

**EFFECT OF SELECTED FIRM CHARACTERISTICS ON FINANCIAL
PERFORMANCE OF FIRMS LISTED IN THE AGRICULTURAL SECTOR AT
THE NAIROBI SECURITIES EXCHANGE**

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DECLARATION

This research Project is my original work and has not been submitted to any institution or university for award of any degree.

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This research project has been submitted for examination with my approval as the university supervisor.

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Finally, I thank all the people who in one way or the other helped me and positively contributed towards the completion of this research project.

DEDICATION

This project is dedicated to my father Omar Mahfudh (Kaha), Mother (Maryam Salim Garwan), my wife (Maryam Faezz), daughter (Manha Issa) for having accorded me untiring support to enable me pursue my master's degree.

ABSTRACT

A number of firm characteristics have been studied by many researchers, practitioners and academicians to understand their effect on performance. This study sought to find the effect of selected firm characteristics namely firm size, leverage, firm age, liquidity, and board size on firm financial performance as measured by return on assets.

The study used correlational research design in an attempt to investigate the effect of firm characteristics on firm financial performance and also the extent of causation was documented by running a multi variate linear regression analysis. The study's population was seven agricultural firms listed at the Nairobi Securities Exchange and the researcher selected six out of the seven listed firms due to inaccessibility of the seventh listed firm from the year 2007 to 2012.

The study evidenced that the only variables that were statistically significant were liquidity and board size and the other three variables that were not statistically significant were namely firm size, leverage and firm age. Though firm size, leverage, firm age, and liquidity were positively related to firm financial performance and board size was the only variable that was negatively related to firm financial performance. The study recommends to the management to focus efforts on those variables that positively affect their long run financial performance such as increase firm sizes, use of more leverage up to a point when net costs are suffered as a result of excessive leverage, reduction of firm and product lifecycle, extending more credit sales to customer and paying of suppliers promptly as per terms and reduction of board size as it results in more expenses.

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LIST OF ABBREVIATIONS

AIMS	Alternative Investments Market Segment
CEO	Chief Executive Officer
DA	Total Debt over Total Assets
EBIT	Earnings before Interest and Tax
FISMS	Fixed Income Securities Market Segment
GDP	Gross Domestic Product
LDA	Long term Debt over Total Assets
MBR	Market to Book Ratio
MIMS	Main Investments Market Segment
NSE	Nairobi Securities Exchange
OPR	Operating Ratio
PWC	Price Waterhouse Coopers
RBV	Resource Based View
ROA	Return on Assets
ROE	Return on Equities
ROR	Return on Revenue
ROS	Return on Sales
SDA	Short term Debt over Total Assets
US	United States

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Many studies have been done to investigate the effect of certain firm characteristics on financial performance, but what is amazing is that many researchers have concentrated on only a few if not one firm characteristic and have used others as control variables even though results of their findings show that the “other firm characteristic” actually have a significant effect on financial performance (Nunes, Serrasqueiro and Sequeira, 2009; Dogan, 2013). It is paramount to understand the effects of certain firm characteristics or firm performance be it profitability or returns on investment, returns on assets or returns on equity. Much as the stewards who are the managers of these corporations attempt to influence performance at their functional levels be it either in marketing, finance or operations; there still remains a gap in understanding the combined effects of these firm-level characteristics in a more holistic view.

Goddard, Tavakoli and Wilson (2005) based on industrial economics, strategic management, accountancy and finance approaches used the following firm characteristics such as firm size, market power, firm leverage, as well as firm short term liquidity in an attempt to investigate their effect on firm performance. Studies have been conducted in areas of financial performance but were restricted to one or two variables under investigation. Fama and Jensen (1983); Lipton and Lorsch (1992) and Chogii (2009) sought to explain the effect of corporate governance on firm performance. Ondiek (2010)

investigated the relationships of capital structure to financial performance. Waithaka (2012) investigated the relationship of working capital management practice and financial performance of agricultural companies listed at the Nairobi securities exchange.

Various studies were conducted in the fields of industrial economics, small business management, strategic management and accountancy and finance etc. to investigate the effects of firm characteristics on firm performance Majumdar (1997); Kristiansen, Furuholt, & Wahid (2003); Goddard et al., (2005); Nunes et al., (2008); Pacini, Hillison and Marlett, (2008); Dogan (2013). This study will attempt to look into the effects selected firm characteristics on financial performance in a more holistic view of the firm. This study will specifically focus on firms listed under the agricultural sector of NSE.

1.1.1 Firm Financial Performance

Financial performance can be described as a measurement of how well a firm uses its assets from its primary mode of business to generate revenue. The term is also used as general measure of firm's overall financial health over a given period of time. The business dictionary (2013) defines financial performance as measuring results of a firm's policies and operations in monetary terms and these results are reflected in firm's return on investment, return on assets, value added etc.

Neely (2011) observes that financial performance measures mainly serve three purposes. Firstly, they serve as a tool of financial management, secondly they serve as major objectives of business e.g. to have a 40% ROA and lastly they serve as a mechanism for

motivation and control within an organization. Many researchers have used different financial performance measures. Nash (1983) says that the best indicator of financial performance is profitability. Doyle (1994) points that profitability is the most commonly used measure of performance in Western companies. Other scholars cite that the frequently used financial performance measures in studies are profit margin, return on assets (ROA), return on equity (ROE) and return on sales (ROS) (Robinson, 1982; Galbraith and Schendel, 1983).

Return on sales measures how much a company earns in relation to its sales. This gives information about the company's resilience to competition, declining prices and sales and adverse rising costs. Return on assets measures how well the company is utilizing its assets to generate income. Dogan (2013) used ROA as measure of firm profitability in his study. Return on equity measures how much returns are given to every shillings of equity capital provided by internal financier who are shareholders of the company. However other scholars like Kaplan and Norton (1996) advocate for non-financial performance measures like the balanced score card. Hongren, Harrison and Oliver (2009) critic the use of financial performance measures in that they are historical (lag indicators) rather than being futuristic (lead indicators). Additionally, they are subjective in that they are influenced by the choice of accounting policies adopted, they only provide a summary of firm's information and also affected by difference in accounting period.

1.1.2 Firm Characteristics

Certain firm characteristics are associated firm financial performance such as firm size (Dogan, 2013), leverage (Dogan, 2013), firm age (Yazdanfar, 2013), liquidity (Dogan, 2013), board size (Vafeas, 1999) and many more others. The theory gives two diverse opinions on what really influences firm performance. The first view point is that many argue that it is actually firm characteristics that highly influence performance (Galbreath and Galvins, 2008) whereas others argue that industry characteristics are the ones influencing firm performance (Bain, 1954; Porter, 1980).

One of the firm characteristic that is constantly associated to firm performance is firm size commonly measured by either natural logarithm of assets, or sales or employees. Larger firms are associated with having more diversification capabilities, ability to exploit economies of scale and scope and also being highly formalized in terms of procedures. These features discussed are all geared towards making the operations effective so as to enable the firm generate superior performance (Penrose, 1959). However others like, Leibenstein (1976) argues that firm size can lead to inferior performance due to formalized procedures and market x-inefficiencies. Larger firms can also attract exemplary human resources that will significantly contribute to the firm performance.

Leverage is ratio between total debt and total assets of the company that shows the extent to which the totals assets are financed by loans. An increase in this ratio shows the dependence of the company on external debt financing and greater score being given to

the firm by debt providers. This however, may curtail firm's autonomy because of the restrictive covenants imposed by debt providers and may in the worst case scenario lead to financial solvency.

Firm age is an absolute metric showing how many years the firm has been in operations since when it was started. Firm age has been greatly associated with firm performance by its proponents and opponents as well. Stinchcombe (1965) argues that older firms are more experienced, have enjoyed the benefits of learning and are not prone to liability of newness which ultimately leads to superior performance. However another opposing view is that older firms may lose out on grasping profitable opportunity that comes along their way because of the structural inflexibility created by bureaucracy and inertia.

Liquidity is a ratio between total current assets of the firm and the total current liabilities obligation within a period of one year or normal operating cycle of the firm whichever is greater. In order to survive, firms must be able to meet their short-term obligations by paying their creditors and also be able to repay their short-term debts. Some degree of liquidity is good for the firm, but a very high liquidity ratio might suggest that the firm is sitting around with a lot of cash because it lacks the managerial acumen to put those resources to work. However, very low liquidity ratio means the firm may struggle to meet its short term obligations as and when they fall due.

Board size is normally measured by the total numbers of members serving in a particular board of a company. Board size is a critical firm characteristic that influences firm performance and many mixed views have been raised over whether it positively or

negatively influences firm performance. The board acts on behalf of shareholders and is considered as a major decision making group. Different firms have different board sizes depending on their corporate governance policies in place.

