FINANCIAL LEVERAGE AND FINANCIAL PERFORMANCE OF AGRICULTURAL CO-OPERATIVE SOCIETIES IN KIAMBU COUNTY, KENYA

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DECLARATION

This thesis is my original work and has not been previously published or submitted elsewhere for the award of a degree. No part of this thesis may be reproduced without prior authority of the author and/or Kenyatta University.

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DEDICATION

I dedicate this thesis to my parents Mr. Evans Omondi and Mrs. Risper Omondi for laying a solid foundation on which ‘I have walked’ my academic journey.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

OPERATIONAL DEFINATION OF TERMS

Agricultural Co-operative Society	A farmer owned co-operative whose main functions are to collect, process, store and market members' produce.
Asset Coverage Ratio	A financial leverage ratio that indicates a firm's capability to settle debt obligations using proceeds from assets disposed.
Capitalization Mix	A proxy for the financial leverage indicators that measure debt against the co-operative society's shareholders' equity.
Co-operative Society	A democratic member owned economic enterprise made of individuals who voluntarily pool their resources and carry on business for their own welfare.
Corporate Governance	Internal processes or systems by which a firm sets objectives and monitors performance so as to secure stakeholders' interest.
Debt Equity Ratio	A financial leverage ratio that compares a firm's total debt to the total equity invested by shareholders.
Degree of Asset Coverage	Proxy for financial leverage indicators that measure the total debt of a co-operative society against its total assets.
Degree of Fixed Charge Coverage	Proxy for financial leverage indicators that measure the ability of a co-operative society to pay from its earnings the

	interest expense on outstanding debt.
Economic Value Added	A financial performance indicator that measures the value created in excess of the required return of the firm's shareholders.
Financial Leverage	The extent to which a firm uses debt to finance its business.
Financial Performance	A firm’s overall financial well-being that indicates the extent to which it utilizes its resources to create revenue and value for its owners.
Interest Coverage Ratio	A financial leverage ratio that indicates a firm’s ability to pay from its earnings the interest expense on the outstanding debt.
Registered Co-operative	A co-operative society that is formally enlisted and recognized by the State Department of Co-operatives.

ABBREVIATIONS AND ACRONYMS

ACR	Asset Coverage Ratio
BD	Board Diversity
BOD	Board of Directors
BOM	Board of Management
BS	Board Size
CAK	Co-operative Association of Kenya
CEO	Chief Executive Officer
CM	Capitalization Mix
CLRM	Classical Linear Regression Model
DAC	Degree of Asset Coverage
DER	Debt Equity Ratio
DFC	Degree of Fixed Charge Coverage
EBIT	Earnings before Interest and Tax
EVA	Economic Value Added
FGLS	Feasible Generalised Least Squares
FMCG	Fast Moving Consumer Goods
GDP	Gross Domestic Product

ICA	International Co-operative Alliance
ICR	Interest Coverage Ratio
MM	Modigliani and Miller
NACOSTI	National Commission for Science Technology and Innovation
QR	Quick Ratio
ROE	Return on Equity
SACCOs	Savings and Credit Co-operative Societies
SASRA	Sacco Societies Regulatory Authority
VIF	Variance Inflation Factor
WACC	Weighted Average Cost of Capital

