Effect of Capital Structure on Financial Performance among Manufacturing Firms in Kenya

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1. Introduction
Performance has been defined as the result of activity, and the appropriate measures selected to assess future growth. It is the measurement of what has been achieved by a company which shows good condition for a certain period of time. Corporate performance is considered as being dependent on the type of organization to be evaluated, and the objectives to be achieved through that evaluation (Kiaritha, 2015). Financial performance is a measure of how well a firm has used assets from its primary mode of business to generate profits. This term is also used as a general measure of a firm’s overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation (Javed et al., 2012). A related explanation defines financial performance as the measure of the efficiency with which the firm uses various funds to generate a return to providers of the funds.

Sunder and Myers (2009) aver that organizational performance encompasses three specific areas of firm outcomes that include financial performance (profits, return on assets, return on investment), product market performance (sales, market share) and shareholder’s return (total shareholder return, economic value added). Uzel et al., (2015) observed that performance can be looked at in terms of four perspectives which are the financial, customer, internal processes and innovativeness. The financial perspective identifies the key financial drivers of enhancing performance which are profit margin, asset turnover, leverage, cash flow, and working capital (Odhuon, Kambona, Odhuno, & Wadongo, 2010). The customer focus describes performance in terms of brand image, customer satisfaction, customer retention and profitability (Lo & Lee, 2010).

Academics as well as operations managers have used various parameters to measure performance. Recent approaches to performance measurement have identified inadequacies of solely relying on quantitative and short term indicators and have henceforth developed comprehensive models such as performance pyramids and hierarchies, intangible assets scorecard, performance prism, success dimensions and the Balanced Scorecard with the aim of capturing both the financial and non financial drivers, (Uzel et al., 2015). The financial objectives of profit-oriented businesses are closely related to the need of the external suppliers of company’s capital - shareholders. The main interest of shareholders are the rate of return on their capital which includes dividends and capital gains on the market value of their shares for a period divided by the share value at the start of a period. As earnings determine what can be paid out as dividends in the long run, shareholders and their agents (such as investment analysts) are primarily concerned with financial measures like earnings, earnings per share (EPS), dividend yield, dividend cover and ROI. That is why the shareholders of the company seek to hold their managers accountable for the performance of the assets entrusted to them. External financial reports are intended to meet these needs.

Pandey (2011) gives the conventional corporate finance reason of why firms must make profit. He asserts that a company should earn profits to survive and grow over a period of time. Further, Pandey (2011) notes that a firm must earn
sufficient profits to sustain operations of the business to be able to obtain funds from investors for expansion and growth and to contribute towards the social overheads for the welfare of the society. Since manufacturing firms compete in the same market with other non-manufacturing firms, an important question is whether they offer social returns commensurate with other investment opportunities. Liang, Haiyang & Wang (2015) in their study on social capital, member participation, and cooperative performance found that social capital has a significant and positive impact on the economic performance of cooperatives. In evaluating determinants of financial performance in manufacturing firms, an important question is whether the traditional corporate goal of profit maximization holds.

Organizations have accepted the importance of performance management as a crucial step for proper functioning of a company and maintaining its profitability. Factors affecting financial performance can be internal or external. External factors originate from the environment. Studies have proven that access to growth opportunities in the environment and to resources directly influences the actual performance of the firm (Davidson et. al., 2006). Okiro (2014) avers that financial performance may be gauged by an increase in certain parameters of the firm such as employment, revenue, profit, assets etc. Performance may depend on firm size, age and market power. Firms with a higher availability of external finance perform better (Beccchetti and Trovato, 2010). Fitzimos et. al., (2005) found that firm performance is dependent on industry, age and size.

Global Manufacturing Industry

The manufacturing industries sector is one of the most important economic sectors, because of their role and high impact in the development of the economy at the local and global level. The manufacturing sector in the developed nations is large and contributes significantly to the economic development. The sector cannot be ignored in the process of economic development in any state as it remains one of the most powerful engines for economic growth (Khalifa et. al., 2013). It acts as a catalyst to transform the economic structure of countries from simple, slow growing and low value activities to more vibrant and productive economies (Kungu, 2015). Despite the decline in manufacturing sector in the west, in UK, the sector was third largest in 2013 after business services and wholesale/retail in terms of share of UK GDP. Manufacturing sector generated one hundred billion pounds in gross value added. This represents more than 12% of the UK economy. It employed 2.8 million people, representing over 8% of total UK employment (BIS, 2014). In Ireland, the sector accounts for 46% of its GDP, 29% of total employment and 80% of its exports.

Regional Perspective of the Manufacturing Sector

In Africa, manufacturing sector is equally important. In Namibia, the sector accounts for an average of 10.3% of the GDP and 8% of the total employment and 34.8% of its exports. In South Africa, the sector accounts for an average of 17.4% of its GDP, 9% employment and 40% of its total exports. As nations achieve higher levels of economic growth, manufacturing sector seems to contribute more to the GDP, employment levels and the exports (Kungu, 2015). The manufacturing sector plays a big role in national income of African countries. The sector contributes to the progress of the African economies, increased rate of economic growth, diversified production, reduced imports, and expanded the economic infrastructure (Njoroge, 2008). The share of the manufacturing sector in total employment and per capita manufacturing value added are rough indicators of industry’s contributions in the social, economic and environmental dimensions of African countries. The economic role of industry in sustainable development presents per capita manufacturing value added as a general indicator of industrial development in the economic perspective. One important contribution of industry to the social component in sustainable development is creation of employment (Rissa, 2014).

Kenya Manufacturing Sector

In Kenya Manufacturing firms have become an important contributor to the economy. The sector contributes to the national objective of creating employment opportunities and generating income for the economy (Njoroge, 2008). The sector leads in foreign exchange earning accounting for 34% of the total earnings (Kenya Association Manufacturing [KAM], 2013). There are about 2071 manufacturing firms in Kenya according to the ministry of industrialization data bank. Majority of manufacturing firms in Kenya, employ up to 100 workers (GOK, 2009). There were 870 manufacturing firms in the directory of Kenya association of manufacturers (KAM, 2013). The KAM is a membership organization whose role is to provide leadership and services aimed at enhancing the development of a competitive manufacturing sector in Kenya. In Kenya the manufacturing sector is expected to remain a vibrant and strong contributor to sustained recovery and growth of the Kenyan economy (Kungu, 2015).

The manufacturing sector remains the largest source of employment opportunities, accounting for about 20% of the total employment or 2,105,000 persons in 2012 (GOK, 2013). As an important sector in the overall economic growth, manufacturing sector requires an in depth analysis at industry as well as firm level. This sector occupies an increasing importance in the development plans in developing countries which seeks to break the cycle industrial underdevelopment have in order to achieve economic development. Manufacturing sector today has become the main means for developing countries to benefit from globalization and bridge the income gap with the industrialized world (Amakom, 2012).

Kenya’s vision 2030 identified the manufacturing sector as one of the key drivers for realizing a sustained annual GDP growth of 10 per cent. Kenya Vision 2030 is the country’s development blueprint aimed at transforming Kenya into a newly industrialized middle income country providing a high quality of life to all citizens by the year 2030. Bigsten et. al., (2010), manufacturing sector has high potential in employment creation and poverty alleviation. Kenya aims to become the provider of choice for basic manufactured goods in Eastern and Central Africa. This will be achieved through improved efficiency and competitiveness at firm levels.

Kenya also aims to strategically increase the level of value addition in niche exports by additional processing of local agriculture products. The manufacturing sector contributed 8.9 per cent of GDP and provided 12.4 per cent of employment in the formal sector in 2013 (Kenya Economic Report, 2014). Although this seems to be a good performance, it is below the 10 per cent contribution target per annum anticipated in the Kenya’s vision 2030. The major problem attributed to this is unfair competition emanating from illicit and illegal trade (Kenya manufacturing survey, 2012).

Investors measure overall company performance in order to be able to make the right investment decisions. The financial performance measures have a variety of users but
they are assumed to be of primary interest to shareholders as they entrust their money to company managers who are responsible for the application of capital but may have no incentives to increase shareholders value (Raul et. al., 2010). Additionally, agency theory argues that unless managers are monitored constantly they act in self-interest, which might be at variance with interests of shareholders. But this variance can be reduced through the added costs of monitoring or designing appropriate incentive structures. In order to achieve goal congruence, managers’ compensation is often linked with the performance of the responsibility centers and also with overall company performance (Cheng, Ioannou & Serafeim, 2014).

Moreover, for the case of Kenya it is valid to note that members want to earn a dividend and how much dividends manufacturing firms can pay is a function of how well assets have been deployed to generate revenue, and how well cost elements have been managed. Further, applying the profit maximization approach to modeling financial performance would not negate the principal of maximizing member’s profitability benefit advanced by Fried et. al., (2006). Since in this study the objective is to identify the determinants of financial performance of manufacturing in Kenya, two issues have to be addressed. These are how to measure financial performance and then how to attribute financial performance to variables posited to be the determinant of performance. Traditionally, analysis of financial statements using ratio analysis is the most common method employed in measuring financial performance of business entities. For instance, Pandey (2011), notes that return on equity (ROE) ratio is one of the most important relationship in financial analysis. Additionally Ogindo (2006), observes that profitability indicators such as return on equity (ROE) and return on assets (ROA) tend to summarize performance in all areas of the company. If portfolio quality is poor or efficiency is low, this will tend to be reflected in these ratios. Gupta, (2010) uses both ROE and ROA to measure profitability.