1.1.3 Relationship of Firm Characteristics and Financial Performance

The expected relationship between various firm characteristics on financial performance is as follows: The study anticipates either positive or negative relationship of firm size on financial performance as hypothesized by different researcher. One school of thought argues that there is a positive relationship between firm size and firm performance (Penrose, 1959; Majumdar, 1997). It argues that bigger firms have more competitive power and also have a bigger market share which positions them to profit more. Moreover, bigger firms can seize a profitable opportunity that comes in their way since they have bigger capital resources than smaller sized firms. Another school of thought argues that due to organizational rigidity brought about by bigger firm size and a lot of unnecessary bureaucracies, profitable opportunities that may want urgent attention will easily pass the firm and thus making them less profitable in relative terms and thus negatively impact on firm performance (Leibenstein, 1976; Shepherd, 1986; Banchuenvijit, 2012; Goddard et al., 2005).

As for leverage, the study hypothesizes the findings of Goddard et al., (2005); Nunes, Serrasqueiro and Sequeira (2008); Dogan (2013) a negative relationship on financial performance to occur. The study hypothesizes the findings of Kristiansen, Furuholt, & Wahid (2003) and Islam, Khan, Obaidullah and Alam (2011) that firm age and financial performance will exhibit a positive relationship where they found that number of years in

operation was significantly linked to business success. A positive relationship in the sense that mature firms have knowledge of the market and they have established contacts and by learning curve effect they have been able to lower their average total fixed costs per unit and also they are positioned at the upper part of the life cycle curve having positive cashflows as well as profits.

The study hypothesizes the same findings to occur in studies conducted by Goddard et al., (2005); Nunes et al., (2008) and Dogan (2013) that liquidity (current ratio) will have positive effect on financial performance because it mainly consists of operating assets that generate revenues and cashflows for the firm. The study hypothesizes the same findings to occur in a study conducted by Yermack (1996) that board size will have a negative effect on firm performance and depending on the effectiveness of the serving board. If the board is effective, a larger board will have positive effect on performance and a small board will yield lower performance as findings by Fama and Jensen (1983) and Lipton and Lorsch (1992).

1.1.4 Agricultural Sector in Nairobi Securities Exchange

In Kenya there is only one securities exchange which is Nairobi Securities Exchange (NSE) that was founded back in 1954 through incorporation into a company as voluntary organization of stock brokers. It facilitates exchange in securities issued by publicly listed companies and government of Kenya. The NSE currently lists a total of 61 companies in the various categories as at August 2013 with agricultural sector listing seven companies.

The NSE has three market segments namely: Main Investments Market Segment (MIMS) is the main quotation market , Alternative Investments Market Segment (AIMS) provides an alternative method of raising capital to small, medium sized and young companies that find it difficult in meeting the stringent listing requirements of the MIMS and the Fixed Income Securities Market Segment (FISMS) is an independent market for fixed income securities such as treasury bonds, treasury bills, commercial papers, corporate bonds, preference shares and debentures. Listed companies under MIMS are classified into eleven categories namely: agricultural; automobile and accessories; banking; commercial and services; construction and allied; energy and petroleum; insurance; investment; manufacturing and allied; telecommunication and technology and lastly growth enterprise market segment (NSE, 2013).

Agriculture has for many years formed the backbone of Kenya's economy: the agriculture sector contributes about 30 per cent of the Gross Domestic Product (GDP) and accounts for 80 per cent of national employment mainly in the rural areas. In addition, the sector contributes more than 60 per cent of the total export earnings and about 45 per cent of government revenue, while providing for most of the country's food requirements. The sector is estimated to have a further indirect contribution of nearly 27 per cent of GDP through linkages with manufacturing, distribution, and other service related sectors. Kenya's agricultural sector directly influences overall economic performance through its contribution to GDP. Periods of high economic growth rates have been synonymous with increased agricultural growth. The tea sector is a dominant sector and the coffee sector has started to pick up following a decline in the recent past. The horticultural and flora sectors have seen unprecedented growth over the past years as more companies venture

into production and export of flowers and fresh produce. The sugar industry has faced significant challenges and it is the government's intention to improve the sector. This industry is expected to show good growth over the next few years, should the government implement their stated policies (PWC, 2006-2013).

1.2 Research Problem

The literature provides mixed findings on the relationship between firm size and firm performance. Other scholars argue that there is a positive relationship (Majumdar, 1997) whereas others have a contrary view arguing there is a negative effect on firm performance (Banchuenvijit, 2012). As for firm age, Kristiansen et al., (2003) and Islam et al., (2011) claim there is a positive effect of firm age and firm performance. Kanyuru (2010) and Ondiek (2010) shows that there is a negative relationship of leverage on firm performance. Current liquidity is expected to show a positive effect on firm performance as shown in the findings of Dogan (2013). Board size is expected to have a negative relationship on firm performance as evidenced in the study of Chogii (2009) where he documents negative effect on firm performance.

Studies done abroad by Majumdar (1997); Nunes, Serrasqueiro and Sequeira (2008); Lee (2009) and Dogan (2013) investigating the effect of firm size and firm performance totally ignored other potential firm characteristics that have an effect of firm financial performance like board size and more so they did not look at agriculture industry as a special sector which had unique assets such as biological assets. Yermack (1996) and Pacini, Hillison and Marlett (2008) investigated the relationship between board size and

firm performance ignored other important firm characteristics in their study like firm age and leverage. Needless to mention they did not study the agricultural industry.

To understand well the firm financial performance of this important sector of our economy calls for also understanding how different firm characteristics affect the firm performance. It is surprising to note that the only local study done in this area was that of Waithaka (2012) as she sought to investigate the relationship between working capital management practices and financial performance of agricultural companies listed at the NSE in which she also used other control variables like firm leverage, firm size, and fixed financial ratio. This study only looked at some of the firm characteristics ignoring important firm characteristics such firm age and board size. A study done by Chogii (2009) and Ngila (2012) investigating corporate governance theories and firm performance for listed companies at NSE ignored also firm age and did not give special attention to agricultural industry for better understanding of their effect. Ondiek (2010) left some mostly ignored firm characteristic like firm age, board size etc. in her study investigating firm capital structure and firm financial performance.

Some firms perform better than others in financial performance sense. What is that these succeeding firms have that the other poorly performing firms do not have? Could there be firm characteristics that researchers locally may have overlooked? Many studies done either used a few of these firm characteristics and subjected others as control variables or they have not considered both financial and non-financial firm characteristics in their studies even though they acknowledge that these “so called control variables” have an impact on firm performance Majumdar (1997); Nunes, Serrasqueiro and Sequeira (2008);

Lee (2009); Chogii (2009); Ngila (2012) and Dogan (2013). Moreover, the agricultural industry has been neglected by most researchers in Kenya. The researcher intends to fill this gap by studying both financial and non-financial firm characteristics to see how they affect the firm performance especially in the agricultural sector. The researcher intends to see how the combined effect of these variables (both financial firm characteristics such as leverage and liquidity as well as non-financial firm characteristics such as board size, firm size and firm age) will have a synergetic effect on firm performance instead of being analyzed independently by previous researchers above.

1.3 Research Objectives

The objective of this study is to determine the effect of selected firm characteristics on financial performance of firms listed in the agricultural sector at the Nairobi Securities Exchange.

1.4 Value of the Study

This study will be significant and beneficial to the following users:

This study will be utilized by scholars as it will provide information to future scholars who may wish to research on this topic further. It will not only help scholars who may wish to test the existence of these firms' characteristics in other industries of their interest but also it will add to the existing body of knowledge in finance.

To the management, this study will provide the management of these companies under study with an understanding of how these firm characteristics affect the financial performance of their companies. It will give them a competitive edge against their competitors and enable them to craft strategies that will overall boost their firm financial performance.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of literature on firm characteristics, individual theory of selected firm characteristics and how they affect financial performance. This chapter will look into the various theoretical frameworks advanced, empirical studies conducted as well as summary of the research gap.

2.2 Theoretical Review

This sub topic will look into the general theory relating to firm characteristics as well as the theories advanced on selected firm characteristics under study but shall only mention a few .

2.2.1 Resource Based View

Pearce and Robinson (2011) define the resource-based view (RBV) as a method of analyzing and identifying a firm's strategic advantages based on examining its distinct combination of assets, skills, capabilities, and intangibles as an organization. This theory is concerned with internal firm-specific factors and their effect on performance. It views the firm as a bundle of resources which are combined to create organizational capabilities which it can use to earn above average profitability (Grant, 1991). Each firm develops competencies from these resources, and when they are well developed, these become the

source of the firm's competitive advantages. Penrose (1959) explains the importance of unique bundles of resources a firm controls that are crucial for its performance. Such resources include all tangible and intangible assets, capabilities, organizational processes, firm attributes, information, and knowledge controlled by a firm, in order to improve efficiency and effectiveness that will overallly lead to higher financial performance (Daft, 1995).