ABSTRACT

Financial leverage decisions are critical since they significantly explain firm financial performance. There is lack of consensus (from empirical literature) in respect to the nature and strength of relationship between firm financial leverage and financial performance. Moreover, the impact of financial leverage on different measures of financial performance is varied. Most agricultural co-operative societies in Kenya have not achieved their potential due to poor financial performance. In Kiambu County, the poor performance has in some instances led to farmers abandoning their trade all together and instead converting their land into real estate projects. Hence, this study assessed the effect of financial leverage on financial performance of agricultural co-operative societies in Kiambu County, Kenya. Specific objectives of the study were: to determine the effect of capitalization mix, degree of interest coverage and degree of asset coverage on financial performance. Additionally, the study evaluated the moderating effect of corporate governance on the relationship between financial leverage and financial performance. The study is anchored on agency, pecking order and trade off theories. Positivism research philosophy and explanatory research design were adopted. The study adopted a census of 25 active registered agricultural co-operative societies in Kiambu County. Secondary data was extracted from the annual reports and audited financial statements; Data was obtained from the Directorate of Co-operatives office in Kiambu for the period 2013-2017. Data was analyzed using panel regression analysis, Pearson simple correlation and Descriptive statistics; data was presented in tables and figures. Diagnostic tests performed include: Normality, Multicollinearity, Autocorrelation, Heteroscedasticity, Stationarity and Test for fixed or random effects. The study found that degree of interest coverage has a significant positive effect on financial performance; ($\beta = 2.01937$; $P = 0.015$). Degree of asset coverage also had a positive but insignificant effect on financial performance ($\beta = 1.174203$; $P = 0.063$). The relationship between capitalization mix and financial performance was negative and significant; ($\beta = -0.2589299$; $P = 0.040$). Additionally, the study found that the relationship between financial leverage and financial performance was significantly moderated by corporate governance factors; ($\beta = 0.9821695$; $P = 0.000$). Hence, the study recommends that managers of Agricultural Co-operative Societies in Kiambu County, Kenya should formulate optimum debt-equity mix strategies as well as avoid over-reliance on debt since increase in the proportion of debt may increase financial risk leading to poor financial performance. Further, the study recommends that co-operative societies should consider cheaper sources of finance that do not deplete the firms' earnings. Finally, the study recommends the consideration of corporate governance factors (Annual General Meetings and Internal Audit Committees) by Agricultural Co-operative societies to oversight financial reporting processes, internal controls and conformity with stipulated regulations in order to enhance financial performance.

CHAPTER ONE

INTRODUCTION

1.1Background to the Study

The performance of Agricultural Co-operative Societies (ACs) in any country is of strategic importance in enhancing productivity of smallholder farmers (Okundi, 2011). The liberalization of the co-operative sector in the 1990's was based on the claim that government control was suppressing the performance of co-operative societies and that their probable benefits to development could be achieved only if they were run according to market principles (Wanyama, 2009). However with the liberalized market where subsidized financing is not available and monopolies have been removed, co-operative societies are faced with competition which make their ability to mobilize investment capital a major hurdle and hence affecting their performance (Wanyama, 2009). Other challenges faced by co-operative societies in recent times that have affected their performance include corruption, poor financial management, lack of managerial skills, limited access to finance and low stakeholder involvement (Kasungwa & Moronge, 2016).

In Kenya today the cooperative movement controls about 43% of the gross domestic product (GDP), which is the highest percentage attributed to cooperatives in the world. (Republic of Kenya, 2015). However, according to a survey conducted by the Ministry of Cooperative Development and Marketing, out of a sample of 220 co-operatives, only 3.63% were considered to be sustainable (Republic of Kenya, 2007). While 51% of the

co-operatives are Savings and Credit Co-operative Societies (SACCOs), Agricultural co-operative societies follow at 31% (Kenya Economic Survey, 2017). It is noteworthy that the success of small scale production in agriculture relies on the efficient management of co-operatives (Nyoro, 2002). In the mid-seventies, marked expansion was registered among the agricultural co-operatives such that their contribution to GDP was 45%. Agricultural co-operative Societies in Kenya formally handled sales as follows; coffee at over 72%, dairy produce at 76%, pyrethrum at 90% and cotton at 95%. However, in the recent past, the market share of agricultural co-operative societies has dropped to below 40 per cent (Wanyama, 2009).

Agricultural co-operatives play the crucial role of providing agricultural credit to farmers, providing agricultural inputs, implements and machinery as well as marketing of agricultural produce (Kumar, Wankhede & Gena 2015) . Despite the fact that profit maximization is not the Agricultural Co-operative Societies principal objective, it is important that they are competitive so that they can be sustained within markets where potency of competition is constantly on the rise (Notta & Vlachvei, 2007). These member-driven organizations with no market for shares and whose main source of funds is member equity, continue to face stiff competition from powerful competitors (Wanyama, 2009). Agricultural cooperatives have also ventured into value addition which has propelled a number of them into manufacturing and hence the ability of members to meet the additional capital demand decreases.