Relationship between determinants and financial performance

Capital structure decisions attract numerous interests in corporate finance from many scholars and researchers, mainly to prove or disapprove the earlier theoretical backgrounds such as the pecking order, Modigliani and Miller propositions and the static trade-off theories and their relationship with firms’ performance. Studies have been carried out to probe these propositions, Pouraghajan et. al., (2012) argues that there is a strong negative and significant relationship between debt ratio and performance of firms, that is, companies that have a high debt ratio will have a negative impact on firm performance and value. Okito (2014) in a study of corporate governance, capital structure and performance of firms listed at the East African community securities exchange found a significant relationship between capital structure and financial performance.

Recent studies argue that capital structure play an important role in determining financial performance. Javed et. al., (2012) suggest that entities with higher profit rates will remain low leveraged because of their ability to finance their own sources. On the other hand, a high degree of leverage increases the risk of bankruptcy of companies. Ehinmobowei et. al., (2013) investigated the impact of capital structure on performance of quoted firms in the Nigerian Stock Exchange. The result reveals that short term debt, long term debt and total debt have significant negative relationship with performance. On the basis of result, they concluded that capital structure affects the performance of firms. Ahmad et. al., (2012) documents that firms that are profitable and therefore generate high earnings are expected to use less debt capital than those who do generate low earnings. Ramadan et. al., (2009) on the relationship between capital structure and firm’s financial performance in the UK capital market reveal negative and significant relationships between debt level and firm’s financial performance.

In another study on determinants of corporate capital structure among private manufacturing firms in Kenya, the authors found a negative relationship between firm profitability and capital structure (Kariuki et. al., 2014).

The study arises from the need to establish the determinants of financial performance of manufacturing firms. In Kenya, manufacturing sector is the second most important sector after agriculture. It is important in terms of contribution to gross domestic product, employment and foreign exchange earnings. In the last decade, the manufacturing sector has been struggling to thrive and some key firms in the sector have closed operations due to unfavorable working conditions (Kungu, 2015). The rapid growth of the manufacturing sector in most developing countries like Kenya has a number of implications for activities in this sector to implement reforms necessary to strengthen such sectors (Rowe, 2009). Such improvements may include steps such as privatization, trade development, regulatory and competitive framework reviews and industrial productivity.

There is need to understand the determinants of financial performance of manufacturing firms. High performance reflects management effectiveness and efficiency in making use of company’s resources and this in turn contributes to the country’s economy at large (Naser, and Mokhtar, 2004). The most serious barriers to proper financial performance include lack of comprehensive financial performance policies in many organizations (Njoroge, 2008). Organizations have accepted the importance of performance management as a crucial step for proper functioning of a company and maintaining its profitability. It is the role of the modern financial manager to understand how organizations are affected by financial performance. Manufacturers are in constant flux, changing and adapting to new innovations in their search for profit opportunities. A study by Gupta et. al., (2010), on capital structure and financial performance in India concluded that companies that have high profitability and good performance have less debt. Ummar et. al., (2012) in their study on the impact of capital structure on financial performance in Pakistan concluded that capital structure choice is an important determinant of financial performance of firms.


Earlier work on performance in Kenya only focused on business performance of small and medium enterprises (Memba, 2011). A study by Githae (2012), on the effect of

**Hypothesis of the Study**

The researcher tested the following null hypothesis:

**H0**: Capital structure does not significantly affect financial performance among manufacturing firms in Kenya.

The main purpose of this study was to establish the effects of determinants on financial performance among manufacturing firms in Kenya. The beneficiaries of this study would be:

**Scope of the Study**

The study focused on determinants of financial performance such as capital structure, debt structure, taxation policies and type and access to finance and their effect on manufacturing firms. The manufacturing sector is vital for economic growth of this economy. It is therefore imperative to have a better understanding of determinants of financial performance to enhance growth of the sector. The study covered only manufacturing firms in Kenya. The non-manufacturing firms were excluded from the study. Small and medium enterprises were also excluded from the study as most of them have stagnated growth and were not be appropriate for the purpose of this study.

2. **Related Literature**

**Theoretical Framework**

**a. Capital Structure Theory**

The Modigliani-Miller theorem, proposed by Franco Modigliani and Merton Miller, (1958), forms the basis for modern thinking on capital structure. It disregards many important factors in the capital structure decision. The theorem states that, in a perfect market, how a firm is financed is irrelevant to its value. The result provides the base with which to examine real world reasons why capital structure is relevant, that is, a company’s value is affected by the capital structure it employs.

Modigliani and Miller considered a perfect capital market with no transaction or bankruptcy costs and with perfect information. The theory assumed that firms and individuals can borrow at the same interest rate, no taxes and investment decisions aren’t affected by financing decisions. Modigliani and Miller made two findings under these conditions.

Their first ‘proposition’ was that the value of a company is independent of its capital structure. Their second proposition states that the cost of equity for a leveraged firm is equal to the cost of equity for an unleveraged firm, plus an added premium for financial risk. That is, as leverage increases, while the burden of individual risks is shifted between different investor classes, total risk is conserved and hence no extra value created. Their analysis was extended to include the effect of taxes and risky debt. Under a classical tax system, the tax deductibility of interest makes debt financing valuable, that is, the cost of capital decreases as the proportion of debt in the capital structure increases. The optimal structure then would be to have virtually no equity at all.

Miller and Modigliani in their second “irrelevance” proposition indicate that given a firm’s investment policy, the dividend pay-out it chooses to follow will affect neither the current price of its shares nor the total return to its shareholders (Okelo, 2015). In other words, in perfect markets, neither capital structure choices nor dividend policy decisions matter. Studies have shown the use of certain factors in determining the financial leverage of the firm, hence the financial performance. These studies include Ferma and French (2012), Avramov, Chordia & Jostova, (2009). Kumar (2008) points out that numerous documented researches showing a fall in equity prices just before the announcement of new equity issue and in the few years that follow hence validating the M & M leverage “irrelevance” theory.

**b. Trade-off Theory**

Trade-off theory suggested by Jensen and Meckling (1976), allows bankruptcy cost to exist. It states that there is an advantage to financing with debt, that is the tax benefits of debt and that there is a cost of financing with debt that is the bankruptcy costs and the financial distress costs of debt. The marginal benefit of debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing (Jensen, 1976).

Stulz (1990) like Jensen believes that debts payment decreases cash flows available for managers. But, on the other hand, he states that this decrease will reduce the opportunities of profitable investing. Thus, companies with less debt have more opportunities for investment and in comparison with other active firms in industry, have more liquidity. Additional costs of debt include potential bankruptcy costs, and agency costs associated with the monitoring of investments by bondholders. Costs and benefits of alternative financial sources are “traded off” until the marginal cost of equity equals the marginal cost of debt, yielding the optimal capital structure, and maximizing the value of the firm.

**c. Pecking Order Theory**

Pecking order theory discussed by Meyers (1984), Myers and Majluf (1984) and Fama & French (2002), describes a firm’s debt position as the accumulated outcome of past investment and capital decisions. This theory points out that because of information asymmetry between managers and investors about the firm’s investment opportunities, the market may undervalue a firm’s new shares relative to the value that would be assessed if managers’ information about their firm’s investment opportunities were revealed to the market. Thus, issuing new shares may harm existing shareholders through value transfer from old to new shareholders.

Managers will prefer financing new investments by internal sources (i.e. retained earnings) first, if this source is not enough then managers seeks for external sources from debt as second and equity as last. Thus, according to the pecking order theory firms that are profitable and, therefore, generate high earnings to be retained are expected to use less debt in their capital structure than those do not generate high earnings, since they are able to finance their investment opportunities with retained earnings. Pecking Order theory states that companies prioritize their sources of financing from internal financing to equity. Therefore internal financing is used first then when that is depleted, then debt is issued and
when it is no longer sensible to issue any more debt, equity is issued.

The theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required (equity would mean issuing shares which meant 'bringing external ownership' into the company). Thus, the form of debt a firm chooses can act as a signal of its need for external finance. The pecking order theory is popularized by Myers (1984) when he argues that equity is a less preferred means to raise capital because when managers issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this overvaluation. As a result, investors will place a lower value to the new equity issuance.

d. Agency Theory

Agency relationship is one in which one or more persons (the principal(s)) engages another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent. Jensen and Meckling (1976) developed agency theory where agency costs are defined as the sum of the monitoring expenditures by the principal, bonding costs by the agent, and a residual loss. The existence of agency problem will arise due to the conflicts either between managers and shareholders (agency cost of equity) or between shareholders and debt holders (agency costs of debt).