The thirst to understand the effects of firm level characteristics on financial performance has been debated a lot in the research arena. One side argues that the firm financial performance is influenced only by structural characteristics of the industries (Bain, 1954, 1959) and on the other hand some argue that it is influenced by firm specific resources. In recent times, much focus has been given to the firm level characteristics as opposed to the industry level characteristics because it forms the basis upon which the firms compete.

The industry related factors is majorly explained by the competitive focus approach who main proponents are Porter (1980) and Bain (1954, 1959). However, for the purpose of this study it will only be mentioned but not in detail so that we do not lose focus on firm characteristics on financial performance. The theory that explains the effect of firm characteristics which are internal factors to the organization with respect to financial performance is the resource-based view (RBV).

Many researchers have carried out studies to test which of the two commonly disputed factors whether industry factors or firm specific factors are important in explaining firm performance variation. Schmalensee, (1985); Wernerfelt and Montgomery (1988); Rumelt (1991); Chang and Singh (2000) and Hawawini, Subramanian and Verdin (2008)

performed variance component analysis test to investigate the percentage of effects of firm characteristics and industry factors on firm performance as measured by return on assets (ROA). Under the resource-based view, the firm is seen to be heterogeneous and that they possess a combination of unique capabilities and assets that are responsible of giving them an upper hand in competition that could enable them to achieve superior performance. Wernerfelt (1984) who was the earlier supporter of the resource based view theory did not get much attention at that time but was later revisited by other scholars like Grant (1991); Stalk, Evans and Schulman (1992) and Williams (1992) who found that companies with particular set of skills and capabilities outperformed their rivals. Wernerfelt (1984) describes a resource as “anything which could be thought of as a strength or weakness”.

However, the criticism put across on the use of RBV is that researchers only concentrates with one resource type; that is, intangible assets within a single industry and examine its effect on firm performance (Kapelko, 2006). This theory will aide in explaining performance variation of intra industry firms as it specifically addresses firm characteristics rather than industry factors. The financial resources are normally measured by leverage ratios which enable the firm to increase its project financing by borrowing from debt providers. Liquidity measures also the spontaneous financial resources available to conduct normal business operations. The physical resources as measured the assets size is one of the tangible resource the firm can use to gain competitive advantage whereas business experience of the firm and serving board of directors gives the firm organizational capabilities that it can use to gain a competitive advantage over its competitors thus being able to earn an above average financial

performance. The board is seen to the strategic resource that is responsible for the advancement of organization to meets its long-term mission and vision.

2.2.2 Theories Relating to Selected Firm Characteristics

2.2.2.1 Trade-Off Theory

This theory postulates that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. Kraus and Litzenger (1973) who were the first to put this theory considered a balance between the dead-weight costs of bankruptcy including the agency cost and the tax saving benefits of debt. Interest expenses on debt are tax deductible and as such it may be used to reduce the taxable income which will consequently reduce tax liability. However, the use of debt financing also increases financial risk to a company which may consequently lead it to financial distress.

Niu (2008) observes that managers of companies regard debt-equity decisions as trade-off between interest tax shield of debt and associated leverage costs such as bankruptcy, agency costs and loss of non-debt tax shield. This theory contends that the firm sets a target leverage ratio which it gradually moves towards it. Trade-off theory predicts that highly profitable firms that have more debt servicing capacity and more taxable income to shield will have higher debt ratios and firms that have high growth opportunities should have low debt ratios because they borrow less to avoid losing value in financial distress and will mostly rely on equity financing.

2.2.2.2 Pecking Order Theory

This theory was developed by Myers and Majluf (1984) which postulates that the cost of financing increases with asymmetric information. Financing comes from three sources, internal funds, debt and new equity. Companies prioritize their sources of financing, first preferring internal financing, and then debt, lastly raising equity as a “last resort” (Myers, 2001). This theory maintains that firms follow a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required. The firm will first use retained earnings in financing its projects because it does not have any floatation costs nor does it require any additional disclosure about firm’s investments opportunities and their potential profit that managers do not want to be made public.

The managers are not ready to lose control to new incoming owners by way of new share issue and also they do not want to subject the firm to negative market reaction surrounding the new share issue. Should the firm be in so much need of external financing it will first use debt, convertible securities, preference shares, and lastly ordinary shares in that order. Thus, the leverage choice on the form debt a firm chooses can act as a signal to outside investors of its need for external finance and also used as a deliberate strategy by managers of firms to mitigate the inefficiencies of investments decision they undertake that are caused by information asymmetry.

2.2.2.3 Agency Cost Theory

The agency theory contends that when ownership and control in an organization is separate, the managers may act out of self-interest and are self-centered, thereby, giving less attention to shareholders' interests. The separation of ownership and control in an organization may result in managers pursuing different objectives other than that of the firm such as perquisites, choosing inputs or outputs that their own preferences, or otherwise failing to maximize firm value. In effect, the agency cost of outside ownership equal to the lost value from professional managers maximizing their own utility, rather than the value of the firm" (Berger, 2002). Greater financial leverage may affect managers and reduce agency costs through the threat of liquidation, which causes personal losses to managers of salaries, reputation, perquisites and also through pressure to generate cashflow to pay interest expense. The agency cost hypothesis argues that highly leveraged firms can reduce the agency cost of outside equity and improves firm's performance which effectively increases firm value. Myers (1977) observes that highly leveraged firms can mitigate conflicts between shareholders and managers concerning the choice of investment. It posits that the choice of capital structure helps in mitigating agency costs and thereby influences firm performance (Berger, 2002).

Much as this theory affects leverage decisions that need to be taken to address agency conflict arising, it also helps in explaining the corporate governance role played by board of directors in monitoring the agents (managers) of the firm. The board of directors as governance mechanism helps in keeping on toes the managers who pursue self-interest at the expense of shareholder's wealth maximization objective (Fama and Jensen, 1983).

The board of director will effectively provide an oversight authority to ensure that the interests of shareholders are not infringed by managers who are internal players in the firm they are serving. Hence the bigger the board sizes the effective the monitoring role it is having over the agents.

2.2.2.4 Resource Dependence Theory

The resource dependence theory suggests that larger boards are associated with higher levels of firm performance. The theory contends that a larger and diverse board size will be able to effectively link their organizations to the external environment and be able to attract critical resources, including prestige and legitimacy. Goodstein, Gautam and Boerker (1994) and Lawler, Finegold, Benson and Conger (2002) cite that for a board to be functional it has three dimensions which are firstly scanning the environment for opportunities and threats, secondly giving constructive feedback and guidance to the chief executive officer (CEO) and lastly to provide business network of contacts and external sources of knowledge to enhance firm performance.

Pearce and Zahra (1992) found that larger board size leads to higher subsequent performance. The same finding was documented by Vafeas (1999) that board size is positively related to board activity requiring more time to attain a given performance. However not all scholars agree with the theory above and have found findings which are quite the opposite. Eisenberg, Sundgren and Wells (1998) found a negative relationship between board size and firm performance. Yermack (1996) and Conyon and Peck (1998) found weak evidence of the existence of an inverse relationship between board size and

firm performance. Locally in Kenya, Chogii (2009) found that board size was negatively correlated to financial performance. Fama and Jensen (1983) and Lipton and Lorsch (1992) explain that larger boards are very effective and that the CEO will not be able to control the board easier.

2.2.2.5 Stakeholder Theory

This theory posits that the management of the organization has a network of relationships to serve in its stakeholder's circle in its achievement of corporate goals. It was developed by Freeman (1984) to expand the understanding of corporate accountability to include a broad range of stakeholders to include customers, suppliers, employees, business associates, government and its agencies, financial institutions etc.. Mitchell, Agle and Wood (1997) argue that stakeholders can be identified by looking at either one or two or all three of the associative attributes namely: firstly, the power to influence the firm, secondly, the legitimacy of relationship with the firm, and lastly the urgency of their claim on the firm.

Donaldson and Preston (1995) observe that all stakeholders participating externally or internally in the organization have an interest to fulfill. They further explain the characteristics and behaviors of firms including how the organizations are managed, how the board of directors thinks about corporate units, the way the managers think about managing and the nature of the organization itself. In this regards, the firm should strive to satisfy not only the interests of its shareholders but also the interests of other relevant stakeholders. Hence the board should ensure that the firm acts on opportunities that

enhances value to all the relevant stakeholders and also prevent bad management practices that may expose the firm to scandals or risk of financial distress. To ensure these achievements, the board team should consist of more members with diverse competencies, experience as well as capabilities that will effectively discharge its governance function.