In furtherance of survival in this progressively competitive environment, most agricultural co-operatives have reconsidered their member control principle and acquired

more external funding to compensate member equity and achieve higher growth (Luangsangthong & Zhang, 2013). To this end, the co-operative societies procure loans from financiers like the Co-operative bank of Kenya and the Agricultural Finance Corporation. However, this new development has come with new challenges among them poor financial management. The Komothai Coffee Growers Co-operative Society in Githunguri, Kiambu County is among the agricultural co-operative societies whose operations have been threatened recently due to indebtedness (Wainaina, 2018). In 2017 the President of Kenya waived debts of up to 1.5 billion Kenya shillings owed to the Agricultural Finance Corporation by Agricultural Co-operatives (Kimanthi, 2017).

Financing decisions are very important since many factors contributing to the failure of corporates can be tackled by financial strategies and resolutions that propel growth and attainment of organizational objectives. In the view of Raza (2013), among the critical decisions of a finance manager is to enhance the wealth of shareholders and lessen the cost of capital by effecting the tool of capital structure management. Chadha and Sharma (2015) emphasize the need for a financial manager to scrutinize the gains and losses of the varied sources of funds prior to settling on the best alternative, considering the optimal capital mix, which reduces the cost of capital. A firm may use owner's funds or borrowed funds to finance their chosen decision. Since neither the borrowing nor the owner's funds is costless, proper management of these sources of capital is vital if a firm is to attain optimal financial performance. The key intent of this study was to evaluate the effect of financial leverage on financial performance of agricultural co-operatives. The study also assessed the moderating effect of corporate governance in the relationship between financial leverage and financial performance.

1.1.1 Financial Leverage

Gweyi and Karanja (2014) define financial leverage as the use of fixed charged funds in the capital structure of a firm. It is the extent of the use of fixed income securities such as debt by a firm and illustrates the capacity of a firm to utilize fixed cost funds to increase the return to its shareholders. Due to the effects that different sources of capital could have on the performance of Agricultural cooperative societies, the quality of the source of capital need to be put into consideration. To this end, forms of capital that are attached with conditions and terms that demand strong member commitment such as debt capital are perceived as high quality capital (Luangsangthong & Zhang, 2013). Debt financing encompasses the acquisition of instruments for which interest is paid and are guaranteed by term structures, either long or short term and asset based collateral (Githaiga, 2015). Therefore, as debt increases, financial leverage increases. Additionally, the interest payments associated with debt negatively affects earning per share. Unlike the rate of return, the firm's rate of interest is fixed. This in return increases the risk to the shareholders. On the whole, much consideration has to be made so that the increase of debt also increases the value of the firm.

According to Enekwe, Agu, and Nnagbogu (2014), the part of financial leverage in boosting the wealth of shareholders is anchored on the supposition that fixed charges funds like loans can be acquired at a cost below the rate of return on assets of the firm. It is generally argued that proper utilization of financial leverage results to an increase in return on equity and earnings per share because there is no dilution of the owners' earnings like in the case of equity financing (Nagalakshmi, 2015). Additionally, the

higher the cost of capital of a firm, the lower the Economic Value Added. Further, the requirement to raise sufficient cash for loan and interest repayment imposes some financial management discipline which is a positive incentive; hence financial leverage by its very own nature can be an effective tool for internal governance leading to good firm performance, as it disciplines managers to avoid wastage of finances (Roy, 2016).

In the view of Nazir, Saita, Ahmed and Nawaz (2012), negative incentives associated with financial leverage include conflicts between shareholders and debt holders. Project selection may also be affected due to managerial risk aversion whereby managers may avoid high risk projects for lower risk projects with potentially lower net present value. In addition, too much financial leverage can lead to the risk of default and even bankruptcy. Leverage also comes with potential increased financial distress cost and increased earnings variability. Chui, Lloyd and Kwok (2002) state that financial leverage enables investors better returns than would otherwise have been available but the probable loss is also greater because the loan principal plus the interest accruing on it must be paid even though the investment become valueless. It is therefore important to study the effect of the introduction of fixed interest-bearing funds on the financial performance of agricultural co-operatives.