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A reliable tool to control agency cost can be the use of debt capital. Leverage will force managers to generate and pay out cash, simply because interest payments are compulsory. Interest payments will reduce the amount of remaining cash flows. Thus, debt can be viewed as a smart device to reduce the agency costs (Zurigat, 2009). The agency theory focuses on the divergence of interests between managers and stockholders. Okiro (2014) postulates that stockholders are wealth maximizers while managers maximize a utility function that include remuneration, power, job security and status.

Conceptual Framework

In this study, the independent variables were the conceptualized determinants of financial performance. The independent variables of the study is capital structure. The variables were adopted from the studies of (Javed et al., 2012 and Bhunia, 2012) which are considered relevant for the purpose of the current study. The dependent variable is financial performance and the operationalization of the variables is shown in figure 2.1

Capital Structure
- Equity
- Debentures
- Retained earnings

Financial Performance
- Return on assets
- Sales growth
- Profitability
- Return on equity

Independent variables  | Dependent variable
--- | ---
Equity is classified as common stock, preferred stock or retained earnings. It is that part of capital which is free of debt and represents ownership interest in a firm. It is therefore that amount contributed by the owners and normally includes ordinary share capital, preferential capital, retained earnings and reserves. Like debt providers, equity providers also earn returns in form of dividends from the profits generated by the firm (Mwangi, 2016). Preference shareholders receive their dividends at an agreed rate before the ordinary shareholders and any unappropriated profit is retained for firm’s expansion programs (Titman et al, 2011).

Equity is one source of capital a company may use to finance its operations (Higgins, 2001). Many analysts define equity as the net worth of a company, the value of the assets less the value of the liabilities. The value of the equity of a business is whatever remains after the company satisfies all of the claims of its creditors. The studies are supported by Ahmad (2012) who documents that firms that are profitable and therefore generate high earnings are expected to use less debt capital than those who do not generate high earnings. Hence, internal funds are used first, and when that is depleted, debt is issued, and when it is not sensible to issue any more debt, equity is issued (Ali et al., 2011). A study by Gupta et al., (2010), on capital structure and financial performance of publicly quoted companies in India concluded that companies that have high profitability and good performance have less debt. A study by Javed et al., (2012) on the relationship between capital structure and financial performance in Karachi stock exchange found a positive relationship between leverage, financial performance, and growth.

Ebitmobeowo et al., (2013) investigated the impact of capital structure on performance of quoted firms in the Nigerian Stock Exchange for thirty two firms. The result revealed that short term debt, long term debt and total debt have significant negative relationship with performance. Further the results revealed that return on asset and return on equity and tangibility and efficiency have a positive relationship with performance while non-tax debt and liquidity shows negative relationship with performance. On the basis of result, they concluded that capital structure affects the performance of firms. Okiro (2014) in a study of corporate governance, capital structure, regulatory compliance and performance of firms listed at the East African community securities exchange found a significant relationship between capital structure and financial performance.

Debt financing is a major source of capital for most firms. The decision about how much of the firm’s capital stock should be financed by borrowing vs. equity or cash is usually called the leverage or gearing decision (Okelo, 2015). A firm is said to be “highly levered” or “highly geared” if it has a lot of debt relative to the amount of its equity. Debt financing occurs when investors provide capital in the form of loans for the managers of a company to use to operate the business. The company, in return, promises to repay the capital to the investors plus a rate of interest for the use of the capital. Debt financing is cheaper than equity financing because interest on debt is tax deductible but it is a more risky source of funding because repayments have to be made regardless of whether the firm makes profits or losses. Debt financing becomes expensive to the firm at the point where a firm is highly leveraged because subsequent lenders will charge higher interest rates.

Banks require the company to have collateral to secure the loan, but this requirement often is negotiable (Pandey, 2011).

There are two opposite views regarding the relationship between profitability and leverage. Myers and Majluf (1984) in the pecking order theory suggests that firms prefer raising capital from retained earnings, then from debt, then from issuing equity. If pecking order applies, then higher profitability will correspond to a lower debt ratio. As a result, the pecking order theory implies a negative relationship between leverage and profitability (Okelo, 2015). In the trade-off theory, agency costs, taxes and bankruptcy costs incline more profitable firms towards higher leverage. First, expected bankruptcy costs decline when profitability increases. In addition, if past profitability is a good proxy for future profitability, profitable firms can borrow more, as the likelihood of paying back the loans is greater. Secondly, the tax deductibility of corporate interest payments induces more profitable firms to finance with more debt. In the agency models of Jensen and Meckling (1976), higher leverage helps control agency problems by forcing managers to pay out more of the firm’s excess cash in interest payments. Accordingly, the trade-off theory predicts a positive relationship between profitability and leverage.

Debt structure is the ratio between current liabilities and long-term liabilities (noncurrent liabilities) in the total liabilities of the enterprise. Compared with the long-term debt financing, current liabilities financing is short-term, low cost and more debt risk relatively. Total debt include short and long term borrowings from financial institutions, debentures, bonds, deferred payment, bank borrowings and any other interest bearing loan. Abor (2005), on capital structure and profitability of SMEs in Ghana, show that short-term debt ratio is positively related with return on equity. To investigate the effect of leverage and the financial performance of listed firms in Kenya, Maina and Kondongo (2013) found a significant negative effect of debt and profitability but no effect on firm value over the period 2002 – 2011.

Capital structure influences both profitability and riskiness of the firm. The greater the gearing a firm exhibits, the higher the potential for failure if cashflows fall short of those necessary to service debts. Several studies indicate that a firm’s capital structure decisions are affected by several firm related characteristics such as future growth options, earnings volatility, profitability and control (Titman and Wessels, 2006; Okelo, 2015). Studies such as Mirie (2015), have explained factors influencing capital structure from the perspective of asymmetric information and agency theory. In the international context, country norms, type and size of industry and host government controls could play a role in determining capital structure (Rajan and Zingales, 2005).

In a study on factors influencing capital structure in developing countries, Rajan and Zingales (2005) reported that an increased debt ratio is associated with firm size. It is argued that large firms tend to well diversified and hence less likely to go bankrupt. Lower expected costs enable large firms to take on more debts. Therefore profitable firms will employ more debt since they are likely to have a high tax burden and low bankruptcy risk (Ooi, 2005). However, Myers (1984) prescribes a negative relationship between debt and profitability on the basis that successful companies do not need to depend on external reserves accumulated from past savings. Titman and Wessels (2006) agree that firms with with high profit rates, maintain a relatively lower debt ratio since
they are able to generate such funds from internal sources. This was supported by Graham (2009) who concluded that big and profitable companies present a low debt rate.

Owing to the problems associated with accessing alternative credit facilities, a large proportion of Kenyan manufacturing firms rely more on self-financing in terms of retained earnings. The implication therefore is that the firms do not have adequate credit to meet the needs at different levels of growth. Therefore, a finance gap exists for firms starting or wishing to expand.

In a study of Jordanian Insurance Companies Yassin (2012), discovered that Leverage, liquidity and firm size have a positive statistical effect on the financial performance. Besides, Coad (2007) analyzing a large longitudinal panel of French manufacturing firms found a positive and statistical relationship between firm growth and financial performance. Afza and Hussain (2011) study on capital structure for firms in Automobile, Engineering, and Cable and Electrical Goods Sectors in Pakistan revealed that firms with sound liquidity position and large depreciation allowances used retained earnings, followed by debt financing for growth while equity financing was considered as a last resort. The results supported the Static Tradeoff Theory and Pecking Order Theory.

**Measurement of financial performance**

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. It is the process of measuring the results of a firm's policies and operations in monetary terms (Mwangi, 2016). It identifies the financial strengths and weaknesses of a firm by establishing relationships between the items of the financial position and income statement. The term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. There are many different ways to measure firms' performance, but all measures should be taken in aggregation. Line items such as revenue from operations, operating income or cash flow from operations can be used, as well as total unit sales (Njeru, 2012).

Quantitative measures of firm performance include profitability measures such as gross margin, net margin for example return on sales, return on equity, economic value added, return on equity less cost of equity and return on capital employed. Other measures of performance include cash flow measures such as free cash flow over sales and growth measures for example historical revenue growth. Ideally, forward-looking measures such as expected profitability, cash flow and growth should be used to measure a firm’s performance (Kiaritha, 2015).

Management researchers prefer accounting variables as performance measures such as return on equity (ROE), return on investment (ROI), and return on assets (ROA). Other common measures of performance include Earnings per share (EPS); Price/Earning (P/E) ratio and net interest margin (NIM). The NIM variable is defined as the net interest income divided by total assets. Okiro (2014) use net interest margin and before tax profit/total assets as measures of financial performance. Earlier studies typically measure accounting rates of return. These include: Return on Investment (ROI), return on capital (ROC), return on assets (ROA) and return on sales (ROS). The idea behind these measures is perhaps to evaluate managerial performance-how well is a firm's management using the assets to generate accounting returns per unit of investment, assets or sales (Membah, 2011). The problems with these measures are well known. Accounting returns include depreciation and inventory costs and affect the accurate reporting of earnings. Asset values are also recorded historically.