2.2.2.6 Stewardship Theory

This theory is quite the opposite of the agency theory which suggests that the agents are trustworthy and good stewards of the resources entrusted to them under their care and thus making monitoring useless (Donaldson and Davis, 1991; Davis, Schoorman and Donaldson, 1997). This theory opposes the agency theory which assumes that managers will act to satisfy their own self-interest rather than that of the organization. Donaldson and Davis (1991) argue that stewards who are the managers, executives and board of directors are satisfied and motivated when the organizational objectives are achieved. Davis et al. (1997) argues that stewards derive a greater utility at personal level by satisfying organizational objectives than through self-serving behavior and as such the managers and directors are also concerned about their personal reputation as expert decision makers which drives their effort in the achievement of better financial performance of their organizations they are serving.

According to this theory, other non-financial motives such as need for achievement and recognition, personal satisfaction gained by successful achievement of organizational goal, respect for authority and peers as well as work ethics of the organization they serve

influences stewards actions. This theory contends that superior financial performance is linked to having majority of inside directors as opposed to external directors since inside directors better understand the business, and are better placed to govern than outside directors, and can therefore make sound financial decisions which leads to higher financial performance (Donaldson & Davis, 1991; Davis, et al., 1997).

2.2.2.7 Organizational Theory

This theory explains the effect of firm size and firm age on firm performance. Several organizational theorists have argued their part of the story and explains how firm size and firm age impact firm performance. Baumann and Kaen (2003) in an attempt to explain firm size came up with the organizational theory that explain firm size in relation to profitability as well as with organizational transaction costs, agency costs and span of control costs. Some of the organizational theorist like Dean et al., (1998) cite that firm size is somewhat related to financial performance because of industry-sunk costs, concentration, vertical integration and overall industry profitability.

Daft (1995) explains why firm size matter in assessing financial performance. He further argues that large sized firms have multi-layer levels of management, greater number of departments, have more specialized skills and functions, there is greater formalization and management control is highly centralized which makes large-sized firms to be highly bureaucratized than small-sized firms which effectively makes them miss out on urgently profitable opportunities. Other organizational theorists like Hannan and Freeman, (1984); Aldrich and Austen, (1986); Meyer and Zucker, (1989) and Miller and Chen, (1994) have

linked firm size and firm age to inertia. Miller and Chen (1994) define inertia as an inadequate or slow adaptation to change or resistance to fundamental changes in conducting business which in effect may cause the firm to miss profitable opportunities.

Stinchcombe (1965) argues that older firms are more experienced and have enjoyed the benefits of learning curve effect which makes them not being exposed to the liabilities of newness and they therefore enjoy above average performance. Penrose (1959) argues that larger firms are able to generate superior performance because they have diversified capabilities, ability to fully exploit economies of scale and scope and they have formalized procedures of conducting business which ultimately makes implementation of operations more effective. However, a different view has been aired by Leibensten (1976) and Shepherd (1986), they argue that firm size is correlated with market power and along with market power x-inefficiencies are created leading to inferior performance.

2.3 Empirical Review

A study conducted by Yermack (1996) investigating the relationship between board size and financial performance was using a sample of 452 large US industrial corporations between the year 1984 and 1991. He found an inverse relationship between firm performance as measured by Tobin Q and board size. He found that smaller were boards were effective compared to larger board. Amongst other independent variables that were regressed using multi variate regression against Tobin Q was firm size and was found to be positively correlated to firm performance.

Majumdar (1997) conducted a study of 1020 Indian firms to investigate the impact of firm size and firm age on firm level productivity and profitability by running a two multi-variate regression using data from the year 1988 to 1994. He found that firm size had positive effect on profitability but negative effect on productivity as shown in the signs of the co-efficient. With regards to firm age, he found that it was positively related to productivity but was negatively related to profitability.

Nunes, Serrasqueiro and Sequeira (2008) in their study investigating 75 Portuguese service oriented companies (375 observations) to see the effect of firm size on profitability and introducing several control variables in the study such as growth, debt (leverage), liquidity and asset structure (tangibility) was using both static panel models and dynamic estimators. They found positive and statistically significant relations between the size and performance of the firms as a result of the study using the data belonging the years 1999-2003. As for the control variables, they found a positive effect of growth and liquidity on profitability but a negative effect of firm leverage and asset structure (tangibility) on firm profitability as measured by ROA.

A study conducted by Pacini, Hillison and Marlett (2008) investigating the relationship board size and firm performance in the property-liability (P & L) insurance industry was using a sample of 59 publicly traded P & L insurers using financial and corporate governance data from year between 1999 to 2001 in USA. Amongst other control variables used by the researchers were firm size measured by market value of equity and leverage measured by total debt to total equity whereas firm performance was measured by three variables market-to-book ratio (MBR), pre-tax return on revenue (ROR) and

lastly operating ratio (OPR). The study employed a multi variate regression analysis as well as univariate regression analysis. The researchers found that leverage is inversely related to all the three measures of performance. They documented an inverse relationship between board size and MBR and ROR and there was positive relationship between board size and OPR and lastly they found that firm size was positively related to all the three measures of performance MBR, ROR and OPR.

Lee (2009) in his study to investigate effect of size of firm performance dubbed “ does size matter in firm performance: evidence form US public firms” found firm size to be a key determinant in explaining profitability of 7,158 US publicly held companies in US stock exchanges using data of over 20 years period between 1987 and 2006. The researcher used panel data and run a multi variate regression of firm size amongst other control variables against firm performance as measured net income plus advertising expenses over total assets.

Dogan (2013) investigated the effect of firm size on firm profitability of 200 companies listed at the Istanbul Stock Exchange using data from the year 2008 to 2011 by using multi variate regression model. He introduced other control variables in his study such as liquidity which was measured by total current assets over total current liabilities, leverage measured as total debt over total liabilities as well as firm age measured by number of years in operations. Dogan (2013) found that firm size and liquidity was positively related to profitability as measured by ROA and leverage and firm age were negatively related to profitability measured by ROA.

A study conducted by Yazdanfar (2013) investigating profitability determinants among micro firm using Swedish data of a sample of 12,530 micro firms from four different industries namely healthcare, transport, metal and retail trade industries having approximately 87,000 observations from data collected from the year 2006 to 2007 found that there was a positive and significant relationship between firm growth, firm size, lagged profitability and productivity to firm profitability measured by ROA. The study also revealed a significant and negative relation between firm age and firm profitability explaining that younger firms were more profitable than older firms. The researcher employed seemingly unrelated regression method which utilized the multi variate regression analysis and also correlation analysis was employed in the data analysis of the collected data. The researcher went ahead and analyzed all the four industries separately by running another multi variate regression to see whether the results will vary but apparently all the findings were similar as the combined regression. In fact the R-Square (co-efficient of determination) were ranging from 37.33% to 49.13% and that the model was able to explain such variations in firm profitability.

A study conducted by Chogii (2009) testing various corporate governance theories and firm performance using data from the year 2004 to 2007 and a sample which is unclear but he claims that only actively trading companies at the NSE were studied and that he excluded banks and other financial institution because of their unclear debt structure. He used two multi variate regression models one of which used ROA and Tobin Q as the measure of firm performance against board size, outside director representation, inside director representation as well as three control variables which were asset structure (fixed assets/ total assets), firm size (log of assets) and debt structure (total debts/ total assets).

He found that board size was negatively related to both Tobin Q and ROA as measures of performance. As for the effect of control variables, when asset structure and debt structure were included in the model for regression, Chogii (2009) got a higher R-Square of 22.4% than when he regressed only independent variable without control variables of about 8.2%.

A study conducted by Ondiek (2010) investigating the relationship between capital structure and financial performance of firms listed at the NSE using data obtained from the NSE as at June 2010 for all the listed companies. She used multi variate regression analysis where she was regressing ROE as measured by EBIT over equity as her performance measure proxy against SDA (short term debt/ total capital), LDA (long term debt/ total capital), DA (total debt/ total capital), firm size (log of sales) and sales growth. She ran three different regression models that excluded two of LDA, SDA and DA so that she can see the effect of each on R-Square results. She found that DA had the largest explanatory power of 86.39% compared to SDA and LDA. However, in all the models she found that firm size and sales growth were positively related to profitability and SDA was positively related to firm performance significantly and LDA was significantly negative when related with firm performance.

A study conducted by Ngila (2012) investigating the effects of corporate governance practices on the performance of forex bureaus in Kenya selected a sample of 24 forex bureaus out of a population of 111 forex bureaus at the close of year 2011. Financial performance was measured by both ROA and ROE and board size was measured by number of directors on board amongst other corporate governance variables which were

regressed using multi variate linear regression. In both the two models, findings shows that board size was negatively relating to ROA and ROE.