The various stakeholders within a co-operative society have contradicting interests. Two parties will be most interested in the co-operative's performance due to leverage; shareholders who bear the greatest risk in the firm because they have the last claim to firm's assets and are compensated by the increase in value of their share equity through dividends, and creditors who rely on the firm's assets as collateral and are compensated

through interest payment (Ali, 2013). Financial leverage ratios enable interested parties to form judgment about the degree of financial risk inherent in the firm. The ratios measure the general indebtedness of a firm in comparison to the equity or assets of the firm (Sathyamoorthi, Mbekomize, Radikoko, & Wally-Dima, 2016). There are various financial leverage ratios hence the most applicable measure will depend on the objective of the analysis.

The debt equity ratio (DER), an indicator of capitalization mix in this study, represents the relative proportion of a co-operative society's equity and debt used to finance its assets. It measures a co-operative society's ability to pay its obligations and is important in knowing whether it has over borrowed or not. Risk averse managers may avoid making decisions like increasing leverage to optimal level, though such a decision may be beneficial to the shareholders. According to Rabirou, Olusayo, and Okparaocha (2013), a maximum safe DER is 50%, meaning that a half of the co-operative society's assets are being outwardly financed. Thus, a high ratio means that the co-operative society is financed more by debt holders than its financial sources; hence the firm may not attract additional lending. Agha and Mahmoud (2011), observe that averagely, firms use a leverage level lesser than that which is predicted by theory. Indeed, lenders prefer a low debt to equity ratio since their pursuits are safeguarded. However, a very low debt to equity ratio may be an indication of a very conservative approach towards the management of a firm's assets (University of Wisconsin, 2015).

The interest coverage ratio (ICR) determines the potential of a firm to settle interest payments on its overdue debt. It is an indicator of the degree of fixed charge coverage

and measures the times a co-operative society can pay interest on debt by utilizing Earnings before Interest and Taxes (EBIT). Subramanyam and Wild (2009) assert that with the repayment of debt, the measures of capital structure ordinarily improve while annual cash requirements for interest payments either increase or remain fixed. Besides, earnings tend to fluctuate with the differing market conditions. Subsequently, this reinforces the importance of safer earnings, ideally higher than the interest expense annually. It is important for agricultural co-operatives to have sufficient earnings to settle the interest expense. To this end, the safe amount is hinged mainly on earnings stability and the cyclical characteristic of the business sector (Sathyamoorthi *et al*., 2016). A low ICR signifies that less earnings are available for interest payments and that the co-operative society is more susceptible to raise its interest rates. The lower the ICR, the higher the firm's debt and the likelihood of default and bankruptcy. Conversely, a very high ICR may mean that a co-operative society is disregarding avenues to maximize earnings through leverage. A ICR less than 1.0 indicates that the co-operative society is not generating enough earnings to pay its interest obligations (Camilleri & Camilleri, 2017).

The degree of asset coverage is measured by the Asset Coverage Ratio (ACR). A coverage ratio is a measure of a firm's capacity to meet certain obligations and asses the long term solvency of the firm (Paitandi, 2014). The Asset Coverage Ratio (ACR) measures the ability of a firm to pay for its debt obligations using its assets. The ratio ascertains the assets of a co-operative society that will be required to pay for its overdue debts. Thus, ACR shows the financial position of a co-operative society by measuring its monetary and tangible assets versus its financial obligations (Ready Ratios, 2018).

Consequently, the ACR assists investors in forecasting future earnings of the co-operative society and assessing the risk of insolvency. As a rule of thumb, publicly limited companies and industrial firms should maintain an ACR of 2 while service firms should maintain an ACR of 1.5 (Ready Ratios, 2018).

