007). This ultimately affects the market value of the shares. The capital structure decision affects the financial risk and the tax advantage that a company gains from use of debt its capital structure. One of the objectives of a finance manager is to identify an optimal capital structure which is the point where the cost of capital is minimum.

Modigliani and Miller (1958) proposed that financing decisions of any firm are irrelevant and do not affect the value of the firm in a perfect corporate world where there are no corporate taxes, no transaction costs and symmetric information. After this irrelevance theory many studies have been carried out have been carried out to establish the determinants of capital structure but no conclusion has been made on the factors affecting the choice of capital structure (Myers, 1984). Beattie et al. (2004) established that firms have certain preferences in choosing their financing sources with high preference for internal funds before considering external financing. Myers (1984) noted that the choice of capital structure is based on a trade of between the tax advantages arising from borrowing against the costs of financial distress. The firm establishes a ratio of debt and equity at the point which the value of the firm is maximized.

The telecommunication sector, which includes data communication, is experiencing massive growth and expansion all over the world. This rapid expansion is due to the rapid technological advancement and adoption of technology in many functions both at the corporate and individual level. Due to this many opportunities have risen in this industry leading to increased competition and the need for improved efficiency to remain competitive in the industry (Wanyama and Baryamureeba, 2007). One of the ways that a firm can enhance its competitive advantage is by adopting an optimal capital structure. Establishing an optimal capital structure is one of the critical decisions that the managers of an organization have to make.

### **1.1.1 Capital Structure**

Capital structure depicts the manner in which a firm finances its operations and growth by using different sources of funds (Brigham, 2004). The two major sources of finance are debt and equity (Brealey & Myers, 2003). Debt can be in the form of long-term loans, bonds and long-term notes payable. Equity is in the form of retained earnings, preferred stock and common stock (Brigham, 2004). Capital structure is the mix of different securities used in financing a firm's investment (Brealey & Myers, 2003). Each of these sources of finance is associated with different levels of risk, return and control. A firm can use either debt, equity or both to finance its operations (Brigham, 2004).

In a company's balance sheet, the capital structure is represented as the ratio of debt instruments, common stock and preferred stock. Company structure involves making a decision on the proportion of equity and debt a firm uses to finance its operations (Brigham, 2004). It also involves a decision on the level of long-term to short-term debt that a firm uses to finance its operations (Brealey & Myers, 2003). Capital structure decision also involves determining the specific components of the equity or

debt financing (Brigham, 2004). A decision has to be made on the specific sources of equity and debt that the firm uses and the proportion of each of the component.

### **1.1.2 Capital Structure Determinants**

Different factors affect the capital structure of a firm. Firms attempt to establish an optimal capital structure which is the best mix of financing that maximizes the shareholders' wealth. There is no predefined procedure on how to arrive at the optimal mix of finance for a firm (Marsh, 1982) To arrive at this mix a firm has to analyse various factors that affect the capital structure to arrive at an optimal capital structure (Brigham, 2004).

The trade-off theory suggests that a firm's decision on the optimal structure is affected by tax policy, financial distress and bankruptcy costs. Use of debt increases the value of the firm due to the tax shield gain. Use of too much debt increases the probability of bankruptcy and increases financial distress. Firms consider the benefits and the costs associated with debt to arrive at an optimal capital structure (Myers, 1984).

The pecking order theory is based on information asymmetry between the management of the firm and the investors (Myers, 1984). It assumes that the managers of a firm have more information about the operations of the organization than investors. This theory specifies the hierarchy in which firms finance their operations and assumes that the firm first utilizes the internally available sources of finance before considering external sources of finance. The firm uses cheaper debt before considering raising new equity (Myers, 1984). Hence the decision on the source of finance is influenced by the availability of cheaper sources of finance before considering the external sources of finance that are mostly more expensive.

According to Harris and Raviv (1991), capital structure is determined by level of fixed assets, non-debt tax shield, investment opportunities, firm size, volatility, advertising expenditure, probability of bankruptcy, uniqueness of product and profitability. This study found that leverage is positively related to fixed assets, investment opportunities, firm size and non-debt tax shield but negatively related to advertising expenditure, volatility, probability of bankruptcy, uniqueness of product and profitability.

Booth et al. (2001) suggested that tangibility of assets positively affects the level of leverage. Firms with a high level of tangible assets can easily issue secured debt and hence have higher levels of debt compared to firms with low levels of debts. A firm with high levels of tangible assets can secure debt at low interest rates, which acts as an incentive for the firm to use more debt as a source of finance.

### **1.1.3 Capital Structure and Capital Structure Determinants**

The pecking order and trade of theories are useful in explaining the relationship between capital structure determinants and capital structure. According to the pecking order theory, a firm with greater internal financing sources will use more equity and lower leverage in its financing (Myers, 1984). A firm with lower level of internal resources will use more debt financing in its capital structure. This implies that a firm with higher profitability and liquidity ratios will use less debt financing.

The trade-off theory suggests that a firm considers a trade-off of the benefits and the costs that arise from use of leverage in financing its operations (Myers, 1984). A firm with higher bankruptcy and liquidation risk will use lower levels of debt financing in its capital structure. On the other hand, a firm with low levels of bankruptcy and liquidity risk will use higher levels of debt finance in its capital structure. This theory suggests that a big organization will use more debt financing in its capital structure.

Various studies have been carried out that support these theories. Rajan and Zingales (1995) carried out a study whose findings supported the trade-off theory and found that the size of the firm positively affects the leverage level of a firm. Bevan and Danbolt (2000) found through their study that there is a negative relationship between profitability and leverage financing.

#### **1.1.4 Internet Service Providers in Kenya**

Internet service providers (ISPs) are companies that provide access to internet-based products to their clients. The delivery of these products is through information technology (IT) which is either owned by the company or leased. An ISP is a firm that provides a user with access to internet through some form of connection. Traditionally the connection was done via telephone line but with advancement in technology in the recent years, this connection is done using cables and DSL (Digital Subscriber Line) (OECD, 2011).

The core function of ISPs is thus selling internet bandwidth to internet users and assisting the individuals and organization get connected to the internet (Wanyama and Baryamureeba, 2007). The cable service providing internet connection offers internet, TV signals and telephone services once the organization or the individual gets connected (OECD, 2011).

ISPs provide many services to their clients that include internet access, domain names and hosting, internet transit, and leased line access, server collocation and dial –up access. ISPs operate in various forms some are privately owned, others are commercial enterprises, others are non-governmental organizations (OECD, 2011). For the purpose of this study, the focus will be on commercial ISPs in Kenya. All ISPs in Kenya are regulated by the Communications Commission of Kenya (CCK).