2.4 Summary of Literature Review

The only closest study done to this was that done by Nunes, Serrasqueiro and Sequeira (2008) and Dogan (2013) but they also ignored the board size in their studies. It can be concluded from the previous empirical studies that none has carefully studied both financial and non-financial firm characteristics simultaneously so that their combined synergetic effect could be examined on firm financial performance.

This study will focus on the agricultural sector and merge all the independent studies done by different researchers discussed previously in order to have an understanding of the different firm characteristics both financial and non-financial so that their combined effects on firm performance can be analyzed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter presents details of the methodology that was be adopted for this study. It describes the research design, sampling design, target population, data collection procedures and data analysis procedures.

3.2 Research Design

Kothari (2004) refers to research designs as a blue print through which research operations sail smoothly which makes the research as efficient as possible in terms of effort, time and money and at the same time reaping out maximum information possible. This study used correlation research design. Correlation research design is used to examine the relationship between two or more variables.

3.3 Population

The population of this study consisted of all listed agricultural companies at the Nairobi Securities exchange. The study used a census population consisting of all the seven listed agricultural companies at the NSE, refer to appendix 1.

3.4 Data Collection

The data was sourced from secondary sources namely audited financial statements at Capital Market Authority website and library which enabled the researcher to compute the relevant ratios shall whereas firm age and number of board of directors shall be read from the notes provided in the financial reports. As for the year of incorporation the research made use of websites to check for each of the individual agricultural firm. The period of study covered the years 2007 to 2012 and selected the seven listed firms under the agricultural category at the NSE.

3.5 Data Analysis

This study used descriptive statistics such as means, standard deviations etc. The study also ran multi-variate regression analysis to see the extent of relationship of the various firm characteristics in explaining variations in firm financial performance. Several significance tests were applied to the variables and model under study to see the significance of the variables and the fitness of the overall model. Correlational analysis was employed in the study to see the direction and effect of various firm characteristics on firm financial performance. Further the researcher analyzed using multi-variate linear regression the coefficient of determination (R squared), ANOVA, and beta coefficients for the model to explain how much the model will explain the changes in the dependent variable, which is ROA.

3.5.1 Research Model

The study used the following research model as the one that was adopted by Nunes, Serrasqueiro and Sequeira (2008) and Dogan (2013) but did not consider using asset structure and growth as one of observation for growth will be lost in computation. Instead the researcher introduced board size and firm age to look into the effect of these non-financial firm characteristics to assess their impact of firm performance.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \mu$$

$$ROA = f(\text{Firm Size, Leverage, Firm Age, Liquidity, Board Size})$$

The definition of the variables in the research model is as follows:

Y is the ROA as the measure of firm performance computed as $ROA = \frac{\text{Net Income}}{\text{Total Assets}}$

X₁ is Firm Size = Natural Log of Assets.

X₂ is Firm Leverage computed as $\text{Firm Leverage} = \frac{\text{Total Debt}}{\text{Total Assets}}$

X₃ is Firm Age = Number of years in operation.

X_4 is Liquidity computed as $\text{Liquidity} = \frac{\text{Total Current Assets}}{\text{Total Current Liabilities}}$

X_5 is Board Size = Number of board members.

(0, 1, 2, 3, 4, & 5) are the beta coefficients for the respective independent variables

μ is the error term in the model

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents analysis, results and discussion of findings of the study as set out in the research methodology. The data was analyzed using IBM SPSS (Statistical Package for Social Sciences) version 20 software and the findings were presented in tables as follows: descriptive statistics, correlation analysis and partial correlation analysis, and regression analysis. Most data was collected from audited financials reports relating to variables such ROA, Firm Size, Liquidity, Leverage and Board Size but for computation of Firm Age, the year of incorporation was sourced from websites. Six out of the seven listed agricultural companies at the NSE whose data was readily accessible were analyzed from the year 2007 to 2012 which were namely kapchorua tea company limited, kakuzi limited, limuru tea company limited, rea vipingo plantations limited, sasini limited and williamson tea kenya limited. Eaagads financials were not accessible even after having gone to controlling and managing shareholder at their registered offices in Ruiru at Kofinaf Estates.

4.2 Descriptive Analysis

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Return on Assets (Ratio of net income to total assets)	36	-.0711	.4728	.110122	.1046213
Firm Size (Natural log of assets)	36	17.8659	22.9706	21.285897	1.4009049
Leverage (Ratio of debt to assets)	36	.0000	.2750	.043847	.0683805
Firm Age (Years)	36	12	87	59.67	23.452
Liquidity (Ratio of current assets to current liabilities)	36	.7845	18.2869	3.333339	3.4590972
Board Size (No. of directors)	36	2	9	5.94	1.985
Valid N (listwise)	36				

Source: Researcher (2013)

Table 1 above shows that the average net income earned on total assets for the 36 observation made from the six companies from the year 2007 to 2012 is 11.01% with a high standard deviation of 10.46%; the data includes an observation from a firm making a loss on its total assets employed of 7.11% whereas maximum ROA of 47.28% implying that an observation from firm whose performance is remarkable earning 47.28% profits as a percentage of total assets. N is 36 meaning that the number of observation is 36 from 6 companies for 6 years period of data from 2007 to 2012. The table 1 above also shows that the average firm size as measured by the natural logarithm of assets for the 36 observation made from the six companies from the year 2007 to 2012 is 21.29 as a power of natural logarithm of its total assets with a low standard deviation of 1.4 power of natural logarithm of total assets varying from an observation from a firm which had a lowest power of natural logarithm of its total assets of 17.87 to a maximum observation from a firm having of 22.97 power natural logarithm of its total assets.

The average leverage for the observations is 0.044 as a ratio of debt levels to total assets implying that on average 4.4% debt was used in financing total assets with a standard deviation of 0.068 in debt levels to total assets varying from a range of lowest observation from a firm having 0 debt levels in financing the total assets to one of the highest observations showing that 27.5% of debt was used in financing total assets. The average age of the agricultural company in the industry is 59.67 years with a varying standard deviation of 23.45 years from a range of 12 years to a maximum age of 87 years. Liquidity of these companies on average is 3.333 as a proportion of total current assets to total current liabilities implying that for every shilling of current liability there is 3.33 shillings of current assets to settle it as and when it falls due with a standard deviation of 3.46 as a proportion of total current assets to total current liabilities varying from a low observation from a firm having Ksh.0.785 of current assets to settle every shilling of current liability to a maximum observation from a firm having Kshs.18.287 worth of current assets to settle every shilling of current liability. Lastly the average board size for these companies was almost 6 directors having a standard deviation of almost 2 directors with the minimum number being 2 to a maximum of 9 directors serving in a board.

4.3 Correlation Analysis

Table 2: Full Pearson Correlation Matrix

		Return on Assets	Firm Size	Leverage	Firm Age	Liquidity	Board Size
Return on Assets	Pearson Corrltn	1	-.425**	-.080	.261	.518**	-.481**
	Sig. (2-tailed)		.010	.642	.124	.001	.003
	N	36	36	36	36	36	36
Firm Size	Pearson Corrltn	-.425**	1	.138	-.292	-.485**	.910**
	Sig. (2-tailed)	.010		.422	.084	.003	.000
	N	36	36	36	36	36	36
Leverage	Pearson Corrltn	-.080	.138	1	-.634**	-.308	-.001
	Sig. (2-tailed)	.642	.422		.000	.068	.993
	N	36	36	36	36	36	36
Firm Age	Pearson Corrltn	.261	-.292	-.634**	1	.416*	-.134
	Sig. (2-tailed)	.124	.084	.000		.012	.437
	N	36	36	36	36	36	36
Liquidity	Pearson Corrltn	.518**	-.485**	-.308	.416*	1	-.433**
	Sig. (2-tailed)	.001	.003	.068	.012		.008
	N	36	36	36	36	36	36
Board Size	Pearson Corrltn	-.481**	.910**	-.001	-.134	-.433**	1
	Sig. (2-tailed)	.003	.000	.993	.437	.008	
	N	36	36	36	36	36	36

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

* . Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher (2013)

The Pearsonian correlation matrix is useful for analyzing data that is non-categorical in nature and uses interval measurement scale (Field, 2009). However, Pearson correlation matrix may pose a problem if two variables are analyzed but the effect of the third confounding variable(s) is/are not controlled for (Field, 2009). This problem will however be corrected by analyzing further the isolated effect of two variables and controlling for the other four variables in our study using partial correlation matrix to aid in clearly isolating the size effect of all the six variables under study.

From the table 2 above it can clearly be see that there is a moderate negative relationship between firm size and return on assets with an R (Pearson correlation coefficient) = -0.425, P : significance value of (two-tailed) < 0.01; fairly small negative relationship between leverage and return on assets with an R = -0.080. Firm age was positively related with firm performance as indicated by R = 0.261 though small in effect. Liquidity significantly exhibited as strong positive relationship with firm performance as measured by ROA having an R of 0.518, P (two tailed) < 0.01 meaning that the probability of us getting this R of 0.518 in a sample of 36 observations if there was no relationship between ROA and liquidity is very low (close to zero in fact).