1.1.2 Corporate Governance

Corporate governance touches on the internal ways through which the organizations objectives are set and monitoring performance attained (Organization for Economic Co-operation and Development, 1999). It articulates the rights and responsibilities of the various stakeholders in the organization; it's relationship to its immediate stakeholders like employees and members and the society at large. Qamar, Farooq, Afzal and Akhtar (2016) opine that the study of the direct leverage performance relationship may not be totally useful because the relationship depends on other moderating factors. To this end, this study will incorporate corporate governance as a moderating variable. According to Okiro, Aduda and Omoro (2015), effective corporate governance can result to the betterment of the accountability system which further translates to minimal risk of fraud or self-dealing by firm's officers. It also assures conformity with relevant laws and regulations hence the avoidance of litigation which can be very costly. Improvement of a firm's corporate governance can further boost the confidence of investors and heighten its capital access hence strengthening the foundation for firm performance (Ehikioya, 2009).

In its quest to improve governance standards, the Organization for Economic Co-operation and Development (OECD) in 2002 published amended policies which have since become an international corporate governance benchmark worldwide. Besides

providing precise legislative and regulatory direction, these policies have greatly fostered the corporate governance agenda (OECD, 1999). Transparency and disclosure is the fifth OECD principle on corporate governance. Under this principle, correct and prompt disclosure should be made on every substantial matter like the financial status, ownership, performance and governance of a firm.

Financial transparency refers to the authenticity, timeliness and meaningfulness of financial disclosures, their interpretation and circulation whereas governance transparency alludes to the potency of governance disclosures used to ensure the accountability of directors and managers. Bhasin (2009) opines that an essential pillar of good corporate governance is transparency which includes the establishment of checks and balances among the management, directors, auditors and other stakeholders. Disclosure comprises all forms of voluntary corporate communications like the Annual General Meeting (Healy & Palepu, 2001).

Properly governed co-operative societies are in a better position to fulfill their social and economic responsibilities which contribute to sustainable growth (International Finance Corporation, United States, & Department of Commerce, 2004). Like their corporate counterparts' co-operative societies have to embrace good governance as an indicator that they are committed to firm performance. The challenge is to identify a balance that is applicable to the fundamentals of good governance and the distinctive traits of the co-operative model (Ernst & Young, 2012). Banco Central Do Brasil (2008) define co-operative corporate governance as internal and external means and regulations that give

members the capacity to determine and safeguard achievement of co-operative objectives and principles as well as secure their continuity.

Several events are responsible for the heightened regard for corporate governance. For instance, the collapsing of prominent firms like J. P Morgan and Lehman Brothers, led to queries on the suitability of the corporate governance practices in developed countries (Mazudmer, 2013). Correspondingly, similar to other private sector enterprises, co-operative societies, have not been left unscathed by the recent corporate governance scandals. There has also emerged the development of codes of good practice hence the advancement of governance practices for co-operative societies has become significant and is progressively discussed (Shaw, 2006). A case in point is the evolution of a corporate governance code in the United Kingdom which was elicited by governance scandals and the realization that the co-operative sector was required to adopt innovative practices in corporate governance (Co-operatives UK, 2005).

Like in many developing countries, the corporate governance framework in Kenya has continued to weaken (Mang'unyi, 2011). According to Shaw (2006), corruption and mismanagement are very common among Kenyan co-operative societies with some reporting illicit payments and theft whereas others failed to hold elections and AGMs. The study also displays agency conflict between members and boards as an attribute of Kenya's co-operative sector. As a result of poor corporate governance, Kenya's large co-operatives such as the Kenya Co-operative Creameries and the Kenya Planters Co-operative Union have collapsed in the past (Wanyama, 2009).

The code of corporate governance in Kenya provides that Annual General Meetings (AGMs) should be held in accordance with the statutes so that the board can obtain consensus to all decisions and documentation from the shareholders. Therefore, boards of Agricultural co-operative societies are expected to ensure that the AGMs are held every year. Additionally, according to the code of corporate governance in Kenya, the Board should establish an independent Audit Committee to regularly assess the scope and outcomes of audit, its effectiveness and the independence and objectivity of the auditors.