CCK was established in 1999 by the Kenya Communication Act (KCA) No. 2 of 1998. The main mandate of CCK at initiation was regulation of postal/courier sectors and telecommunication. With recent developments in the telecommunication and broadcasting industry, the Act was amended in 2009 to clearly define the obligations of CCK.

Various factors at the industry and the firm level affect the capital structure of any firm. The telecommunication industry is characterized by rapid changes and expansion which implies that constant changes have to be made in the financing structure to establish an optimal capital structure. The assets structure for firms in this industry has a high component of fixed assets which are used in facilitating the transmission of data and internet. (Muema, 2013) found that growth has little or no influence on the capital structure of firms in the telecommunication sector. His study also established that liquidity has a positive relationship with leverage for firms in the telecommunication industry. (Muema, 2013) further established that the size and profitability of the firm negatively affected leverage whereas tangibility of assets positively affected leverage.

## **1.2 Research Problem**

Capital structure decision is one of the most critical decisions that any firm has to make to maximize its shareholders wealth and sustain its competitiveness. Every company desires to develop an optimal capital structure that is most suited to its characteristics and therefore will help it to reduce the cost of capital and maximize the shareholder's wealth. Existing literature suggests that different companies adopt different levels of debt in their financing because the different industries face different environments (Titman & Wessels, 1988).

Different industries face different business environment. The Internet Service Providers is one of the components of the telecommunication industry in Kenya. This industry has been experiencing rapid technological advancements and its growth with a majority of the population in Kenya embracing technology. Due to this fast-paced development, a lot of opportunities for growth in terms of market share and improved efficiency exist in this industry (Wanyama & Baryamureeba, 2007). This has led to a rush of many new entrants into this market in Kenya that has increased the competitiveness this industry. One of the ways that firms can enhance their competitiveness is by adopting an optimal capital structure that will help the firm reduce the cost of capital and maximize the shareholders wealth.

Shah and Hizaji (2004) carried out a study on the determinants of capital structure in the listed Pakistan companies. The study established that the man factors affecting the leverage levels of firms are assets tangibility, size of the firm and profitability. Huang and Song (2006) conducted a study seeking to determine the relationship between growth and leverage financing and established that a negative relationship exists between growth and leverage financing.

Kuria (2010) conducted a study on determinants of capital structure for companies listed in NSE and concluded that asset structure and profitability are the main determinants of the capital structure. Kinyua (2005) conducted a study on the capital structure determinants for SMEs in Kenya and established that company size, asset structure, management attitude towards risk, lenders attitude towards the company and profitability are the main determinants of the capital structure.

Jin et al. (2009) carried out an empirical study on factor affecting the capital structure of Chinese listed IT firms .The study established that size of the firm is positively



related to leverage whereas growth, liquidity, profitability, and growth opportunity are negatively related to leverage.

Although many studies have been done on the determinants of the capital structure there is no evidence of any study that focussed on the factors that determine the capital structure of Internet Service Providers hence this study seeks to determine the factors that determine the capital structure of Internet Service Providers in Kenya.

### **1.3 Research Objective**

The objective of this study is to establish the major determinants of capital structures for Internet Service Providers in Kenya.

### **1.4 Value of the study**

The findings of this study will establish the main determinants of capital structure for Internet Service Providers in Kenya. This will shed light on the main factors that significantly influence the choice of capital structure for internet service providers in Kenya. This will guide the finance managers of ISPs in Kenya in establishing the capital structure for their organizations. The finance managers of ISPs will use the findings to this study to guide them in establishing an optimal capital structure for their organization.

The regulators can determine the major determinants of capital structure and model incentives and models that will help ISPs to remain competitive. The regulators can use the finding of this study in formulating the guidelines and regulations relating to the capital structure for the listed operators. The regulators will also use the results to recommend the most optimal capital structure to the ISPs to improve their competitiveness.

This study will add to the scholarly knowledge and further help other scholars who may who may use the study to further identify other determinants that have not been covered in this study. The findings of this study will trigger further research by students and other scholars to add more literature to the findings of this study.

Financial consultants and business advisors may find this information helpful as they will understand the factors that are considered in designing the capital structure for Internet Service Providers. They may apply the findings of this study to provide advice to their clients who are in the telecommunications industry.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter will review theories relating to the capital structure. The section will review the various studies that explain the relationship between determinants of capital structure and the leverage. This section will also present studies that have been carried out seeking to determine the factors that influence the capital structure for firms in different sectors and in different regions.

### **2.2 Theoretical Review**

This section will review major theories that have attempted to explain the choice of capital structure. Capital structure theory explains the impact of varying the debt equity proportion on the value of the firm. The theories justify the financing decisions made by financial managers of different organizations. The theories reviewed in this section are the irrelevance theory, pecking order theory, agency cost based theory, trade-off capital theory and market timing theory.

#### **2.2.1 The Irrelevance Theory**

This initial theory was first proposed by Franco Modigliani and Merton Miller in 1958. This theory proposed that the firm's value is independent of the proportion of debt to equity a firm uses in financing its operations. The study was based on assumptions that there were no taxes, bankruptcy charges, transaction costs and asymmetric information and that the same rate of interest of borrowing by corporations and individuals. This framework is based on the assumption of a perfect competition. Hence this theory assumes that a firm cannot increase its value by using leverage as part of its capital structure. This argument is based on perfect arbitrage which investors can utilize personal finance to finance the purchase of unlevered shares in case the value of the value of the levered share is higher than that of the

unlevered share. Through perfect arbitrage the difference in the value of two firms: one with levered shares and the one with unlevered shares will be eliminated and the two firms will have the same value.

In 1963, Modigliani and Miller relaxed their assumption of perfect competition and introduced taxes into their model, which implied that the capital structure adopted by a firm affected the value of the firm. In this paper Modigliani and Miller proposed that a firm can maximize its value by use of debt as this provides a tax shield. A firm that uses more debt in its financing reduces the corporate tax. This savings in the value of corporate tax increases the value of the firm. A firm that uses more debt enjoys greater tax and hence has more value than a firm that uses less debt in its capital structure. This implies that one of the determinants of capital structure decision is the intention to benefit from the tax shield that arises from the use of more debt in the capital structure. Hence one of the determinants of tax policy is the tax policy as this will impact on the value of a firm.

### **2.2.2 Pecking Order Theory**

Myers (1984) proposed that firms have a certain order of preferences in their choice of sources of finance. This theory is based on the assertion of information asymmetry between the insiders in an organization and the investors. This information asymmetry may lead to mispricing of equity by the market. To avoid this firms create a preference order for their sources of finance; firms prefer internal finance over external finance, safe debt over risky debt and convertible and finally common stocks (Danaldson, 1961; Myers & Majluf, 1984). In summary Myers proposition was that firms prefer internal financing before considering safe debt and equity is the last resort as their source of finance. Tangible assets are less subject to information

asymmetry than intangible assets and hence the nature of the assets should be a determinant in the choice of the sources of financing.