As for the board size and ROA there was a significantly large negative relationship between them at an R of -0.481, P (two tailed) < 0.01 meaning the probability of getting an R = -0.481 if there was no relationship between board size and ROA is negligible and thus shows that such negativity will be exhibited if a random observation was to be picked from a sample 36 observations. However, the association of these five independent variables (firm size, leverage, firm age, liquidity and board size) to the dependent variable, ROA is not uniquely from the mere association of a single individual independent variable and dependent variable because of the other four independent variables also are related to it as it can be seen from the full Pearson correlation analysis. Thus it shall be imperative to analyze the effect of a single independent variable to the dependent variable while controlling the effects of shared influences of the independent variables to ROA. In effect, the researcher will analyze only the “true and unshared” effects of firm size, leverage, firm age, liquidity and board size on ROA.

Table 3: Partial Correlations for ROA and Firm Size

Control Variables			ROA	Firm Size
Leverage & Firm Age & Liquidity & Board Size	ROA	Correlation	1.000	.178
		Signif. (2-tailed)		.330
		df	0	30
	Firm Size	Correlation	.178	1.000
		Signif. (2-tailed)	.330	
		df	30	0

Source: Researcher (2013)

From the table 3 above, it can be seen that firm size and ROA are positively related $R=0.178$, P (two tailed) < 0.330 though not statistically significant and its effect is very small in size; while controlling for the effects of the other four independent variables that also had an effect on firm size so that the true independent effect of firm size on ROA is strictly observed.

Table 4: Partial Correlations for ROA and Leverage

Control Variables			ROA	Leverage
Firm Size & Firm Age & Liquidity & Board Size	ROA	Correlation	1.000	.105
		Signif. (2-tailed)		.568
		Df	0	30
	Leverage	Correlation	.105	1.000
		Signif. (2-tailed)	.568	
		Df	30	0

Source: Researcher (2013)

From the table 4 above, it can be seen that leverage and ROA are positively related $R=0.105$, P (two tailed) < 0.568 though not statistically significant and its effect is very small in size; while controlling for the effects of the other four independent variables that

also have an effect on leverage so that the true independent effect of leverage on ROA is strictly observed.

Table 5: Partial Correlations for ROA and Firm Age

Control Variables			ROA	Firm Age
Firm Size & Leverage & Liquidity & Board Size	ROA	Correlation	1.000	.178
		Signif. (2-tailed)		.330
		Df	0	30
Firm Age	Firm Age	Correlation	.178	1.000
		Signif. (2-tailed)	.330	
		Df	30	0

Source: Researcher (2013)

From the table 5 above, it can be seen that firm age and ROA are positively related $R=0.178$, P (two tailed) < 0.330 though not statistically significant and its effect is very small in size; while controlling for the effects of the other four independent variables that also had an effect on firm age so that the true independent effect of firm age on ROA is strictly observed.

Table 6: Partial Correlations for ROA and Liquidity

Control Variables			ROA	Liquidity
Firm Size & Leverage & Firm Age & Board Size	ROA	Correlation	1.000	.366
		Signif. (2-tailed)		.039
		Df	0	30
Liquidity	Liquidity	Correlation	.366	1.000
		Signif. (2-tailed)	.039	
		Df	30	0

Source: Researcher (2013)

From the table 6 above, it can be seen that liquidity and ROA are positively related $R=0.366$, P (two tailed) < 0.039 and is statistically significant having moderate effect; while controlling for the effects of the other four independent variables that also had an effect on liquidity so that the true independent effect of liquidity on ROA is strictly observed.

Table 7: Partial Correlations for ROA and Board Size

Control Variables			ROA	Board Size
Firm Size & Leverage & Firm Age & Liquidity	ROA	Correlation	1.000	-.298
		Signif. (2-tailed)		.098
		Df	0	30
	Board Size	Correlation	-.298	1.000
		Signif. (2-tailed)	.098	
		Df	30	0

Source: Researcher (2013)

From the table 7 above, it can be seen that board size and ROA are negatively related $R = -0.298$, P (two tailed) < 0.098 and is statistically significant having moderate effect; while controlling for the effects of the other four independent variables that also had an effect on board size so that the true independent effect of board size on ROA is strictly observed.

Partial correlation solves the problem of the other independent confounding “third” variable effect on two variables being analyzed (the dependent and independent variables). Consequently, the shared effects of more than two independent variables is being eliminated giving us only the size effect of the individual independent variable effect on the dependent variable. In effect, these findings will support empirical evidence that will be discussed in the regression analysis that shows firm size, leverage, firm age,

and liquidity are having positive coefficients while board size is having a negative coefficient. If the researcher was to only look at the full correlation matrix on its own and interpret it without giving due consideration to partial correlation matrix, it would not lead to supportive and logical conclusions based on regression analysis.

4.4 Regression Analysis

The researcher ran a multi variate linear regression for the six variables relating to data from the year 2007 to 2012 for the six companies mentioned earlier into IBM SPSS version 20 and the results were tabulated below.

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.619 ^a	.383	.280	.0887464	1.566

a. Predictors: (Constant), Board Size, Leverage, Liquidity, Firm Age, Firm Size

b. Dependent Variable: Return on Assets

From the above table 8, It can be seen that R^2 (co-efficient of determination) is 38.30% meaning that the predictors in the model (Board Size, Leverage, Liquidity, Firm Age, Firm Size) can only explain the variation of ROA by only 38.30% .The model cannot explain a variation of 61.7% in ROA because there are other variables which are responsible for explain that 61.7% variation are not currently in the model. The adjusted R square explains what will happen to the co-efficient of determination (R^2) if other variables were to be included or excluded as it will result in loss or increase of degrees of freedom in the model. Since the Durbin-Watson is 1.566 lying in the range of $[D_u]$ of 1.1799 (from DW statistics Table) and $[4-D_u]$ which is 2.8201 on the no autocorrelation region, there was no evidence for autocorrelation in the data.

Table 9: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.147	5	.029	3.728	.010 ^b
Residual	.236	30	.008		
Total	.383	35			

a. Dependent Variable: Return on Assets

b. Predictors: (Constant), Board Size, Leverage, Liquidity, Firm Age, Firm Size

From the ANOVA table 9 above, there is a statistically significance fit of the overall model since the Critical F is less than Computed F statistic above i.e. Critical $F_{5,30} (\alpha = 0.05)$ is 2.53 (checked from F tables) is less than computed F statistic of 3.728 and hence the overall model is fit for forecasting with a confidence level of 95%.

Table 10: Coefficients & Collinearity Tests

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.391	.524		-.746	.461		
	Firm Size	.028	.029	.379	.989	.330	.140	7.126
	Leverage	.167	.289	.109	.578	.568	.577	1.732
	Firm Age	.001	.001	.199	.989	.330	.509	1.963
	Liquidity	.011	.005	.378	2.154	.039	.667	1.499
	Board Size	-.033	.020	-.635	-1.707	.098	.149	6.729

a. Dependent Variable: Return on Assets

In table 10 above, the various coefficients are shown on the first column with an intercept of -0.391 which shows that if all the five predictors (firm size, leverage, firm age, liquidity, and board size) were to be equated to zero then ROA will be -0.391. The firm size beta coefficient is 0.028 which implies that if the size of the firm was to be increased by 1 unit of natural logarithm of assets then a corresponding increase of ROA by 0.028 will increase too. Same thing for an increase in one unit of leverage, will translate to

0.167 increases to ROA. As for an incremental one year increase in age of a firm will improve the firm's ROA by a slight increase in 0.001 in ROA. Like wisely, if one unit increase of liquidity was to be increased then ROA would be increased to 0.011. However, an increase in one board member will result into a decline of ROA by 0.033. These results complement well the findings of the partial correlations initially done to see effect of one variable while controlling for the effects of the other four predictors.

The resulting multi variate linear regression model is as follows:

$$\text{ROA} = -0.391 + 0.028\text{Firm Size} + 0.167\text{Leverage} + 0.001\text{Firm Age} + 0.011\text{Liquidity} - 0.033\text{Board Size} + \mu$$

The study also conducted a multicollinearity tests to determine if two or more predictor (independent) variables in the multiple regression model are highly correlated. The study used tolerance and variance inflation factor (VIF) values for the predictors as a check for multicollinearity. Tolerance indicates the percentage of variance in the independent variable that cannot be accounted for by the other independent variable while VIF is the inverse of tolerance. The table 10 above shows that tolerance values ranged between 0.140 and 0.667 while VIF values ranged between 1.499 and 7.126. Since tolerance values were above 0.1 and VIF below 10, then were was no evidence multicollinearity in the multiple regression model.