1.1.3 Financial Performance

Financial performance has been defined as a measure of how effectively an entity uses assets from its core business activities to generate revenue (Venkatesh, 2013). A firm's performance evaluation is important in ascertaining its viability. Okiro *et al*., (2015) opine that in order to evaluate performance, the determination of the constituents of good performance using performance indicators is necessary. They emphasize the necessity of the performance indicator to be measurable, relevant and important to the organization. Empirically the focus on firm performance measurement has majorly been on financial performance (Hutten, 2014; Ilyukhin, 2015; Singh & Bansal, 2016).

The financial performance of any firm is of vital importance to individuals and different groups. Whereas short term creditors' interest is on the firm's current performance and its holdings of liquid assets, long term creditors and shareholders are concerned with both the short term and long-term outlook (Sharifi, 2013). Management contrarily is concerned with good performance as it reflects their efficiency and effectiveness in making use of the firm's resources. Financial ratios are a traditional yet powerful tool that

researchers and decision makers use to evaluate firm performance. The ratios asses a firm's capacity to generate earnings and cash flows in relation to some metric, in most instances the amount of money invested (Dilipkumar, 2014). A key advantage of financial measures is the ease of calculation. Their definitions are also agreeable worldwide (Shamsuddin, 2015). Apart from ratios being unanimously accepted method for financial statement analysis they are also useful for inter-organization and intra-organization comparison (Paitandi, 2014).

Paitandi (2014) classifies ratios into six broad categories namely; Profitability, Liquidity, Solvency, Coverage, Productivity and Operational efficiency ratios. According to Shamsuddin (2015), profitability ratios are the most important and reliable indicators to measure the financial performance of a firm. Notwithstanding that maximization of profit is not the co-operatives' main goal, there is need for co-operatives to operate profitably. Commonly used profitability measures include the return on assets and return on equity; however differences between co-operatives and other firms like companies mean that some standard financial ratios may not be appropriate for Co-operatives (Simkhada, 2017). This study adopted the economic value added (EVA) as the measure for financial performance.

Liebenberg (2006) indicates that economic value added (EVA) is a value-based performance measure that stipulates the absolute amount of shareholder value generated. The researcher further outlines the basic inputs for EVA calculation as the return on capital earned on investment, the cost of capital of the investments and the capital invested in them. Thus, EVA is the net operating profit after tax, minus an appropriate

charge for the opportunity cost of capital invested in the firm. Unlike other performance measures, it includes a charge against profit for the cost of all the capital. Stewart (1990) describes EVA as an estimate of true economic profit, or an amount by which earnings exceeds or falls short of the cost of capital used to produce profits in a given period. According to Ehrbar (1998), EVA is a framework for complete financial management and an incentive compensation system, which guides the firm's decision-makers.

Shareholders are interested to know whether a firm is producing value for them i.e. if management performance has led to growth in the value of their investments or not. In making a case for EVA, Hall and Geyser (2004) indicate that it exhaustively accounts for the resources utilized by co-operative societies and incorporates realized as well as unrealized capital gains. Further, EVA as an investment decision tool gives supplemental information about profitability and wealth creation relative to other ratios. Since the creation of shareholder value is the ultimate economic purpose of most organizations, EVA stands out as a superior financial performance measure.

1.1.4 Agricultural Co-operative Societies in Kiambu County, Kenya

A co-operative society is a self-governing association of persons unified willingly to achieve their common economic, cultural and social aspirations through a jointly owned and democratically-controlled enterprise (International Co-operative Alliance, 2018).The Kenyan cooperative movement was initiated by individual European settler farmers during the colonial days. In 1970 the government of Kenya officially acknowledged the important role of cooperatives and formed the Ministry of Cooperative development to

identify areas of cooperatives expansion for adequate economic development of the country(Ebert, 2012).

Today the state department of co-operatives is housed under the larger Ministry of Industry, trade and co-operatives whose main roles are registration and inspection of co-operatives. The Co-operative Alliance of Kenya (CAK), the apex body that was formed in 2009, plays the role of lobbying and advocating for a conducive legal and policy environment, as well as representation**,** collaboration and the furtherance of growth and development of the Co-operative Movement (Co-operative Alliance of Kenya Limited, 2018). In Kenya, Cooperative societies are registered under the co-operative societies act cap 490. The constitution of Kenya 2010 devolved various aspects of co-operatives to the county governments (State Department of Co-operatives, 2017).