Return of total assets (ROA) is the ratio of net income after taxes divided by total assets and reflects how well management uses the firms real investments resources to generate profit (Ongore, 2013). Return on assets indicates how profitable a business is relative to its assets. Nyabwanga, Ojera, Otieno and Nyakundi (2013) assert that return on assets must be positive and the standard figure for return on assets is 10% - 12%. The higher the ROA the better because the business is earning more money on the capital invested. ROA takes into consideration the return on investment (ROI) and indicates the effectiveness in generating profits with its available assets.

Return on equity (ROE) is a frequently used variable in judging top management performance, and for making executive compensation decisions. ROE is defined as net income (income available to common stockholders) divided by stockholders equity. Return on equity (ROE) indicates the return on owners’ equity, hence the higher the better. Earnings per share (EPS) indicate the dollar amount earned on behalf of each common share, thus the higher the better. Price/earnings (P/E) ratio is the amount investors are willing to pay for each dollar of earnings, that is indicates investors’ confidence (Herrmann, 2008). Liquidity is also a measure of financial performance. Liquidity measures the ability to meet financial obligations as they fall due without disrupting the operations of the firm (Mwirie et. al., 2015).

Organizational performance is concerned with the overall productivity in an organization in terms of stock turnover, customers, profitability and market share (Uzel et. al, 2015). When corporate profitability increases, the earnings from the production and operation would be much, and the company has more funds to return the due debt. Profitability refers to the profitability level of enterprise production and management. The more corporate profitability is, the more profits a firm gets from the production and operations, the more able to guarantee of debt due for repayment (Fu Gang, 2012). The amount of profit can be a good measure of performance of a company. So profit is used as a measure of financial performance of a company as well as a promise for the company to remain a going concern in the world of business (Agha, 2014). Moullin (2007) highlights performance measurement as one of the tools which helps firms in monitoring performance, identifying the areas that need attention, enhancing motivation, improving communication and strengthening accountability.

It is widely believed that firm growth and profit rates are related to each other (Coad, 2009, Goddard et. al.,2004). There are a number of theoretical claims that growth rates have a positive impact on profit rate. Firm growth could lead to an increase in firm size resulting to larger firms which could benefit from economies of scale and in turn enhanced profits. Sales growth shows the rate of increase in a company's sales per share, based on several periodic time periods, and is considered the best gauge of how rapidly a company's core business is growing (Javed et. al., 2012). Cash flow tells you how much cash a business is actually generating in its earnings before depreciation, amortization, and noncash charges. Sometimes called cash earnings, it's considered a gauge of liquidity and solvency. Cash-flow growth shows the
rate of increase in a company’s cash flow per share, based on several time periods.

Measures of financial performance include return on sales which reveals how much a company earns in relation to its sales, return on assets determines an organization’s ability to make use of its assets and return on equity reveals what return investors take for their investments. Asset turnover refers to the ratio of sales to average total assets of the firm. It measures the organizations’ efficiency in deploying and utilizing its assets to generate sales revenue. Sales revenue has an effect on financial performance and since asset turnover is related sales, it can therefore be concluded that asset turnover also has an impact on the eventual financial performance of the organization.

Profitability of the firm is net income to average assets. Holding margins and other operating expenses constant, it can be predicted that the higher the asset turnover, the higher the profitability of the firm (Mwirie, 2015). A study by Ongore, (2013) on determinants of banks financial performance concluded that quality of assets has a significant influence on performance. Total assets can have a positive effect on financial performance because larger firms can use this advantage to get some financial benefits in business relations. The advantages of financial measures are the easiness of calculation and that definitions are agreed worldwide.

Traditionally, the success of a manufacturing system or company has been evaluated by the use of financial measures (Tangen, 2013). According to Cornett et. al., (2006), analyzing financial statement using ratio analysis is one way of identifying weaknesses and problem areas of firms as well as evaluating financial performance. Brigham and Ehrhardt (2010), commenting on analysis of financial statements, observe that financial statement analysis involves comparing the firms performance with that of other firms in the same industry and evaluating trends in the firm’s financial position overtime. They note that financial ratios provide a useful tool to evaluate financial statements and single out return on equity (ROE) as the most important accounting ratio.

Regression analysis is the most common methodology of relating the measures of financial performance to variables posited to be the determinants of financial performance (Capon et. al., 2006). Other common multivariate tools used to establish relationship between performance and firms or environmental variables include descriptive statistics (includes tables of means, t-tests, tests of proportions, chi-square), correlation, analysis of variance and other multivariate methods (discriminants, cluster and factor analysis, canonical correlation).

Research Methodology

The study adopted a mixed research design where both quantitative and qualitative data collection techniques and analytical procedures are used in same research design (Saunders et. al., 2009). The study used a survey design that is quantitative in nature in order to gather primary data. Quantitative research made use of variety of quantitative analysis techniques that range from providing simple descriptive aspects of the variables involved, to establishing statistical relationships among variables through complex statistical modeling (Saunders et. al., 2009). The descriptive aspect described the characteristics of the respondents to include gender, age, occupation and education.

The methodology used in this study compared favourably with that of previous empirical studies (Njoroge 2008, Bhunia 2012, Fitzimos et. al., 2005; Githae, 2012 and Gupta et. al., 2010). In all these studies, the quantitative approach by use of surveys done by administration of questions was the primary methodology employed in studying financial performance. This study used similar approach to enhance comparability of findings.

The study focused on manufacturing firms in Kenya (KMA, 2014) with the sample being manufacturers from Nairobi County. The study’s target population was 413 manufacturing firms operating in Nairobi county and its environs. The respondents were be the chief finance officers of manufacturing firms registered with KAM and were in KAM’s 2013 directory. The study focused exclusively on the manufacturing firms that deal with transformation of raw materials and semi-finished products into more complex form or for the final consumers. The 413 firms operated in twelve major industry groups as shown in appendix A.

Qualitative analysis

Qualitative research was used to provide deep interpretation of the research problem by exploring causal relationships among the variables selected in the study. Semi-structured interviews was used to collect data with an interviewer-administered questionnaire. Qualitative data collected through interviews was first edited and response rate calculated. The data was then classified into different categories according to variable. Descriptive statistics such as mean, standard deviation and frequency distribution was used to analyze the data. According to Kothari (2012) descriptive statistics measures the point about which items items have a tendency to cluster and also describes the characteristics of the data collected. Data was presented in form of tables, graphs and pie charts.

Quantitative analysis

Quantitative research was used to describe, explain and quantify relationships between different variables. The aim of researcher was to study the relationship between an independent variable and a dependent variable in the population. The data analysis was done using Scientific Programme for Social Scientists (SPSS) version 24 to facilitate computation of descriptive statistics, multiple regression and Pearson correlation to get answers to the study questions. To test the hypothesis for this study, the independent variables were regressed against financial performance as the dependent variable. The model to be used was adopted from the study by Wanyama (2012) which he used to analyze the effects of corporate governance on financial performance of insurance firms in Kenya.

Multiple regression model was used to model the relationship between the dependent variable Y and independent variables X. The dependent variable, Y, is a discrete variable that represents a category, from a set of mutually exclusive categories. Multiple regression measures the relationship between a categorical dependent variable and one or more independent variables by using predicted values of the dependent variable. The variable FP is a measure of the total contribution of all the independent variables used in the model. The probability of a particular outcome is linked to the linear predictor function. In terms of expected values, this model is expressed as follows:

\[ y = \alpha_0 + \beta_1 x_1 + \epsilon \]

Where:

- \( Y \) = Financial performance
- \( \alpha_0 \) = constant term and is called the “intercept” and \( \beta_1 \), is the “regression coefficients” of independent variables, \( x_1 \). The
intercept is the value of \( Y \) when the values of all independent variables are zero.

\[ \beta_0 = \text{sensitivity of financial performance to capital structure factors} \]

\[ \varepsilon = \text{disturbance term with an expected value of zero.} \]

This model is based on the assumption that the disturbance terms are uncorrelated across firms, meaning that financial performance change only as a reaction to a specific factor. A positive regression coefficient means that the explanatory variable increases the probability of the outcome, while a negative regression coefficient means that the variable decreases the probability of that outcome, a large regression coefficient means that the independent variable strongly influences the probability of that outcome, while a near-zero regression coefficient means that independent variable has little influence on the probability of that outcome.

The basic idea of multiple regression is to use the mechanism for linear regression by modeling the linear combination of the explanatory variables and a set of regression coefficients that are specific to the model at hand but the same for all trials.

**4. Research Findings**

**Analysis on financial performance**

**Means on financial performance**

The manufacturing firms financial performance were assessed by nine measures but after factor analysis these measures were reduced to seven namely enhanced operating income, improved market share, enhanced liquidity position, increased profitability levels, enhanced return on assets, enhanced return on equity and increased sales. This is because factor analysis identified two major factors which had the biggest influence on manufacturing firm’s performance. The significant results showed that the means were statistically different and the null hypothesis was rejected. Factor 1 was profitability which had the first four constructs, factor two was named sales growth with the last three constructs whose means have been identified in Table 4.50.