4.5 Discussion of Findings

The various firm characteristics were analyzed above and the findings of four firm characteristics namely firm size, firm age, liquidity and leverage were found to be

positively related to firm performance as measured by ROA and also having positive beta coefficient that measures their gradients. However, the only predictor variable that was negatively related to firm performance was board size having a negative correlation of coefficient and also negative slope as measured by the beta.

Firm size was positively related to firm performance as the same findings were observed by Penrose (1959); Majumdar (1997); Nunes, Serrasqueiro and Sequeira (2008); Lee (2009); Dogan (2013) and Yazdanfar (2013). This is because bigger firms have stronger resource base which they can use to seize a profitable opportunity that comes along their way and needless to mention the bigger market share they command. As for leverage the findings shows that it was positively related to firm performance as measured by ROA though the effect was small. This finding contradicts what was observed by Nunes et al., (2008); Pacini, Hillson and Marlet (2008) and Dogan (2013). This implies that the extra unit proportion of external financing from debt providers compared to total financing from all providers of capital contributes positively to firm performance.

The findings shows that firm age is weakly related to firm performance as evidenced by the studies of Kristiansen et al., (2003) and Islam et al., (2011) but contradicts the findings of Majumdar (1997); Dogan (2013) and Yazdanfar(2013) which found negative relationship. This implies that older firms have a competitive advantage over new comers in the industry but not by a big margin as shown beta coefficient. Moreover, older firms have by learning curve effect lower their average operating costs compared to new entrants. Also older firms have well established business networks and knowledge of

their market in which they serve and thus being able to facilitate higher sales and negotiate for lower costs.

The study found liquidity was positively related to firm performance which supports findings of studies done by Goddard et al., (2005); Nunes et al., (2008) and Dogan (2013). All the six listed agricultural firms had an above average composition of accounts receivables in their current assets structure which implies that the companies were offering more credit sales to push up their total revenue which translates to increased profitability that in the long run affects the firm financial performance as measured by ROA. Given that the average liquidity in the industry was 3.33 meaning that for every shilling of spontaneous current liability owed there is 3.33 shilling readily available to settle the debt within one year or normal operating cycle whichever comes earlier.

The study also evidenced a negative relationship of board size to firm performance in both correlation analysis and also the beta coefficient from regression analysis. The same evidence was seen in the studies of Yermack (1996) and Chogii (2009) when they sought to find the relationship of board size to firm performance. Larger boards were efficient in agency controls but this could also lead to unhealthy checks to the NPV positive decisions made by CEO which are profitable to the long run profitability of the firm. Also large boards means huge wage bill for the firm which will effectively reduce the net profits especially when they engage in unfruitful meetings which only milks the company off huge allowances.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study, conclusions, recommendations, limitation of the study and suggestion for further research.

5.2 Summary of Findings

The study sought to investigate the effects of selected firm characteristics on financial performance of firms listed under the agricultural sector at the Nairobi Securities Exchange (NSE). Six out of the seven listed firms under the agricultural sector were studied from the year 2007 to 2012 for the various chosen firm characteristics namely firm size, leverage, firm age, liquidity and board size on firm performance measured by ROA.

The study found out that four independent variables were positively related firm performance namely firm size, leverage, firm age, liquidity but though the association for firm age with financial performance was weak. There was slight evidence of shared size effects in the five predictors and thus the researcher went ahead to analyze further the correlations partially while controlling for the other four independent variables to investigate its independent size effect on firm performance. However, board size and firm financial performance was negatively related.

The study also revealed the average ROA of the firm listed under the agricultural sector of NSE was 11.01% (Std Dev. 10.46%), average for firm size was natural logarithm of 21.29 (Std Dev. 1.4), average leverage for the firms was 0.04835 (Std Dev. 0.0683), the average age of firm in the industry was 59.67 years (Std Dev. 23.45years), the average liquidity of for the listed firms was 3.33 (Std Dev. 3.46) whereas the average board size consisted of 6 board members (Std Dev. 2 board members). The coefficient of determination as measured by R^2 was 38.3 % in explaining the variations of ROA by the five independent variables (firm size, leverage, firm age, liquidity and board size) and also the model was overally fit having an F statistic of 3.728 against the critical F of 2.53. Data diagnostic test was applied in the study to find if there was any autocorrelation but no evidence of autocorrelation was observed as measured by the DW statistic of 1.566. Multicollinearity tests were conducted and were measured by VIF and tolerance statistics which revealed no significant evidence of multicollinearity in the predictors.

5.3 Conclusion

The study concludes that there is a small positive effect of firm size on firm performance though not statistically significant at 95% confidence levels, the effect of leverage on firm performance is a small positive but not statistically significant at 95% confidence levels, there is relatively small positive effect of firm age on firm performance though not statistically significant at statistically significant at 95% confidence levels. As for liquidity, there is a moderate positive effect on firm financial performance which is statistically significant at 95% confidence level.

Board size was the only variable that was negatively and moderately associated with firm financial performance and the effect was statistically significant in the sample at 95% confidence level. The result from regression analysis shows that firm size, leverage, firm age and liquidity having beta coefficients of positive 0.028, 0.167, 0.001 and 0.011 respectively positively contribute firm financial performance for every 1 unit of these predictors to return on assets. However board size was negatively impacting firm performance having beta coefficient of negative 0.033 implying that for every additional director the firm performance declines by 3.3% in terms of return on assets.

5.4 Recommendations

The study therefore recommends that agricultural firm should carefully analyze the effects of various firm characteristics on firm performance and see its long-term effect on ROA. Bigger firms are seen to be doing well than smaller firms and if after careful analysis they can merge several small firm to create a mega firm whose financial resources will be more than sufficient to seize any profitable opportunities, if they cannot grow by themselves. As from evidence gathered the use of proportionate debt financing in relation to total capital financing is profitable, therefore the firms should use debt financing up to a point where any extra debt financing causes net cost to the firms. As for firm age there is little help they gain from staying in the industry for long and therefore they should constantly lower the age by increasing both the product and firm life cycles.

The firms should ensure that they keep their working capital positive and especially augment their sales by extending credit to their customers who on average form a half of their asset structure and also try to reduce current liability component by paying suppliers

promptly on agreed terms. However, extension of credit facilities should be done with caution not to have the firms broke. Finally, large boards are wastage of resources and incurrence of avoidable expenses which fleece the company revenues to support lavish life styles of directors, I therefore recommend small and efficient board sizes.

5.5 Limitation of the Study

The study only selected six out of the seven listed firms under the agricultural category at the NSE due to inaccessibility of data for Eaagads Limited even after traversing from CMA, Kofinaf Estates Limited in Ruiru (managing and controlling shareholder of Eaagads limited) going to Eaagads Certified Public Secretaries J. Maonga along Ngong road and finally to Sheria House for perusal of annual returns, nothing fruitful came out of it. The study also had limitation in terms of scope because it only concentrated on publicly listed firm and ignored private firms, this may limit fair findings that could have been gotten if a bigger number of observations could have been analyzed.

Also the findings only concentrated on a sector of the economy i.e. agriculture and any attempt to generalize the findings to the wide spread economy should be done with utmost care. The study only focused on five firm characteristics leaving out many potentially good firm characteristics which could have affected the overall model and explain more variations in firm financial performance. The study also did not capture any of the market related data so as to have real dynamism of the market operations.

5.6 Suggestions for Further Research

The study confined itself to only publicly listed agricultural firms at the Nairobi Securities Exchange from the year 2007 to 2012. I recommend that a study be undertaken to cover other private agricultural firms in the broader industry. The study also limited itself to only five firm characteristics variables, I recommend that additional variables to be included in the recommended study in the future so that all their effect could be analyzed and documented.

The same study could be replicated in other industries like financial institutions, manufacturing and energy and petroleum industry. To have a feeling of the effect of firm characteristics on firm performance in the greater East Africa Region to capture those firms in Tanzania, Uganda, Rwanda, Burundi and South Sudan. The study considered ROA as a measure of firm performance. In the future another study should be conducted incorporating other measures of performance to investigate whether the relationship will hold.