Myers (1984) further supports the hierarchy in the preference of financing sources. Internal sources of finance are given first preference by any firm. The floatation costs are not incurred in utilizing internally generated funds and the firm is not required to publish its financial information which makes it more expensive compared to raising the funds internally. This makes internal sources of raising funds more preferable to firms. Financing using internal funds may affect the growth of the firm. A firm that is experiencing a lot of growth may not have the potential to generate enough funds and may be forced to borrow hence affecting its capital structure (Drobetic & Fix 2003).

Scherr et al (1993), Holmes et al. (1991) and Quan (2002) proposed that the pecking order theory provides an appropriate explanation for the medium sized enterprises financing practices. Most medium sized enterprises use debt as their source of finance compared to big enterprises. This proposition was based on the argument that small and medium enterprises managers tend to be owners of the business who avoid diluting their ownership and hence prefer debt to equity financing.

This explains the relationship between the growth of a company and the capital structure. Firms that are in early growth stages, direct most of their finance towards capital investment and expansion projects implying that they have less internally generated funds to finance their operations. This implies that these firms will employ higher leverage levels in their capital structure compared to firms that have experienced growth

### **2.2.3 Agency Costs Based Theory**

This theory suggests that the capital structure of a firm is influenced by the agency costs, which include the costs of debt and equity. Jensen and Meckling (1976) suggested that a conflict of interest may arise between the management and the shareholders of a company. They considered that manager benefits from the wealth he derives from a firm and the private gains he makes from a firm. Management may make suboptimal decisions that are not in the best interest of firm for their private benefits and hence not maximize the value of the principal (shareholders). One of the ways that is through use of firm's free cash flows for their personal benefits. Free cash flows refers to the funds available to a firm after financing all the expenses including financing the projects generating positive cash flows to a firm.

Jensen and Meckling (1976) proposed that a trade-off exists between the managerial private benefits and the value of the firm. This gives rise to agency costs which include bonding expenses of the agent (manager), the costs of monitoring by the principal (the shareholders) and reduced value of the firm where the agent does not invest in projects that generate maximum wealth to the shareholders. Jensen (1986) proposes that these agency problems can be minimized by increasing the stake of ownership of managers in the business and increasing the levels of debt in the capital structure of a firm. Increasing the stake of ownership of managers in the business will imply that the managers will act in the best interest of the organization as they will benefit from the gains realized by the increase in value of the business. Increasing the debt proportion implies that there will be limited free cash flow available for management as they have to settle the high interest obligation. Therefore the agency costs will influence the decision on the capital structure.

### **2.2.4 Trade-off Theory of Capital Structure and Taxes**

Modigliani and Miller paper in 1963 added the proposition that the use of debt finance increased the value of the firm that was created. Myers (2001) explained why firms use moderate levels of debt despite the benefit that arises from the tax shield created by the use of debt. This theory suggests that an optimal capital structure is a trade-off between the benefits and costs of borrowing. The benefit is the interest tax shield and the costs include the bankruptcy and financial distress (Myers, 1984). Interest is a deductible expense and hence reduces the tax liability which increases the earnings after tax and the cash flows available to a firm. Financial distress is experienced when a firm fails to honour its obligations to its debt holders. If a firm continues to fail to honour those obligations, it can be insolvent (Brigham, 2004). Financial distress may also manifest in form of customers boycotting the firm's products and services, demoralised employees, suppliers may decline to offer credit, bank may deny the firm overdrafts and loans and opportunity costs arising from profitable investments as managers may fail to take up profitable projects to avoid any risk (Brealey & Myers, 2003). Firms therefore analyse the marginal costs and benefits arising from additional borrowing and borrow up to the extent the marginal value of tax shields on additional debt is offset by the increase in the present value of possible costs of financial distress (Myers 2001).

### **2.2.5 Market Timing Theory**

This theory suggests that a decision on the debt/equity ratio is based on the present capital market circumstances. In case of unfavourable market conditions, there is high probability of delaying investments. Capital structure decisions are thus determined by equity market returns and conditions in the bond market.

Equity timing entails the process of issuing shares at high prices and repurchasing when the prices go low (Baker & Wurgler, 2002). The main objective is to benefit from temporary fluctuations in the market cost of equity. Baker and Wurgler (2002) suggested that high market to book ratio is an important timing signal. The argument is that firms do not have an optimal capital structure and their decision on the capital structure decision is the result of an attempt to time the equity market.

## **2.3 Capital Structure Determinants**

Based on the theories above, empirical studies have been carried out and identified the determinants of capital structure which include; assets tangibility, size of the firm, growth of the firm, liquidity and profitability.

### **2.3.1 Tangibility of Assets**

Tangibility of assets refers to the proportion of a firm's fixed assets to total assets. Rajan and Zingales (1995) suggested that assets structure is an important determinant of capital structure. Firms with higher tangible assets have a higher debt capacity (Donaldson, 1961). A firm with great amount of fixed assets can borrow at a lower interest rate by providing collateral of those assets to creditors. Assets tangibility enhances the collateral capability of a firm and thus enhancing the debt capacity of an organization (Kuria, 2010).

The agency theory proposes that firm with high debt levels of finance tend to underinvest and thus transfer wealth from debt to equity holders (Deesomsak et al., 2004). Therefore, using fixed assets as collateral helps in reducing potential agency problem that arises from use of debt. Liquidation value increases as the level of tangible assets increases and decreases the probability of mispricing in case of bankruptcy. Tangible assets help minimize the problem of information asymmetry



and subjective mispricing of assets as value of tangible assets can be easily determined as compared to intangible assets (Rajan & Zingales, 1995). From this, we can conclude that tangible assets influence the level of leverage in two ways; it enables firms to pledge the fixed assets as collateral thus reducing the agency problems associated with debt financing and it protects the lenders in the event of liquidation (Rajan & Zingales, 1995). Allen (1995) provided empirical evidence that proved that a positive relationship exists between the tangibility of assets and leverage. The past studies purport that tangibility of assets positively affects the capital structure of a firm. The researcher thus expects a positive relationship between tangibility of assets and the capital structure.