Cooperatives can be classified as agricultural, non-agricultural, Unions or Savings and Credit Co-operative Societies (SACCOs). According to the CAK, its membership averages 20,000 registered Co-operative Societies consisting of over 8.9 million people. The organization further, estimates that the movement impacts 32 million Kenyans and has an annual turnover of approximately Kshs. 436 billion which is equivalent to 45% of the national GDP (Co-operative Alliance of Kenya Limited, 2018). The cooperative sector in Kenya was ranked seventh worldwide and first in Africa in 2007 in terms of number, size and contribution to development (International Co-operative Alliance, 2018).

The County Government of Kiambu comprises 12 sub-counties namely; Lari, Limuru, Kikuyu, Kabete, Kiambaa, Kiambu, Gatundu North, Gatundu South, Githunguri, Juja,

Thika and Ruiru. According to Kiambu County's 2013-2017 strategic plan, agriculture is its predominant economic activity involving directly or indirectly over 80% of the population hence making it a key sector in respect to income generation, employment and general contribution to the socio-economic well-being of the population. The key objective of Agricultural co-operative societies is to promote the general welfare and the economic interests of members in accordance with cooperative values and principles (Cheruiyot, Kimeli, & Ogendo, 2012).

James and Madaki (2014) opine that among farmers, the co-operative movements are viewed to be influential to Agricultural transformation as well as enhancing productivity in the sector. Agriculture is the bedrock of Kiambu's economy and as such the co-operative movement has a solid footprint on it. Kiambu has over 400 registered co-operatives with approximately 440,161 registered members. Of these 25 are active agricultural co-operatives dealing majorly in dairy and coffee (County Government of Kiambu, 2017). At the close of the year 2017, the co-operative sector in Kiambu had 500 active co-operative societies with 508,019 members, 3,223 permanent employees, share capital of 3,419,208,178 shillings and a turnover of 14,184,792,208 shillings (County Government of Kiambu, 2018). During the same period, the coffee co-operatives in the county had a membership of 58,621 and a turnover of 698,661,436 Kenya Shillings. The Dairy co-operative societies on the other hand had a membership of 65,487 and a turnover of 9,304,746,246 Kenya shillings.

1.2 Statement of the Problem

Co-operative societies in Kenya are recognized as a significant contributor to national development since their presence can be traced in virtually all sectors of the economy. According to Kasungwa and Moronge (2016), 80% of the Kenyan population draw their income from co-operative societies. Most Kenyans depend on agricultural production for their livelihoods and co-operatives are a major vehicle that drives growth of the sector. Roep (2017) documents that 40% of Kenya's agricultural sector sales are accounted for by Co-operatives Societies. Given their dominant charge of contributing to smallholder agricultural production, agricultural co-operatives are key in the achievement of the government's development goals. The ability of cooperatives to effectively achieve the expectations of their stakeholders and the country's development goals is however hindered by among other things, poor financial management (Baka, 2013). Leverage has been linked to performance of co-operatives in view of empirical evidence. This remains an issue of empirical investigation in Kenya, especially in the context of Agricultural Co-operative Societies.

Although significant progress has been made by the agricultural co-operatives in Kenya, their performance and sustainability has been debatable (Kasungwa, & Moronge, 2016). The meagre returns from cash crop farming has propelled farmers to the allure of real estate, posing a threat to food security (Kenya Economic Survey, 2017). In Kiambu County, Kikuyu Location Farmers co-operatives, Kamahia dairy, Nderi Farmers, Komothai Dairy and Lari Pyrethrum Co-operative Society have recently become dormant mainly due to indebtedness, mismanagement and the competitive business environment (County Government of Kiambu, 2017). Among the coffee co-operatives in Kiambu