<table>
<thead>
<tr>
<th>Financial performance measures</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>We have achieved enhanced operating income</td>
<td>142</td>
<td>3.7887</td>
<td>0.08352</td>
</tr>
<tr>
<td>We have had an improved market share over the last five years</td>
<td>142</td>
<td>3.9085</td>
<td>0.09889</td>
</tr>
<tr>
<td>We have achieved an enhanced liquidity position over the last five years</td>
<td>142</td>
<td>3.5563</td>
<td>0.10412</td>
</tr>
<tr>
<td>We have experienced profitability levels over the last five years</td>
<td>142</td>
<td>3.8099</td>
<td>0.08418</td>
</tr>
<tr>
<td>We have achieved an enhanced return on assets over the last five years</td>
<td>142</td>
<td>3.7042</td>
<td>0.08701</td>
</tr>
<tr>
<td>We have achieved an enhanced return on equity over the last 5 years</td>
<td>142</td>
<td>3.6901</td>
<td>0.09115</td>
</tr>
<tr>
<td>We have experienced increased sales growth over the last five years</td>
<td>142</td>
<td>3.9859</td>
<td>0.08994</td>
</tr>
</tbody>
</table>

Key, scale: 1-1.8 strongly disagree, 1.8-2.6 disagree, 2.6-3.4 neither agree nor disagree, 3.4-4.2 agree, 4.2-5 strongly agree.

The highest mean score was registered by increased sales growth with a mean of 3.9859 and the second were improved market share with a mean of 3.9085. The third were increased profitability levels with a mean of 3.8099 while enhanced return on assets had a mean of 3.7042. Enhanced return on equity registered a mean of 3.6901 and the last one was enhanced liquidity position with a mean of 3.5563. The implication of the mean scores is that the higher the mean the higher the influence of the construct on financial performance. The overall mean score for all the measures was moderate at 3.7776. The mean scores differed from one manufacturing firm to another with highest difference being noted in increased sales growth. The least variance was noted in enhanced liquidity position. The implication of the results is that most respondents felt that increased sales growth was the highest determinant of manufacturing firm performance with the highest mean of 3.9859 while enhanced liquidity position had the least influence at 3.5563.

**Factor Analysis of Financial Performance (FP)**

Factor analysis method was used to describe variability among observed variables and correlated variables in terms of lower number of unobserved (latent) variables called factors. This helps in reducing a large number of variables to small numbers of factors for modeling purposes and to select subset variables from a large set, based on which original variables had the highest correlations with the factor. Factor loadings are the correlations between the original variables and factors and the key to understanding the nature of a particular factor. Uzel et. al., (2015) avers that factor analysis helps in grouping variables with similar characteristics together. This study used factor analysis to create a small number of factors (access to finance, cost of capital, capital structure, taxation policy, investment policy and financial performance) from a large number of variables/indicators which were capable of explaining the observed variance in the larger number of variables. These factors were then used for further analysis. Squared factor loadings indicated what percentage of the variance in the original variables is explained by a factor (Sabana, 2014).

Financial performance is a measure of how well a firm has used assets from its primary mode of business to generate profits. This term is also used as a general measure of a firm’s overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation (Javed et. al., 2012). The key financial drivers enhancing performance are profit margin, asset turnover, leverage, cash flow, and working capital (Odhuon, Kambona, Odhuno, & Wadongo, 2010). Pandey (2011) postulates that a firm must earn sufficient profits for expansion and growth and to contribute towards the overall financial health of the business. This helps in reducing a large number of unobserved (latent) variables called factors. This helps in reducing a large number of variables to small numbers of factors for modeling purposes and to select subset variables from a large set, based on which original variables had the highest correlations with the factor. Factor loadings are the correlations between the original variables and factors and the key to understanding the nature of a particular factor. Uzel et. al., (2015) avers that factor analysis helps in grouping variables with similar characteristics together. This study used factor analysis to create a small number of factors (access to finance, cost of capital, capital structure, taxation policy, investment policy and financial performance) from a large number of variables/indicators which were capable of explaining the observed variance in the larger number of variables. These factors were then used for further analysis. Squared factor loadings indicated what percentage of the variance in the original variables is explained by a factor (Sabana, 2014).

In order to find out the factors that were driving financial performance measures in manufacturing firms, KMO and Bartlett’s test were taken. KMO measures sampling adequacy which explains the extent to which indicators of a construct belong to each other. Tables 4.14 shows the results of factor analysis for financial performance.

**Table 4.14 (a). KMO and Bartlett’s Test for financial performance.**

<table>
<thead>
<tr>
<th>KMO and Bartlett’s Test</th>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</th>
<th>Bartlett’s Test of Sphericity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Approx. Chi-Square</td>
</tr>
<tr>
<td></td>
<td></td>
<td>df</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sig.</td>
</tr>
<tr>
<td>0.815</td>
<td></td>
<td>350.095</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>
KMO test measures sample adequacy and it ranges between 0 and 1. A value close to 1 indicates that patterns of correlations are compact and hence the Factor Analysis is reliable and appropriate for the study. KMO measures on financial performance had 0.815 which represented great acceptability of the use of factor analysis and sufficient intercorrelations.

Bartlett’s test of Sphericity is significant (chi-square=350.095, p<0.000). Bartlett’s test checks if the observed correlation matrix diverges significantly from the identity matrix. The total variance explained in the FP constructs was explained in table 4.14(b).

The analysis of variance identified the Eigen values are the elements that describe the degree of change in each variable in relationship to the total overall variables. In the analysis of variance other elements include the percentage of variance and also the cumulative percentages which were explained by the extracted factors before and after the rotation. The nine measures of financial performance were subjected to factor analysis and the results show that there was one critical factor driving financial performance use in manufacturing firms which accumulated to 60.722% of the total variance. Factor I had the highest variance of 39.335% while factor two had 12.842%. The factor had the greatest influence on financial performance of manufacturing firms. This is because it had Eigen values of more than 1.0. Table 4.14(b) depicts the rotated component factor loadings for financial measures of manufacturing firm’s performance.

**Table 4.14 (b). Total Variance Explained for Financial Performance measures.**

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sum of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total % of Variance</td>
<td>Cumulative Total % of Variance</td>
</tr>
<tr>
<td>1</td>
<td>6.072</td>
<td>60.722</td>
</tr>
<tr>
<td>2</td>
<td>8.992</td>
<td>69.722</td>
</tr>
<tr>
<td>3</td>
<td>6.741</td>
<td>76.463</td>
</tr>
<tr>
<td>4</td>
<td>5.727</td>
<td>82.190</td>
</tr>
<tr>
<td>5</td>
<td>3.319</td>
<td>85.912</td>
</tr>
<tr>
<td>6</td>
<td>2.582</td>
<td>88.494</td>
</tr>
<tr>
<td>7</td>
<td>1.506</td>
<td>100.000</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.

The analysis of variance identified the Eigen values which is the variance of each factor or component in comparison with the total variance of all the items in the construct. In the analysis of variance other elements include the percentage of variance and also the cumulative percentages which were explained by the extracted factors before and after the rotation.

Principal component analysis with a Varimax rotation was used to factor the nine items related to financial performance. The correlation matrices among the items revealed a number of correlations in excess of 3 which meant that all responses were suitable for factorization. From the Variance matrix, there were two variables that had Eigen values of more than 1.0 which meant that these were the financial performance variables that had the highest influence on manufacturing firm’s performance. Component one had the highest variance of 3.933 which accounted for 39.335 % of the variance. Component 2 had the second highest variance of 1.284 contributing 12.84% of the variance. The cumulative results showed that there was one critical factor driving financial performance in manufacturing firms which accumulated to 60.07% of the total variance in this construct. The other factors also explained the variance at less than 40% which meant that some variance had been explained by latent variables. In evaluating what variables to retain the factor loadings were taken into account and the minimum factor loadings were 0.53 which were considered to be moderately high. The factors affecting one variable were all loaded up together as shown in the rotated component matrix in table 4.14(c).

**Table 4.14 (c). Extracted Component Matrix for Financial Performance measures.**

<table>
<thead>
<tr>
<th>Component</th>
<th>component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>901</td>
</tr>
<tr>
<td>2</td>
<td>646</td>
</tr>
<tr>
<td>3</td>
<td>772</td>
</tr>
<tr>
<td>4</td>
<td>839</td>
</tr>
<tr>
<td>5</td>
<td>654</td>
</tr>
<tr>
<td>6</td>
<td>707</td>
</tr>
<tr>
<td>7</td>
<td>891</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

b. Key, scale: 1-1.8 strongly disagree, 1.8-2.6 disagree, 2.6-3.4 neither agree nor disagree, 3.4-4.2 agree, 4.2-5 strongly agree.

**Analysis on Capital Structure**

**Means on capital structure**

The manufacturing firms capital structure were assessed by nine measures but after factor analysis these measures were reduced to seven namely equity capital facilitates financial performance, equity capital helps maximize firm value, optimal financing mix facilitates financial performance, retained earnings have impacted positively on financial performance, dividend payout have impacted on financial performance, use more debt than equity because interest on debt is tax deductible and debt capital facilitates firms financial performance. This is because factor analysis identified two major factors which had the biggest influence on manufacturing firm’s performance. The significant results showed that the means were statistically different and the null hypothesis was rejected. The means have been identified in Table 4.20.