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APPENDICES

Appendix 1: Listed Agricultural Companies at the Nairobi Securities Exchange

1. Eaagads Limited
2. Kapchorua Tea Comapany Limited
3. Kakuzi Limited
4. Limuru Tea Company Limited
5. Rea Vipingo Plantations Limited
6. Sasini Limited
7. Williamson Tea Kenya Limited

Appendix 2: Data for Listed Agricultural Companies at the Nairobi Securities Exchange

YEAR OF FINCLS	COMPANY	AFTER TAX PROFIT FOR THE YEAR	TOTAL CURRENT ASSETS	TOTAL ASSETS	TOTAL DEBT	TOTAL CURRENT LIABILITIES	YEAR INCORPORATED	BOARD SIZE
		KSHS '000'	KSHS '000'	KSHS '000'	KSHS '000'	KSHS '000'		
2007	Kakuzi Ltd	191,597.00	337,274.00	2,373,681.00	395,445.00	429,922.00	1927	6
2008	Kakuzi Ltd	282,918.00	439,361.00	2,662,519.00	388,032.00	408,889.00	1927	6
2009	Kakuzi Ltd	390,295.00	618,438.00	2,873,255.00	-	304,131.00	1927	6
2010	Kakuzi Ltd	385,379.00	795,570.00	3,218,591.00	-	383,679.00	1927	6
2011	Kakuzi Ltd	648,397.00	1,174,645.00	3,817,320.00	-	351,157.00	1927	6
2012	Kakuzi Ltd	408,656.00	1,237,473.00	3,571,700.00	-	146,023.00	1927	8
2007	Kapchorua Tea Co. Ltd	(928.00)	258,390.00	1,109,894.00	6,750.00	128,725.00	1948	5
2008	Kapchorua Tea Co. Ltd	(69,778.00)	208,461.00	982,058.00	11,146.00	117,585.00	1948	6
2009	Kapchorua Tea Co. Ltd	69,908.00	347,641.00	1,167,797.00	28,711.00	206,571.00	1948	6
2010	Kapchorua Tea Co. Ltd	139,252.00	678,761.00	1,498,931.00	1,935.00	413,617.00	1948	6
2011	Kapchorua Tea Co. Ltd	187,005.00	575,942.00	1,570,203.00	988.00	274,093.00	1948	6
2012	Kapchorua Tea Co. Ltd	77,968.00	752,190.00	1,962,897.00	-	456,895.00	1948	6
2007	Limuru Tea Co. Ltd	1,402.00	30,737.00	57,421.00	-	5,494.00	1925	2
2008	Limuru Tea Co. Ltd	8,466.00	40,532.00	57,775.00	-	10,259.00	1925	2
2009	Limuru Tea Co. Ltd	26,969.00	65,751.00	84,794.00	-	17,138.00	1925	3
2010	Limuru Tea Co. Ltd	74,840.00	89,227.00	158,305.00	-	11,196.00	1925	3
2011	Limuru Tea Co. Ltd	40,484.00	100,340.00	191,242.00	-	5,487.00	1925	3

2012	Limuru Tea Co. Ltd	101,834.00	130,762.00	320,023.00	-	10,537.00	1925	3
2007	Rea Vipingo Plantations Ltd	115,302.00	472,678.00	1,166,585.00	206,484.00	297,394.00	1995	5
2008	Rea Vipingo Plantations Ltd	168,153.00	791,353.00	1,631,964.00	448,786.00	554,440.00	1995	5
2009	Rea Vipingo Plantations Ltd	148,949.00	502,524.00	1,414,084.00	131,748.00	224,412.00	1995	5
2010	Rea Vipingo Plantations Ltd	67,355.00	586,491.00	1,707,016.00	296,960.00	436,849.00	1995	5
2011	Rea Vipingo Plantations Ltd	467,196.00	894,146.00	2,288,740.00	275,661.00	425,236.00	1995	5
2012	Rea Vipingo Plantations Ltd	380,433.00	879,556.00	2,376,618.00	151,103.00	257,984.00	1995	5
2007	Sasini Ltd	(40,752.00)	526,609.00	3,825,044.00	11,019.00	259,979.00	1952	9
2008	Sasini Ltd	875,663.00	971,798.00	6,796,306.00	607,785.00	361,223.00	1952	9
2009	Sasini Ltd	533,032.00	1,041,011.00	7,998,233.00	604,550.00	406,161.00	1952	9
2010	Sasini Ltd	993,729.00	1,227,656.00	9,099,464.00	540,000.00	519,045.00	1952	9
2011	Sasini Ltd	450,347.00	1,243,233.00	9,462,027.00	188,519.00	583,435.00	1952	9
2012	Sasini Ltd	(124,113.00)	1,109,871.00	8,922,980.00	55,703.00	585,628.00	1952	9
2007	Williamson Tea Kenya Ltd	142,834.00	774,134.00	3,754,849.00	41,163.00	324,764.00	1952	6
2008	Williamson Tea Kenya Ltd	(97,517.00)	602,701.00	3,580,325.00	58,348.00	276,030.00	1952	7
2009	Williamson Tea Kenya Ltd	109,870.00	915,042.00	3,921,165.00	87,268.00	801,609.00	1952	7
2010	Williamson Tea Kenya Ltd	876,055.00	1,929,587.00	5,328,706.00	29,962.00	948,494.00	1952	7
2011	Williamson Tea Kenya Ltd	884,385.00	2,326,779.00	6,032,743.00	14,618.00	687,396.00	1952	7
2012	Williamson Tea Kenya Ltd	854,740.00	2,447,223.00	7,243,227.00	59,715.00	1,017,203.00	1952	7

Appendix 3: Data for the Variables

No	COMPANY	YEAR	ROA	FIRM SIZE	LEVERAGE	FIRM AGE	LIQUIDITY	BOARD SIZE
		Ti	Net Income/ T.Assets	Natural log of T.Assets	T. Debt/ T.Assets	Year Incorp. (minus) Ti	T. Current Assets/T. Current Liabilities	No. of Directors
			Y	X1	X2	X3	X4	X5
1	KAKUZI	2007	0.0807	21.5877	0.1666	80	0.7845	6
2	KAKUZI	2008	0.1063	21.7025	0.1457	81	1.0745	6
3	KAKUZI	2009	0.1358	21.7787	0.0000	82	2.0335	6
4	KAKUZI	2010	0.1197	21.8922	0.0000	83	2.0735	6
5	KAKUZI	2011	0.1699	22.0628	0.0000	84	3.3451	6
6	KAKUZI	2012	0.1144	21.9963	0.0000	85	8.4745	8
7	KAPCHORUA	2007	-0.0008	20.8275	0.0061	59	2.0073	5
8	KAPCHORUA	2008	-0.0711	20.7052	0.0113	60	1.7729	6
9	KAPCHORUA	2009	0.0599	20.8784	0.0246	61	1.6829	6
10	KAPCHORUA	2010	0.0929	21.1280	0.0013	62	1.6410	6
11	KAPCHORUA	2011	0.1191	21.1745	0.0006	63	2.1013	6
12	KAPCHORUA	2012	0.0397	21.3977	0.0000	64	1.6463	6
13	LIMURU	2007	0.0244	17.8659	0.0000	82	5.5946	2
14	LIMURU	2008	0.1465	17.8721	0.0000	83	3.9509	2
15	LIMURU	2009	0.3181	18.2557	0.0000	84	3.8366	3
16	LIMURU	2010	0.4728	18.8800	0.0000	85	7.9695	3
17	LIMURU	2011	0.2117	19.0691	0.0000	86	18.2869	3
18	LIMURU	2012	0.3182	19.5839	0.0000	87	12.4098	3
19	REA VIPINGO	2007	0.0988	20.8773	0.1770	12	1.5894	5
20	REA VIPINGO	2008	0.1030	21.2131	0.2750	13	1.4273	5
21	REA VIPINGO	2009	0.1053	21.0697	0.0932	14	2.2393	5
22	REA VIPINGO	2010	0.0395	21.2580	0.1740	15	1.3425	5
23	REA VIPINGO	2011	0.2041	21.5513	0.1204	16	2.1027	5
24	REA VIPINGO	2012	0.1601	21.5889	0.0636	17	3.4093	5
25	SASINI	2007	-0.0107	22.0648	0.0029	55	2.0256	9
26	SASINI	2008	0.1288	22.6396	0.0894	56	2.6903	9
27	SASINI	2009	0.0666	22.8025	0.0756	57	2.5631	9
28	SASINI	2010	0.1092	22.9315	0.0593	58	2.3652	9
29	SASINI	2011	0.0476	22.9706	0.0199	59	2.1309	9
30	SASINI	2012	-0.0139	22.9119	0.0062	60	1.8952	9
31	WILLIAMSON TEA	2007	0.0380	22.0463	0.0110	55	2.3837	6
32	WILLIAMSON TEA	2008	-0.0272	21.9987	0.0163	56	2.1835	7

33	WILLIAMSON TEA	2009	0.0280	22.0897	0.0223	57	1.1415	7
34	WILLIAMSON TEA	2010	0.1644	22.3964	0.0056	58	2.0344	7
35	WILLIAMSON TEA	2011	0.1466	22.5205	0.0024	59	3.3849	7
36	WILLIAMSON TEA	2012	0.1180	22.7033	0.0082	60	2.4058	7