### **2.3.2 Size of the Firm**

Firm size is a very important factor that influences the capital structure decision (Kuria, 2010). The trade of theory suggests a positive relationship between size of the firm and debt financing. This is based on the fact that large organizations tend to have lower bankruptcy risks and lower bankruptcy costs (Deesomsak et al., 2004). Large corporations have relatively smaller monitoring costs, less volatile cash flows, lower agency costs of debt and easier access to credit from the market (Deesomsak et al., 2004). Therefore based on this hypothesis the size of the firm is expected to have a positive relationship with debt financing.

Marsh (1982) proposed that small and medium sized firms tend to depend more on debt than equity financing due to their limited internal funds. Titman and Wessels (1988) suggested that there is a negative relationship between the size and the leverage financing. Rajan and Zingales (1995) proposed that the relationship between size and leverage could be negative or positive. The positive relationship is in line with the trade of theory. The negative relationship is based on the argument that larger

organizations asymmetric information problems would be smaller in large organizations and hence the firms can easily raise their finance by issuing new equity, as this would not reduce their market value. The relationship between size of the firm and leverage is thus a matter that requires further empirical investigation as a consensus has not yet been arrived at on that relationship.

### **2.3.3 Growth of the Firm**

Studies on the relationship between growth and leverage have shown controversy on whether growth affects leverage levels positively or negatively. The pecking order theory proposes that a firm will first utilise internal funds and then the cheaper debt before considering issue of new equity. A firm that is experiencing growth is, thus likely to use debt, as the internal funds may not be sufficient (Drobetic & Fix 2003). Therefore, based on this theory a positive relationship is expected between growth and leverage.

Information asymmetry, which was proposed by Myers and Mjuf (1984) explains the positive relationship between leverage and growth. When a firm is experiencing high growth, investors and outsiders view that the borrowing firm is growing and a perception is created that the firm is not likely to experience bankruptcy problems and hence the potential of debt financing is high. Hall et al (2004) proposed that a growing firm has massive expansion projects that exploit the internal funds hence causing the firm to seek debt financing.

According to Huang and Song (2006), firm's growth is negatively related to the leverage financing. Growth reduces free cash flow, increases the costs of financial distress, and hence increases the agency costs associated with debt financing (Frank & Goyal, 2009). Titman and Wessels (2012) proposed that there is a negative

relationship between leverage and growth of a firm. He suggested that a firm's growth is associated with high agency costs hence firms in the high growth are expected to employ low levels of debt financing. Zhang established from their study that there is negative relationship between leverage and growth (2011).

Growth can be defined in various forms including sales, increase in sales, and increase in assets level. Odinga (2003) measured growth in terms of percentage change in total sales. Drobetz (2003) and Turere (2012) measured growth in terms of percentage of increase in total assets. This study will measure growth in terms of percentage change in total assets.

#### **2.3.4 Liquidity**

Studies on the effect of liquidity on the capital structure have not shown consistent results and a controversy exists on whether there is a positive or negative relationship between liquidity and leverage. Shleifer and Vishny (1992) suggested that liquidity has a positive relationship with leverage. This is based on the argument that less liquid assets increases the costs of bankruptcy, liquidity and costs of debt. This relationship supports the trade-off theory. Firms with less liquid assets employ less debt as the costs of bankruptcy and debt are higher. Sibilkov (2007) established that firms with higher liquidity employ more debt in their finance.

According to the pecking order theory, firms utilize internally generated funds before considering external sources of finance. High liquidity levels imply that a firm will prefer to utilise the internal funds before issuing debt hence a negative relationship is expected between liquidity and leverage. Frieder and Martell (2006) conducted a study in which he established a negative relationship between liquidity and leverage.

Lipson and Mortal (2010) established that firms with high liquidity levels employ less debt.

### **2.3.5 Profitability**

The trade of theory suggests that firms with high profitability are more likely to employ high debt (Myers, 2001). This is because a firm with high profitability will have a high tax burden and hence will benefit more from the tax shield arising from debt financing. Secondly, bankruptcy costs reduce when profitability increases (Ooi, 1999). Investors view the probability of default for a firm making huge profits consistently as very low and hence are willing to lend to them. These factors hence act as an incentive for a firm with high profits to use more debt financing (Ooi, 1999). Sovbetov (2003) established that there is a positive relationship between profitability and leverage.

The pecking order theory however suggests the contrary. The pecking order theory proposes that a firm adopts a certain hierarchy in determining the sources of finance to use starting with the cheaper internal sources of finance (Myers, 1984). According to this theory a firm with high profitability will have high retained earnings and will utilize the internal funds before considering issuing debt. Hence there will be a negative relationship between profitability and leverage. A study conducted by Bevan and Danbolt (2001) supports the pecking order theory of a negative relationship between profitability and leverage. Cole (2008) carried a study that supported this and established that profitable firms use less debt compared to unprofitable firms. This study seeks to establish whether a positive or a negative relationship exists between profitability and leverage.

### **2.4.1 Empirical Review: Global Studies**

Pathak (2005) carried out a study on leverage decisions for Indian firms. He used a regression model to analyse the variations in the capital structure. The findings of the study were that the major determinants of capital structure were liquidity, firm size, assets tangibility, growth, profitability, and liquidity a second tier determinant that is research and development that is related to leverage. The findings of the study were

that leverage increases with tangibility, growth and firm size. The study further established that leverage increases with the decrease with profitability, liquidity and business risk. The results of this study imply that assets tangibility, growth, and firm size are positively related to leverage. In contrast, profitability, liquidity, and business risk are negatively related to the capital structure.

Shah and Hizaji (2004) carried out a study to measure the determinants of capital structure in listed Pakistan companies for a five-year period. Pooled regression model of panel data analysis method was used in analysing the data. The findings of the study were that assets tangibility is positively related to leverage though the relationship is not very significant statistically. The study further established that size which was measured by the log of sales is positively related to leverage. This implies that larger firms employ more levels of debt in their financing. The study further found that growth which is measured by percentage change in total assets is negatively related to debt. A positive relationship was found between profitability and leverage. Based on the results of this study tangibility of assets, size of a firm, and profitability of the firm are positively related to leverage whereas growth of the firm is negatively related to the leverage.

Kunt and Maksimovic (1994) carried out a study to establish the main determinants of capital structure for countries in developing countries. The sample size comprised of ten developing countries. The study established that assets, industry effects, liquidity, firm size, firm growth and tax effects affected the capital structure of firms. The study further established that assets, liquidity and industry effects were more significantly related to the capital structure than firm growth, firm size and tax effects. The study also found that debt is negatively related to net fixed assets.

Rajan and Zingales (1995) carried out a study on the capital structure of the G-7 countries. The study found that the leverage level is positively related to the size of the company and assets tangibility defined in this study as the proportion of fixed to total assets). The study also found that leverage is negatively related to the market-to-book ratio and level of profitability of firms. Huang and Song (2006) carried out a study on the determinants of capital structure for firms in China their sample comprised of more than 1,000 listed Chinese companies and used accounting and market data in their study. The study found that leverage; non-debt tax shield and firm size are positively related with the leverage levels and negatively related with profitability.