**Table 4.20. Means on capital structure.**

<table>
<thead>
<tr>
<th>Capital structure measures</th>
<th>N</th>
<th>Mean</th>
<th>Std.Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity capital facilitates our firms financial performance</td>
<td>142</td>
<td>4.0282</td>
<td>0.7608</td>
</tr>
<tr>
<td>Use of equity capital helps to maximize firm value</td>
<td>142</td>
<td>4.0090</td>
<td>0.6996</td>
</tr>
<tr>
<td>optimal financing mix facilitates our firms financial performance</td>
<td>142</td>
<td>3.7817</td>
<td>1.0100</td>
</tr>
<tr>
<td>Retained earnings have impacted positively on our financial performance</td>
<td>142</td>
<td>3.7183</td>
<td>0.9963</td>
</tr>
<tr>
<td>Dividend payout have impacted negatively on our firms financial performance</td>
<td>142</td>
<td>3.4930</td>
<td>0.9728</td>
</tr>
<tr>
<td>More debt than equity because interest on debt is tax deductible</td>
<td>142</td>
<td>3.5141</td>
<td>0.8640</td>
</tr>
<tr>
<td>Debt capital facilitates our firms financial performance</td>
<td>142</td>
<td>3.4155</td>
<td>0.8897</td>
</tr>
</tbody>
</table>
The highest mean score was registered by equity capital facilitating financial performance with a mean of 4.0282 and the second were equity capital helps maximize firm value with a mean of 4.000. The third was optimal financing mix facilitates financial performance with a mean of 3.7817 while the fourth was retained earnings have impacted on financial performance had a mean of 3.7183. The fifth was dividend payout has impacted positively on financial performance with a mean of 3.493. The sixth variable was use more debt than equity because interest on debt is tax-deductible with a mean of 3.5141. The last variable was debt capital facilitates financial performance with a mean of 3.4155. The implication of the mean scores is that the higher the mean the higher the influence of the construct on capital structure. The overall mean score for all the measures was moderate at 3.176. The mean scores differed from one manufacturing firm to another with highest difference being noted in equity capital facilitates financial performance. The least variance was noted in debt capital facilitates financial performance. The implication of the results is that most respondents felt that equity capital facilitates financial performance was the highest determinant of manufacturing firm performance with the highest mean of 4.0282 while debt capital facilitates financial performance had the least influence at 3.4155.

**Factor Analysis of Capital Structure**

The capital structure refers to how a firm finances its overall operations and growth by using different sources of funds. Capital structure influences both profitability and riskiness of the firm. The greater the gearing a firm exhibits, the higher the potential for failure if cashflows fall short of those necessary to service debts. Several studies indicate that firms capital structure decisions are affected by several firm related characteristics such as future growth options, earnings volatility, profitability and control (Titman and Wessells, 2008; Glen and Pinto, 2006). Studies such as Jensen and Meckling (1976), Williamson (2007), Harris and Raviv (2010), have explained factors influencing capital structure from the perspective of asymmetric information and agency theory. In the international context, country norms, type and size of industry and host government controls could play a role in determining capital structure (Rajan and Zingales, 2005).

In order to find out the factors that were driving capital structure in manufacturing firms, KMO and Bartlett’s test were performed. KMO measures sampling adequacy which explains the extent to which indicators of a construct belong to each other. Tables 4.21(a) shows the results of factor analysis for capital structure.

**Table 4.21(a). KMO and Bartlett’s Test for Capital Structure.**

<table>
<thead>
<tr>
<th></th>
<th>KMO and Bartlett’s Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Oklin Measure of Sampling Adequacy</td>
<td>.861</td>
</tr>
<tr>
<td>Bartlett’s Test of Sphericity</td>
<td>Approx. Chi-Square 521.049</td>
</tr>
<tr>
<td></td>
<td>df 36</td>
</tr>
<tr>
<td></td>
<td>Sig .000</td>
</tr>
</tbody>
</table>

KMO test measures sample adequacy and it ranges between 0 and 1. A value close to 1 indicates that patterns of correlations are compact and hence the Factor Analysis is reliable and appropriate for the study. KMO measures on CS had 0.861 which represented great acceptability of the use of factor analysis and sufficient intercorrelations.

Bartlett’s test of Sphericity is significant (chi-square = 521.049, p<0.000). Bartlett’s test checks if the observed correlation matrix diverges significantly from the identity matrix. The total variance explained in the Capital structure constructs was explained in table 4.21(b).

The analysis of variance identified the Eigen values are the elements that describe the degree of change in each variable in relationship to the total overall variables. In the analysis of variance other elements include the percentage of variance and also the cumulative percentages which were explained by the extracted factors before and after the rotation. The nine measures of capital structure were subjected to factor analysis and the results show that there were two critical factors driving capital structure use in manufacturing firms which accumulated to 79.44% of the total variance. Factor I had the highest variance of 62.30% while factor two had 17.13%. These two factors had the greatest influence on capital structure and hence the financial performance of manufacturing firms. This is because they all had Eigen values of more than 1.0. Table 4.21(c) depicts the rotated component factor loadings capital structure drivers of financial performance.

The analysis of variance identified the Eigen values which is the variance of each factor or component in comparison with the total variance of all the items in the construct. In the analysis of variance other elements include the percentage of variance and also the cumulative percentages which were explained by the extracted factors before and after the rotation.

Principal component analysis with a Varimax rotation was used to factor the nine items related to capital structure and financial performance. The correlation matrices among the items revealed a number of correlations in excess of 0.7 which meant that all responses were suitable for factorization. From the Variance matrix, there were two variables that had Eigen values of more than 1.0 which meant that these were the capital structure variables that had the highest influence on manufacturing firm’s performance. Component one had the highest variance of 6.23 which accounted for 62.306 % of the variance. Component 2 had the second highest variance of 2.086 contributing 20.86% of the variance.

The cumulative results showed that there were two important factors driving the use of capital structure in manufacturing firms which accumulated to 79.441% of the total variance in this construct. The other three factors also explained the variance at less than 21% which meant that some variance had been explained by latent variables. The researcher deleted all the variables which did not relate to either factor 1 or 2 in order to continue working out for further relationships as shown in the rotated component matrix in table 4.21(c)

From the rotation matrix in Table 4.21(c), all the capital structure measures were grouped into two factors equity capital and debt capital. Factor one had five variables which include use of equity capital facilitates our firms financial performance, use of equity capital helps to maximize firm value, Optimal financing mix facilitates financial performance, stability of retained earnings have impacted positively on financial performance, high divided payout have impacted negatively on financial performance and we rely more on self financing in terms of retained earnings and the high cost of equity discourages our firm from using it. This factor was named equity capital. Factor two had we use more debt than equity because interest on debt is tax deductible, use of debt capital facilitates our firms financial performance and Bond financing is preferred due to increased earnings.
Performance is affected by capital structure and financial performance at a significance level of 0.05 (P < 0.05). Stepwise ANOVA was done to test the significance of the independent variables on the dependent variable and the results were presented in table 4.22. The model identified with a study of Javed et al. (2012) explained 50.8% of the changes in financial performance as it accounted for 49.9% of its variability (R square = 0.499). This means that about 49.9% of the variation in financial performance is explained by the model $FP = \beta_0 + \beta_1 (CS1) + \beta_2 (CS)$.

This means 50.1% is unexplained by the model. Adjusted $R^2$ is a modified version of $R^2$ that has been adjusted for the number of predictors in the model by less than chance. The adjusted $R^2$ of 0.492 which is slightly lower than the $R^2$ value is a precise indicator of the relationship between the independent and the dependent variable because it is sensitive to the addition of irrelevant variables. The adjusted $R^2$ indicates that 49.2% of the changes in the financial performance is explained by the model and 50.8% is not explained by the model $FP = \beta_0 + \beta_1 (CS1) + \beta_2 (CS)$.


### Table 4.21 (c). Rotated Component Matrix for Capital Structure measures.

#### Component Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>Equity capital</th>
<th>Debt capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of equity capital facilitates our firms financial performance</td>
<td>928</td>
<td>-103</td>
</tr>
<tr>
<td>The use of equity capital helps maximize firm value</td>
<td>916</td>
<td>-0.40</td>
</tr>
<tr>
<td>Optimal financing mix facilitates our firms financial performance</td>
<td>935</td>
<td>-0.057</td>
</tr>
<tr>
<td>Stability of retained earnings have impacted positively on financial performance</td>
<td>973</td>
<td>-0.069</td>
</tr>
<tr>
<td>High dividend payout have impacted negatively on financial performance</td>
<td>965</td>
<td>-0.093</td>
</tr>
<tr>
<td>We rely more on self financing in terms of retained earnings</td>
<td>935</td>
<td>-0.059</td>
</tr>
<tr>
<td>We use more debt than equity because interest on debt is tax deductible</td>
<td>286</td>
<td>850</td>
</tr>
<tr>
<td>Use of debt capital facilitates our firms financial performance</td>
<td>0.503</td>
<td>0.441</td>
</tr>
<tr>
<td>Bond financing is preferred due to increased earnings</td>
<td>283</td>
<td>850</td>
</tr>
<tr>
<td>Mean</td>
<td>3.93</td>
<td>3.61</td>
</tr>
<tr>
<td>Cronbach’s alpha</td>
<td>0.82</td>
<td>0.68</td>
</tr>
</tbody>
</table>

Key, scale: 1-1.8 strongly disagree, 1.8-2.6 disagree, 2.6-3.4 neither agree nor disagree, 3.4-4.2 agree, 4.2-5 strongly agree.