Marsh (1982) carried out a study to establish factors that influence the choice of capital structure by companies. He used a logit model in his analysis to analyse the financing instruments used by firms. The study found that firms in choosing the financing instruments act as though have a target for the long-term debt to equity ratio and for short to long term ratios. The study also establish that long-term debt is influenced by company's size, assets composition and operating risk.

#### **2.4.2 Empirical Review: Local Studies**

Muema (2013) carried out a study on the determinants of capital structures of firms listed under the various market segments in the Nairobi Securities Exchange. Factors that were tested in this study were tangibility of assets, size of the firm, and growth of the firm, profitability, non-debt tax shield and liquidity. The findings of the study were that the determinants of the capital structure differ across the different market segments.

In telecommunication, investment and automobile no factors showed any significant correlation with debt levels. For the combined segment, non-tax debt shield and tangibility of assets showed a high correlation with leverage. The conclusion of the study was there are disparities in the different factors that affect the capital structure in different market segments.

Magara (2012) did a study on the capital structure and its determinants at the Nairobi Securities Exchange). The objective of the study was to determine the major determinants of the capital structure. The study established that from the period of 2007 to 2011, there was a positive relationship between the tangibility, size of the firm and growth rate of the firm. The study did not take into account the macroeconomic factors.

Mwangi (2012) carried out a study on the capital structure of firms listed at the Nairobi Stock Exchange. The study examined the relationship between capital structure and financial performance. The findings of the study were that there is a strong positive relationship between leverage and return on equity, return on investments and liquidity. Turere (2012) conducted a study to the determinants of capital structure in the energy and petroleum sector. The main determinants considered in this study were company age, size ownership structure and growth rate for the period between 2000 and 2010. The findings of the study were that there exists a strong negative relationship between the ownership structure and total leverage. He also found that the size and financial performance of a firm have a positive impact on the capital structure of the firm. The study also established that financial performance has little significance on total leverage. The study thus concluded that the main determinants of the capital structure in the energy and petroleum industry are age of the company, growth rate and ownership structure.

Kuria (2010) carried out a study on determinants of capital structure for firms listed at the NSE. The study analysed the data for seven years from 2003 to 2009 and used regression in analysis of the data that was collected. The findings of the study were that asset structure, profitability and ownership structure are the main determinants of the capital structure. The study found that leverage is positively related with firm size and higher growth and inversely related to profitability, market power and bankruptcy costs.

Musili (2005) conducted a study on the choice of capital structure by industrial firms in Kenya. The findings of his study were that firms are more likely to follow a financing hierarchy in order that maintain a target debt to equity ratio. The study established the growth, asset structure, turnover and age are the main determinants of capital structure for firms in Kenya. He also noted that there is a strong positive relationship between size of the firm and leverage hence large firms are more levered compared to small firms.

## **2.5 Summary of Literature Review**

From the above discussion, the two major theories are pecking order theory and trade off theory. The pecking order theory suggests a certain hierarchy in determining the proportions financing instruments. The trade-off theory suggests that a trade of between the benefits and the costs has to be established before arriving at an optimal capital structure. These two theories have been used in explaining the relationships between the capital determinants and the capital structure.

From the above empirical evidence, it is clear that conflicting results have been found on the relationship between the capital structure determinants and the capital structure. No conclusion has been made on whether profitability, liquidity, growth and



size affect leverage positively/negatively. The only determinant for this particular study that has shown consistent results on how it affects leverage is tangibility of assets.

It is also clear that there exists scanty empirical evidence and study on the capital structure in the telecommunication sector. Muema (2013) established that profitability, tangibility of assets, size of the firm and liquidity are the main determinants of capital structure for firms in the telecommunications industry Very few studies have been done study on the capital structure determinants for firms in the telecommunications industry.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter presents the methodology that was applied in conducting the research. It includes the research design that was applied in carrying out the study, the population, and criteria for sampling the population of study, techniques of data collection and for analysing the data collected.

### **3.2 Research Design**

A descriptive research design was applied on the study. Descriptive analysis is applied when a researcher seeks to gain a better understanding of the topic under study (Cooper, & Schindler, 2006). The main objective of this type of study is to describe the characteristics and data about the topic that is being studied. The idea in applying this type of design is to study the averages, frequencies and other statistical calculations.

In this study a descriptive research design was preferred because it describes how leverage is related to any of the independent variable, that is, asset tangibility, liquidity, profitability, firm size, firm growth and helps to identify which factors are most important in determining the capital structure of ISPs in Kenya.

### **3.3 Population**

The target population for this study was the Internet Service Providers in Kenya. According to the register of Unified Licensing Framework Licensee released by CCK in September, 2014 the total number of registered ISPs in Kenya was one hundred and thirty one firms (Appendix one).

### **3.4 Sample**

The study considered the quarterly statistics report released by CCK for the quarter for the second quarter of financial year 2014/2015 relating to the market share of the

various ISPs in Kenya. The report showed that eleven firms controlled 99.5% of the Kenyan ISPS Market (Appendix 2). This was considered a fair representation of the total population and hence the other 120 firms which represent 0.5% of the total market share were not considered for this study.

### **3.5 Data Collection**

This involves the techniques adopted by the researcher in gathering the data for the study. Secondary data was obtained from the audited financial statements of the firms in the sample population. Data for a period of five years between 2009 and 2013 was used for the study. Data collected was used to measure the following variables leverage, profitability, assets tangibility, liquidity and profitability. The data collected was analysed using the template attached in appendix three.

### **3.6 Data Analysis**

Regression models predict the relationship between the independent variable and the dependent variables. The model below was used for the analysis:

$$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5$$

Y= Leverage- Dependent Variable (Total Interest Bearing Debt divided by Total Assets)

X1-X6 – Independent Variables

X1- Profitability (Earnings before interest and tax divided by total assets)

X2 -Growth (per cent change in total assets)

X3-Size (Given by Natural Logarithm Total of sales)

X4- Asset Tangibility (Total Fixed Assets divided by Total Assets)

X6-Liquidity (Total current assets divided by total current liabilities)

B1-B5 regression coefficients define the amount by which the dependent variable(Y) changes for every unit change in predictor variables. The dependent variable in this model is leverage. The independent variables are profitability, growth, size, asset tangibility and liquidity. This implies that X1, X2, X3, X4 and X5 are factors that determine how much debt(Y) a firm will have.