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

This factor was named debt capital. The explanation is that most of the capital structure influence on manufacturing firm’s financial performance was explained by these two factors. In analyzing the average means of each construct factor one which was named equity capital had an average mean of 3.93 while factor 2 which was named debt capital had a mean of 3.61.

### Linear regression model of financial performance and capital structure

#### Table 4.22 Regression of financial performance and capital structure.

<table>
<thead>
<tr>
<th>Model</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.706</td>
<td>0.699</td>
<td>74174</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Debt Capital, Equity Capital

The aggregate mean score of component one, capital structure (independent variable) were regressed on the aggregate mean scores of financial performance (dependent variable) and the results were presented in table 4.22. The coefficient of determination ($R^2$) and correlation coefficient (R) shows the degree of association between equity capital and financial performance of manufacturing firms in Kenya. The results showed that equity capital had moderate explanatory power on financial performance as it accounted for 49.9% of its variability (R square = 0.499). This means that about 49.9% of the variation in financial performance is explained by the model $FP = \beta_0 + \beta_1 (CS1) + \beta_2 (CS)$.

This means 50.1% is unexplained by the model. Adjusted $R^2$ is a modified version of $R^2$ that has been adjusted for the number of predictors in the model by less than chance. The adjusted $R^2$ of 0.492 which is slightly lower than the $R^2$ value is a precise indicator of the relationship between the independent and the dependent variable because it is sensitive to the addition of irrelevant variables. The adjusted $R^2$ indicates that 49.2% of the changes in the financial performance is explained by the model and 50.8% is not explained by the model $FP = \beta_0 + \beta_1 (CS1) + \beta_2 (CS)$.


### Table 4.23. ANOVA of financial performance and Capital structure.

<table>
<thead>
<tr>
<th>ANOVA*</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>76.168</td>
<td>88.084</td>
<td>89.223 (0.000)</td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>76.474</td>
<td>39.550</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>152.642</td>
<td>441</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Performance
b. Predictors: (Constant), Debt Capital, Equity Capital

In table 4.23 Stepwise ANOVA was done to test the significance of the independent variables on the dependent variable and the existence of variable variations within the model. The ANOVA test results on capital structure revealed F-statistic of 69.223 which was significant at 0.05 (P < 0.05). ANOVA test revealed that capital structure has significant effect on financial performance of manufacturing firms. The P
value was 0.000 which was less than 5% level of significance. This is depicted by linear regression model:
\[ FP = \beta_0 + \beta_1(CS) \]
where FP is financial performance and CS is capital structure. The p value was 0.000 implying that the model was significant. The study therefore rejected the second null hypothesis.

Ho: Capital structure does not significantly affect the financial performance of manufacturing firms in Kenya.

### Table 4.24. Model of Coefficients.

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Std. Error</td>
<td>Beta</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.101</td>
<td>.225</td>
<td></td>
<td>4.905</td>
<td>0.000</td>
</tr>
<tr>
<td>Equity capital</td>
<td>523</td>
<td>.050</td>
<td>.669</td>
<td>10.451</td>
<td>0.000</td>
</tr>
<tr>
<td>Debt capital</td>
<td>.096</td>
<td>.067</td>
<td>.091</td>
<td>1.427</td>
<td>0.004</td>
</tr>
</tbody>
</table>

### Table 4.41. Multicollinearity test.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Std. Error</td>
<td>Beta</td>
<td>Tolerance</td>
<td>VIF</td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.121</td>
<td>.174</td>
<td>.153</td>
</tr>
<tr>
<td>Capital Structure</td>
<td>.152</td>
<td>0.71</td>
<td>.153</td>
</tr>
</tbody>
</table>

### Table 4.42. Regression of determinants of financial performance.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Std. Error</td>
<td>Beta</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.121</td>
<td>1.74</td>
<td>153</td>
<td>2.129</td>
</tr>
<tr>
<td>Capital Structure</td>
<td>152</td>
<td>0.71</td>
<td>.153</td>
<td>2.129</td>
</tr>
</tbody>
</table>

The results show that all the five determinants had a significant correlation with financial performance in manufacturing firms. Kung’u (2015) supported this study by establishing a positive correlation between the determinants and financial performance of manufacturing firms in Kenya. The study established a moderate relationship between capital structure and financial performance of manufacturing firms in Kenya. The correlation was positive with a correlation coefficient of 0.695. Gitari (2014) supported these results by establishing a weak positive relationship between capital structure and financial performance of manufacturing companies in Nairobi securities exchange. Capital structure had a moderate correlation with taxation policy with a correlation coefficient of 0.699.

### Hypothesis Testing

The study was based on the premise that the determinants of financial performance influenced the financial performance of manufacturing firms. Five relevant hypotheses had been set to guide the study as highlighted in the conceptual framework in chapter two. To establish the statistical significance of respective hypotheses, simple and multiple linear regression analysis were conducted as appropriate at 95 percent confidence level (\(a = 0.05\)). Additionally, the data was subjected to statistical collinearity tests in Table 4.41 which were deemed necessary to test for multicollinearity of variables before application of multiple regression analysis. This was necessary in order to find out if any independent variables were highly correlated with the dependent variable (Sabana, 2014).

### Correlation results of determinants and manufacturing firm’s performance

To establish the relationship among determinants of financial performance and financial performance a correlation matrix was used. Table 4.52 shows the correlation matrix. The table shows the relationship between determinants of financial performance and financial performance. In summary the results show strong implications to the performance of manufacturing firms in Kenya given the determinants of financial performance of SMEs (Nawi, 2015).

### Combined regression of determinants of financial performance and firm performance

The hypothesis were tested all at once using multiple linear regression model whereby the independent variables were regressed against the dependent variable so as to determine the required coefficients and p-values for establishing significance. The test was done at significance level of \(p < 0.05\) such that when p-value was more than the significance level, the model was insignificant. Table 4.42 presents the results of the analysis.

### Regression of determinants of financial performance.

The results in table 4.42 showed that, Capital Structure, had a significant effect with p-values of 0.003, 0.004, 0.013, 0.021 and 0.019 respectively. The research therefore rejected the null hypothesis of the determinants of financial performance because (\(p < 0.05\)). From the research results in table 4.42, a multiple linear regression equation that can be used to estimate financial performance of manufacturing firms in Kenya given the determinants of financial performance:

\[ FP = 2.121 + 0.152CS \]
where:

\[ \text{FP} = 2.121 + 0.152 \times \text{expected increase or decrease in manufacturing firm performance} \]

The regression results showed that a unit change in access to finance (AF) resulted in 48.2 percent (\(\beta = 0.482\)) change in manufacturing firm financial performance while a unit change in capital structure (CS) resulted in 15.2 percent (\(\beta = 0.152\)) change in manufacturing firm financial performance. (\(\beta = 0.256\)).

### 4.14 Overall Regression Result

#### Table 4.43. Model Summary.

<table>
<thead>
<tr>
<th>Model</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.858</td>
<td>0.726</td>
<td>0.5492</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Capital Structure

The linear regression models the relationship between the dependent financial performance and the independent variables: access to finance, capital structure, cost of capital, taxation policy and investment policy. The results in table 4.43 indicate \(R^2 = 0.735\) and \(R = 0.858\). R value points to a strong linear relationship between access to finance, capital structure, cost of capital, taxation policy and investment policy on one hand and the financial performance of manufacturing firms on the other hand. The \(R^2\) indicates that explanatory power of 73.5% of the variation in financial performance is explained by the study model.

However, 24.5% of the variation in financial performance is unexplained by the model. Adjusted \(R^2\) is a modified version of \(R^2\) that has been adjusted for the number of predictors in the model by less than chance. The adjusted \(R^2\) of 0.726 which is slightly lower than the \(R^2\) value is a precise indicator of the relationship between the independent and the dependent variable because it is sensitive to the addition of irrelevant variables.

The results show an adjusted \(R^2\) indicates that 72.6% of change in manufacturing firm financial performance was explained by the determinants of financial performance while the remaining percentage 26.4% could have been explained by other variables. This means that the influence of all the independent variables that is access to finance and capital structure is strong.

### Overall Analysis of Variance

Analysis of variance (ANOVA) test was done to test the overall significance of the variables access to finance (AF), capital structure (CS), cost of capital (CC), taxation policy (TP) and investment policy (IP) in influencing manufacturing firm financial performance. Table 4.44 presents the results of analysis.