T-test was used to test for the significance of the relationship between leverage and each of the independent variables (Profitability, Growth, Size, Asset Tangibility and Growth). The following hypothesis will be tested:

H0: There is no linear relationship between the leverage and each independent variable.

H1: There is a linear relationship between the dependent variable and each independent Variable.

The null hypothesis was evaluated at 5% level of significance.

### Expected Results

Variable	Measure	Expected Relationship	Theory
1. Tangibility of assets	Fixed assets/total assets	Positive	Information asymmetry
2. Size of the firm	Total sales	Negative	Trade of theory
3. Growth	% change on total assets	Positive	Pecking order theory
4. Liquidity	Current assets/Current Liabilities	Negative/Positive	Pecking order/Trade of theory
5. Profitability	Earnings before interest and tax	Negative/Positive	Pecking order/Information asymmetry

## CHAPTER FOUR: DATA ANALYSIS, RESULTS AND FINDINGS

### 4.1 Introduction

This chapter covers the results of research findings and data analysis. The objective of the study was to investigate determinants of capital structure for ISPs in Kenya and the research findings discussed in this chapter are based on this objective. Data of targeted ISPs was collected from audited financial statements of the firms by filling the data collection sheets. The study begins by showing descriptive analysis and then regression analysis.

### 4.2 Descriptive Statistics

Descriptive statistics are used to describe the basic features of the data in a study.

**Table 4.1: Descriptive statistics**

	Leverage	Liquidity	Profitability	Tangibility of assets	Size of the firm	Growth of the firm
Mean	0.91	0.93	0.39	1.05	15.12	3.83
Median	0.225	0.96	0.23	0.82	14.34	2.8
Std. Deviation	1.35	0.30	0.38	0.87	1.64	2.38
Kurtosis	1.82	1.08	2.84	3.19	1.03	0.92
Minimum	0.03	0.44	0.05	0.65	13.48	1.2
Maximum	4.72	2.03	2.33	4.25	18.71	9.63

The sample size was made up of eleven firms and the data collected is for a period of five years (2009 to 2013). The results have equal number of observations hence there is equal amount of information on all the variables. Leverage is the ratio of total interest bearing debt to total assets and is used to measure the debt capacity of the firms. The average leverage for this sample population was 0.91 with a standard deviation of 1.35. This implies that the firms in this study were mostly financed by debt. The high standard deviation suggests that there was a large variance in terms of the leverage levels applied by the population of our study. Some firms used high levels of debt finance and others used low levels.

On average the firms had lower level of current assets compared to current liabilities based on the average liquidity of 0.93 and a standard deviation of 0.3 implying that there was no great variance in the liquidity levels of the population of study.

Profitability is measured by earnings before interest and tax divided by total assets for this study. The average profitability was 0.39 with the maximum being 2.33 and the lowest 0.05. The standard deviation was 0.38. This suggested that the rate of return that the firms in this study got from their investment in assets did not vary significantly.

The assets tangibility was 1.05 with a standard deviation of 0.87. This implied that the firms in this study that is the internet service providers, majority proportion of the assets comprised of fixed assets. The maximum was 4.25 implying that some firms held extremely high level of fixed assets.

The average growth of the population in this study was 3.83 with a standard deviation of 2.38. This implied that the sample of our study had a great variance in terms of the growth levels of the population under study. Some firms were not growing but others were experiencing high growth.

The size of the firm for this study was based on the natural logarithm of sales. The mean was 15.12 and the variance was 1.64. This suggested that there was a great variance in terms of the size of the firms in this study; some firms are large while others are medium.

### 4.3 Regression Analysis

Regression analysis was performed to establish the relationship between the independent variables and the dependent variable. The study established the linear least square method in which the independent variables are growth, assets tangibility, profitability, liquidity and size. The tables 4.2, 4.3 and 4.4 below shows the results of the linear regression model of the firm and growth.

#### Regression Results

**Table 4.2 Anova Table for the regression results**

Model	Sum of Squares	Df	Mean Square	F	Sig
Regression	.78	5	.156	39.128	0.00008
Residual	.19	48	.003		
Total	.97	53			

- a. Predictors (Profitability, Liquidity, Assets Tangibility, Size of the firm and growth of the firm).
- b. Dependent Variable: Leverage



The table above shows that the predictor variables statistically predict the dependent variable. This is so because the p value (0.00008) is smaller than the alpha (0.05). Therefore the regression model is a good fit for the data.

**Table 4.3 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Dimension	0.90	0.80	0.78	0.00485

- a. Predictors (Profitability, Liquidity, Assets Tangibility, Size of the firm and growth of the firm).
- b. Dependent Variable: Leverage

R square represents the proportion of the dependent variable(leverage) that can be explained by the independent variables From the table above 80% of the variations in leverage can be explained by the profitability, liquidity, size of the firm, assets tangibility and growth of the firm. This implies that there are other factors that explain the financing decisions of the firm.

**Table 4.4 Coefficients of the Model**

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Standard Error	Beta		
Constant	-.15	1.08		-.14	0.048
Profitability	0.97	0.44	.426	2.19	0.038
Assets Tangibility	0.29	0.15	.352	5.11	0.004
Size of the firm	-.03	0.06	-.09	-.42	0.024
Liquidity	-.47	0.32	-.695	1.95	0.015
Growth	.32	.06	0.765	1.49	0.080

a. Dependent Variable: Leverage

b. Constant (Predictors) – Profitability, Liquidity, growth, size of the firm and assets tangibility.

Table 4.4 above summarizes the result of regression analysis. As per the table above, the equation becomes:  $LG = -1.5 + 0.97PF + 0.29AT - 0.3S - .47L + 0.32G$

The standardized coefficients show the change in leverage due to a unit change in the respective explanatory variable. T statistic is the ratio of the respective coefficient and the corresponding standard error.

Profitability has a positive correlation with leverage with a correlation coefficient of 0.97 which is statistically significant. This implies that as profitability increases the use of debt rises. This supports the trade-off theory. As the profitability increases the

costs of financial distress decreases and the firm can use more debt (Ooi, 1999). A firm that has high profitability is motivated to use more debt to benefit from the tax shield benefits that arise due to use of more debt (Myers, 2001).

Assets tangibility has a positive correlation of 0.29 with leverage which is statistically significant at a significance level of 0.004. This implies that the higher the level of tangible assets the more debt the firm uses in its finance structure. This supports the trade-off theory. A firm with high level of tangible assets can use them as collateral hence reducing the financial distress costs and attracting debt from investors. This confirms the study by Rajan and Zingales in 1995 which established a positive relationship between assets tangibility and leverage.

Size of the firm has a negative correlation with leverage of 0.03 at a significance level of 0.024. This signifies that large firms use less debts and small/medium firm use higher leverage. This supports the study by Titman and Wessels (1988) which proposes that large firms prefer raising their finance internally due to information asymmetry and to avoid neutralizing the ownership. This also supports the pecking order theory as firms prefer exploiting the internal resources before using debt.

Liquidity has a negative relationship with leverage which is statistically significant at 0.015. This implies that firms with high liquidity use less debt. This supports the pecking order theory. Firms that are liquid borrow less as they first exploit the internal funds before considering use of debt and other external sources of finance (Drobetz & Fix, 2003).

Growth has a positive correlation of 0.32 which is statistically insignificant at 0.080. This suggests that firms that with percentage increase of total sales the firms borrow more. This is line with the pecking order theory as the firm is experiencing growth it

requires a lot of funds to finance the growth. It hence exploits the internal resources and thus has to seek debt to finance the growth expenses.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMEDATIONS**

### **5.1 Introduction**

This section presents the summary of the findings, conclusions, recommendations, limitations of the study and suggestions for further research.

### **5.2 Summary of Findings**

The objective of the study was to establish the determinants of capital structure decision for internet service providers in Kenya. The study analyzed the secondary data of the financial statements for the target population between 2009 and 2013 using descriptive statistics and regression analysis. The variables of the study were five independent variables and a dependent variable. The independent variables were tangibility of assets, liquidity, profitability, growth of the firm and the firm's size. The dependent variable was leverage. Hence a regression analysis was used to establish the relationship each of the independent variables has with the dependent variable.

The study reviewed the pecking order, trade off and agency cost theory to examine how they explain the various factors that determine the capital structure decision.

The findings of this study reveal that profitability, tangibility of assets and growth of the firm have a positive relationship whereas size and liquidity have a negative relationship with leverage. Growth is the only factor that was found to be insignificantly correlated with leverage.

Growth had a positive relationship with leverage. This supports the pecking order theory which suggests that firms first utilize internally available resources before using external sources. A firm that is growing hence has limited internal sources of funds and therefore uses more leverage. Size of the firm has a negative relationship with leverage. This confirms the agency theory which proposes that large firms prefer

internal financing to debt to avoid agency costs and avoid diluting the ownership. For assets tangibility, the study obtained a positive relationship. This supports the trade-off theory and agency cost theories. The negative relationship between liquidity and leverage is in line with the pecking order theory which proposes that firms exploit internal funds before considering external sources of financing.

### **5.3 Conclusion**

Existing literature proposes that determinants of capital structure differ from one industry to another due to the different environments and capital requirements ((Titman & Wessels, 1988). Internet Service Providers in Kenya is one of the industries that is becoming significant due to the massive and rapid adoption of technology. No studies has focused on establishing the determinants of capital structure for this industry hence this study was found to be significant.

Firms finance their operations and growth using either debt or equity. The proportion of debt to equity defines the leverage levels of firms. The main theories that try to explain this relationship are pecking order theory, MM irrelevance theory, agency cost theory, trade off theory and market timing theory. The independent variables in this study were assets tangibility, profitability, liquidity, growth and size of the firm. Regression analysis was used to examine the relationship between each of the independent variables and the dependent variable(leverage).The findings of the study was that all the independent variables in this study have a correlation with leverage. Profitability, size of the firm, assets tangibility and liquidity were found to significantly influence the leverage levels. Assets tangibility, profitability and growth have a positive relationship with debt. Liquidity and size of the firm have a negative relationship with leverage.

## **5.4 Recommendations for Policy and Practice**

Some of the factors to consider in determining a capital structure include asset tangibility, profitability, and liquidity, size of the firm and growth of the firm. Profitability is a major factor that firms should consider in choosing their capital structure as they will gain much from the tax shield. Firms should also consider their assets structure in making their financing decisions. The findings of this study can be used by the financial consultants in advising their clients in this industry on the factors they should consider before the capital structure of their organizations. This study can guide the firms on the factors they should analyze in arriving at an optimum capital structure.

## **5.5 Limitations of the Study**

Accessing the financial data was a challenge as some of the firms in the sample are private companies and thus treat such information with high confidentiality. This limitation was overcome by great conviction that the information was only required for research purposes and the information would be held with confidentiality.

There was a limitation of time as the study was carried out to fulfill the partial requirement for the award of a degree of Masters of Business Administration the limited time frame given limited the scope for a wider research.

## **5.6 Suggestions for Further Studies**

This study has considered the internet service providers which is just a small segment of the telecommunications industry further research should be done to establish determinants of capital structure for other sectors of this industry. These sectors include network facility providers, application service providers, content service providers and undersea capacity providers.

Further research should be done entailing more independent variables. This is because the factors that were considered for this particular study do not fully explain leverage meaning that there are some more factors that influence the financing decision. A research should be done including more independent variables.

A study should be carried out providing an explanatory model that can be used at arriving at an optimal capital structure. This study has just established on the determinants of capital structure but further research should be done on how firms can arrive at an optimal capital structure.



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## APPENDICES

### Appendix 1: Licensed ISPs in Kenya

	<b>Company Names</b>	<b>Region</b>
1	Access Kenya Group Limited	Nairobi
2	Adtel Phone Co. Limited	Nairobi
3	Fleet Management Solutions Limited	Nairobi
4	Africa Online	Nairobi
5	Airtel Networks Kenya Limited	Nairobi
6	Airtouch Connections Limited	Nairobi
7	Aja Limited	Nairobi
8	Alldean Networks Limited	Nairobi
9	Attain Enterprise Solutions Limited	Nairobi
10	AU GAB SERVICES	Garissa
11	Backtrack Technologies Limited	Nairobi
12	Bandwidth & Cloud Services Limited	Nairobi
13	Bell Western Limited	Nairobi
14	Beneficial Solutions and Technocrats Limited	Nairobi
15	Bernsoft Interactive Limited	Nairobi
16	Birdseye Auto Track Limited	Nairobi
17	Boss Communications Company	Nairobi
18	Callkey (E.A) Limited	Nairobi
19	Cellulant Kenya Limited	Nairobi
20	Commcarrier Satellite Services Limited	Nairobi
21	Comtec Hosting Solutions Limited	Nairobi
22	Converged Information Services Limited	Nairobi
23	Craft Silicon Limited	Nairobi