The overall Analysis of Variance (ANOVA) highlighted in table 4.44 showed that the F-value of the overall regression model was 35.609 at \(p < 0.05\) and the significance value of the model was 0.000. The significance value of 0.000 implied that the study variables access to finance, capital structure, cost of capital, taxation policy and investment policy, had a positive influence on manufacturing firm’s financial performance.

#### Table 4.44. Overall Analysis of Variance Model.

<table>
<thead>
<tr>
<th>ANOVA²</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>12.258</td>
<td>5</td>
<td>2.452</td>
<td>35.609</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>80.384</td>
<td>136</td>
<td>297</td>
<td>1.404</td>
<td>0.297</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>152.642</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Performance

b. Predictors: (Constant) Capital Structure

### 5. Discussion of Key Findings

The results found some key findings which answer the following questions:

What are the effects of capital structure on financial performance among manufacturing firms in Kenya?

Capital structure was measured by nine constructs and the results found a moderate relationship between capital structure and manufacturing firm’s financial performance. The results agree with those of a study in Kenya that established a moderate relationship between capital structure and financial performance (Ebibomoboe et al., 2013). T-tests on the influence of capital structure (CS) on manufacturing firm’s financial performance showed that capital structure played a role on the firm performance with a mean of 3.176. This is consistent with a study of Okiro (2014) which established that capital structure had a moderate relationship with firm performance. This study had five top constructs that were frequently used and which had the highest mean scores were: equity capital facilitates financial performance with a mean of 4.02, equity capital helps maximize firm value with a mean of 4.00, optimal financing mix facilitates financial performance with a mean of 3.78, retained earnings have impacted positively on financial performance with a mean of 3.71, dividend payout have impacted on financial performance with a mean of 3.49, use more debt than equity because interest on debt is tax deductible with a mean of 3.51 and debt capital facilitates firms financial performance with a mean of 3.41 as shown in Table 4.20. These moderately high means are supported by other studies that established the above constructs as weak in influencing firm performance. Regression analysis was used to test H0; that there is no significant effect of capital structure on the financial performance of manufacturing firms in Kenya. The regression results showed a weak positive relationship between capital structure and financial performance (\(R=0.706\), \(P=0.000\)). This means that 70.6% of change in manufacturing firm financial performance was explained by capital structure.

### 6. Summary

The effect of capital structure on manufacturing firm performance

The study found out that capital structure significantly and positively affected firm performance. This study highlighted the importance of capital structure to the performance of manufacturing firms in Kenya. Capital structure is an important corporate decision because it could bring a financing mix which could maximize the market value of the firm. Additionally, return on asset and return on equity have a positive relationship with performance.

The study found a positive relationship between debt structure and financial performance. This is because most of the companies utilize debt as opposed to equity for additional funding. Debt include short and long term borrowings from financial institutions, debentures, bonds, deferred payment, bank borrowings and any other interest bearing loan. The study found that long term debt is comparatively more palatable than short term debt. This is based on the finding

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that employment of long term debt increases financial performance while short term debt has an opposite effect.

Many companies use more debt than equity as debt helps lower a company’s taxes because of allowable interest deductions. Tax rules permit interest payments as expense deductions against revenues to arrive at taxable income. The lower the taxable income, the less taxes a company pays. It was therefore recommended that manufacturing firms should balance their capital structure in order to avoid bankruptcy costs that is associated with excess debt. The study found out that much of manufacturing firms’ assets are financed by short term debts. Such short term debt instruments include overdraft facilities and other debts of less than one year. Therefore regulators are encouraged to create more short term financial instruments to offer many alternatives that may even help to reduce borrowing cost due to competition.

From the findings it was established that firms use shareholders’ funds as much as practical before they result to borrowing so as to minimize the risks related to debt financing. This risks include huge interest payments on the debt to erode the returns, restrictive debt covenants, are likely to lead the firms to financial distress and eventual collapse. Large manufacturing firms maintain a relatively lower debt ratio since they are able to generate such funds from internal sources. Therefore big and profitable companies present a low debt rate. The companies tend to have stable sales levels, assets that make good collateral for loans, and a high growth rate can use debt more heavily than other companies.

The study found out that firms with sound liquidity position used retained earnings, followed by debt financing for growth while equity financing was considered as a last resort. Therefore owing to the problems associated with accessing alternative credit facilities, a large proportion of Kenyan manufacturing firms rely more on self-financing in terms of retained earnings. The implication of using retained earnings is that the firms do not have adequate credit to meet the needs at different levels of growth. Therefore, a finance gap exists for firms starting or wishing to expand.

7. Conclusions
The conclusions were based on the objectives of the study that determinants of financial performance had a significant influence on firm performance. The focus of this study was on manufacturing sector in Kenya since the sector is expected to play a critical role in propelling the economy to a 10 per cent growth rate, in line with the aspirations of Vision 2030 and in supporting the country’s social development agenda through the creation of jobs, the generation of foreign exchange, and by attracting foreign direct investment. To meet these goals, manufacturing firms in Kenya require effective financial management practices to drastically manage these challenges and achieve superior performance. Particularly, these firms need to embrace the use of good financial management strategies as it has been acknowledged by researchers as being critical for such manufacturing firms to remain competitive in the global economy.

Additionally the results established that capital structure was found to significantly and positively influence manufacturing firm financial performance. When capital structure stated hypotheses was tested in the regression model it was found to have a significant relationship between itself and manufacturing firm financial performance. The findings of the study established that firms that had optimal capital structure had improved performance.

8. Recommendations
The researcher recommends the adoption of determinants of financial performance in order to improve financial performance of manufacturing firms. The study findings support the view that determinants of financial performance have a significant effect on firm performance. However, the influence of each determinant varies from one firm to another. To achieve maximum performance, managers must select the determinant that suits their firm.

Policies should be put in place to encourage firms to maintain a capital structure that facilitates financial performance. These include policies that encourage firms to maintain a lower debt ratio since they are able to generate such funds from internal sources. The government should put policies on better credit control mechanisms to ensure companies can access bank financing at reasonable rates. Other rules and measures should be put in place to ensure compliance to the regulations which are intended to protect borrowers. Rules on interest rates by the central bank of Kenya are intended to help the financial system maintain an affordable cost of capital. Additionally firm managers should be encouraged to raise equity by listing at the securities exchanges. The capital market regulators on the other hand should have the necessary infrastructure and regulatory framework that entice the firms to list.

9. Areas of Further Research
The results of the study found out that determinants of financial performance improved manufacturing firm performance. However the study did not come up with any optimum point at which the firms should employ them. The study also did not come up with a way of combining the various forms of determinants of financial performance. It is on the above basis that this study recommends further studies to establish the best combination of determinants of financial performance. Further the researcher studied the determinants of financial performance in Kenya. Further studies could be carried out to identify the determinants of financial performance in East Africa. Therefore further research is therefore recommended on the influence of other determinants of financial performance that have not been addressed in this study. A weak manufacturing sector may affect the investors, consumers and government negatively through poor performance.

10. References


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Rissa, U,(2014) the growth of industrial manufacturing in Ethiopia and its contribution to GDP an unpublished MBA thesis Addis Ababa University, Ethiopia.


APPENDIX A

Table 1.2. Sample Size.

<table>
<thead>
<tr>
<th>Category of Manufacturer</th>
<th>Total No. of Firms</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building, Mining &amp; Construction</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Chemical &amp; Allied Sector</td>
<td>61</td>
<td>29</td>
</tr>
<tr>
<td>Energy, Electrical &amp; Electronics</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Foods &amp; Beverages Sector</td>
<td>88</td>
<td>42</td>
</tr>
<tr>
<td>Leather &amp; Footwear Sector</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Metal &amp; Allied Sector</td>
<td>45</td>
<td>22</td>
</tr>
<tr>
<td>Motor Veh. Assembly &amp; Accessories</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Paper &amp; Board Sector</td>
<td>52</td>
<td>25</td>
</tr>
<tr>
<td>Pharmaceutical &amp; Med. Equip. Sector</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Plastics &amp; Rubber Sector</td>
<td>53</td>
<td>25</td>
</tr>
<tr>
<td>Textile &amp; Apparels Sector</td>
<td>27</td>
<td>13</td>
</tr>
<tr>
<td>Timber, Wood &amp; Furniture Sector</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>413</td>
<td>199</td>
</tr>
</tbody>
</table>

APPENDIX B

Table 4.13. Results of Tests of Statistical Assumptions (Test of regression assumption and statistic used).

<table>
<thead>
<tr>
<th>N</th>
<th>N</th>
<th>Normality (Shapiro-Wilk test)</th>
<th>Linearity (ANOVA test)</th>
<th>Independence (Durbin-Watson test)</th>
<th>Homogeneity (Levene test)</th>
<th>Collinearity VIF (Tolerance Test)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Threshold assumption is met if:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>p &gt; 0.05</td>
<td>p &gt; 0.05</td>
<td>1.5-2.5</td>
<td>p &gt; 0.05</td>
<td>VIF 10 max</td>
</tr>
<tr>
<td>Capital structure Equity</td>
<td>142</td>
<td>0.8624</td>
<td>0.42</td>
<td>1.87</td>
<td>3.078</td>
<td>1.844 (0.542)</td>
</tr>
</tbody>
</table>