24	Databit Limited	Nairobi
25	Diamond Online Satellite System	Nairobi
26	Digital Distribution Centre (K) Limited	Nairobi
27	Elige Communications Limited	Nairobi
28	Electronic and Transmission Media Limited	Nairobi
29	EM Communications Limited	Nairobi
30	Embarq Limited	Nairobi
31	Emerging Markets Comm. (K) Limited	Nairobi
32	Enterprise Data Freedom Limited	Nairobi
33	Essar Telecom Kenya Limited	Nairobi
34	Fanaka Online Limited	Kisumu
35	Finnet Communications Limited	Nairobi
36	Flex Communications Limited	Nairobi
37	Fourth Generation Networks Ltd	Nairobi
38	Frontier Informatics Limited	Nairobi
39	Frontier Optical Networks Limited	Nairobi
40	Gateway Telecommunications (Kenya)Limited	Nairobi
41	Geda Limited	Nairobi
42	Gelati Limited	Nairobi
43	Glocal Data Solutions Limited	Nairobi
44	Horyal Services Limited	Nairobi
45	Hotego Networks Limited	Nairobi
46	Icon Wireless Limited	Nairobi
47	Indigo Telecom Limited	Nairobi
48	Industrial Technology Trading Company Limited	Nairobi
49	Instaconnect Limited	Nairobi
50	Intergrat Limited	Nairobi
51	Internet Solutions Kenya Limited	Nairobi
52	Iphone Global Ltd	Nairobi
53	Itek Solutions Limited	Nairobi
54	IWayAfrica Kenya Limited	Nairobi
55	Jadalink Kenya	Nairobi

56	Jamii Telecommunications Limited	Nairobi
57	Karibu Telecom Limited	Nairobi
58	Kasnet Internet Services Limited	Nairobi
59	Kentrace And Accessories	Nairobi
60	Kenya Data Networks Limited	Nairobi
61	Kinde Engineering Works Limited	Nairobi
62	Klass Image Limited	Nairobi
63	Lantech (Africa) Limited	Nairobi
64	Linkers International Limited	Nairobi
65	Lyle Kenya Limited	Nairobi
66	Mobile Telephone Networks Business Kenya Limited	Nairobi
67	Nairobinet (K) Limited	Nairobi
68	Next Generation Networks Telecommunications (EA)	Nairobi
69	Nia Moja Business Solutions (K) Limited	Nairobi
70	Ninewinds Communications Limited	Nairobi
71	Nirali Enterprises Limited	Nairobi
72	Ocean Five Telecom Kenya Limited	Nairobi
73	Octopus Ict Solutions Limited	Nairobi
74	Onmobile Kenya Telecoms Limited	Nairobi
75	Orca Bay Data Solutions Limited	Nairobi
76	Oyster Enterprises Limited	Nairobi
77	Plans Online (k) Limited	Nairobi
78	Porting Access (K) Limited	Nairobi
79	Pwani Telecoms Limited	Mombasa
80	Rainbow Network Solutions Limited	Nairobi
81	Rasmilink	Nairobi
82	Safaricom Limited	Nairobi
83	Sahanet Limited	Nairobi
84	Sat Africa Limited	Nairobi
85	Sea Submarine Communications Limited	Nairobi
86	Servtel Communications Limited	Mombasa
87	Sisi Communications Limited	Nairobi



88	SITA	Nairobi
89	Sovaya Communications Limited	Nairobi
90	Speedial Connections Limited	Nairobi
91	Suuban Enterprises	Nairobi
92	Swift Global (K) Limited	Nairobi
93	Telkom Kenya Limited	Nairobi
94	Total Security Surveillance Limited	Nairobi
95	Toucan Network Limited	Nairobi
96	Tracer Limited	Nairobi
97	Tracesoft Limited	Nairobi
98	Tracer Limited	Nairobi
99	Tuseme Africa Limited	Nairobi
100	Universal Connect Limited	Nairobi
101	UUNET Kenya Limited	Nairobi
102	Uvacorp Technologies Limited	Nairobi
103	Valley point Telecoms Limited	Nairobi
104	VirtualSat Limited	Nairobi
105	Vision Network Solutions Africa Limited	Nairobi
106	VOIP Pro(K) Ltd	Nairobi
107	Wananchi Group Kenya Limited	Nairobi
108	Web Tribe Limited	Nairobi
109	Wifismartzzone Solutions	Nairobi
110	Wingu Technologies Limited	Nairobi
111	Xtranet Communications Limited	Nairobi
112	Diamond Online Satellite Systems	Nairobi
113	Sahanet Limited	Nairobi
114	Onmobile Kenya Telecoms Limited	Nairobi
115	Backtrack Technologies Limited	Nairobi
116	Callkey (E.A) Limited	Nairobi
117	Valleypoint Telecoms Limited	Nairobi
118	Hausraum Limited	Nairobi
119	Eureka Technical Services Limited	Nairobi

120	Tiben Technologies Company Limited	Nairobi
121	Autoscope International Limited	Nairobi
122	Ells Limited	Nairobi
123	Bandwidth Providers East Africa Limited	Nairobi
124	Hirani Telecommunication Limited	Nairobi
125	Compfix Data Limited	Nairobi
126	C Hear (K) Limited	Nairobi
127	MOUNT KENYA ONLINE	Nairobi
128	Azanuru Technologies Limited	Nairobi
129	Cable One Limited	Nairobi
130	Track & Trace Limited	Nairobi
131	Mobile Pay Limited	Nairobi

**Source: Register of Unified Licensing Framework Licensees, Communication Commission of Kenya September 2014**

## Appendix II: Target Population & Sample Size

Name of operator	Sep 2014	Market share (%)	Dec 2014	Market share (%)
Wananchi Telecom Limited	55,936	48.8	44,254	44.2
Liquid Telecom Limited	18,050	15.7	18,050	18.0
Telkom Kenya Limited	12,002	10.5	11,894	11.9
Access Kenya Limited	11,502	10.0	11,502	11.5
Safaricom Limited	8,244	7.2	7,499	7.5
Jamii Telecommunication Limited	2,574	2.2	2,574	2.6
Iway Africa	3,271	2.9	1,351	1.3
Mobile Telephony Networks Limited	1,327	1.2	1,327	1.3
Internet solution	742	0.6	742	0.7
Call Key Networks Limited	543	0.5	547	0.5
Tangerine Limited	202	0.2	-	-
Other fixed/Terrestrial wireless operators	346	0.3	391	0.4

Source: Quarterly Statistics Report 2<sup>nd</sup> Quarter FYR 2014/2015 Sept-Dec 2014

### Appendix III: Data Collection Sheet

<b>Year</b>	<b>Interest Bearing Debt</b>	<b>Fixed Assets</b>	<b>Current Assets</b>	<b>Total Assets</b>	<b>Change in total assets</b>	<b>Earnings Before Interest Tax(EBIT)</b>	<b>Total Sales</b>
<b>2009</b>							
<b>2010</b>							
<b>2011</b>							
<b>2012</b>							
<b>2013</b>							