county, the gross sales in 2017 reduced to 667,889,159 shillings from 732,761,561 shillings in 2016. Their Dairy counterparts on the other hand experienced a minimal growth in gross sales, from 5,099,362,852 shillings in 2016 to 5,152,757,909 shillings in 2017. The turnover for Pyrethrum co-operative societies declined from 15,299,696 shillings in 2016 to 9,829,676 shillings in 2017. During the same period, the average rate of payment to the members of the co-operative societies per kilogram of coffee increased from 43 to 51 shillings, whereas the average rate of payment per litre of milk decreased from 38 to 36 shillings (County Government of Kiambu, 2018). Considering that such performance has been attributed to financial leverage elsewhere, yet there is little evidence on the extent to which financial leverage affects financial performance of Agricultural co-operatives in Kiambu County, this erratic performance pattern calls for empirical investigation.

While there is strong empirical evidence that financial leverage affects financial performance, empirical evidence has not provided the much-needed support in this regard especially for co-operative societies. Studies on financial leverage and financial performance have focused on listed companies(Chesang & Ayuma, 2016; Enekwe, Agu, & Eziedo, 2014; Maghanga & Kalio, 2014; Okoro, 2014). In the case of co-operative societies, Savings and Credit Co-operative Societies have received most attention (Gweyi & Karanja, 2014; Kirimi, Simiyu, & Dennis, 2017; Otieno, Mugo, Njeje, & Kimathi, 2015). Additionally, the existing studies on the effect of financial leverage on financial performance have yielded varied findings (Chesang & Ayuma, 2016; Gweyi et al., 2014; Maghanga & Kalio, 2014; Singh & Bansal, 2016). Prior studies have focused on the direct financial leverage and firm performance relationship (Hutten, 2014; Mule &

Mukras, 2015; Perinpanathan, 2014; Singh & Bansal, 2016). Hence there was a good basis for testing this relationship in the Kenyan context especially in Kiambu County where there exists little empirical literature if any.

The inconsistencies documented above motivated the present study. Qamar *et al*., (2016) contend that the study of direct leverage-performance relationship may not be entirely helpful since it is dependent on other moderating factors and contingencies such as governance and financial transparency. This study not only assessed the direct effect of financial leverage - financial performance relationship, but also the moderating effect of corporate governance (financial and governance transparency) on the relationship between financial leverage and financial performance of agricultural co-operatives in Kiambu County, Kenya for 5 years ranging from 2013 to 2017. This study improved on conceptualization by adopting a value-based performance measure, the Economic Value Added (EVA), unlike most studies which rely purely on commonly used accounting-based measures like ROE and ROA. Hence the study sought to address the broad question of the effect of financial leverage on financial performance of agricultural co-operatives in Kiambu County.

1.3 Objectives of the Study

1.3.1 General Objectives

The main objective of the study was to assess the effect of financial leverage on financial performance of agricultural co-operatives in Kiambu County, Kenya.

1.3.2 Specific Objectives

The study sought to achieve the following specific objectives-:

i. To determine the effect of capitalization mix on financial performance of agricultural co-operatives in Kiambu County, Kenya.

ii. To evaluate the effect of degree of fixed charge coverage on financial performance of agricultural co-operatives in Kiambu County, Kenya.

iii. To determine the effect of degree of asset coverage on financial performance of agricultural co-operatives in Kiambu County, Kenya.

iv. To establish the moderating effect of corporate governance on the relationship between financial leverage and financial performance of agricultural co-operatives in Kiambu County, Kenya.

1.4 Research Hypotheses

The study tested the following null hypotheses:

H_{01} Capitalization mix has no significant effect on financial performance of agricultural cooperative societies in Kiambu County, Kenya.

H_{02} Degree of fixed charge coverage has no significant effect on financial performance of agricultural cooperative societies in Kiambu County, Kenya.

H_{03} Degree of asset coverage has no significant effect on financial performance of agricultural cooperative societies in Kiambu County, Kenya.

H_{04} Corporate governance has no significant moderating effect on the relationship between financial leverage and financial performance of agricultural cooperatives in Kiambu County, Kenya.

1.5 Significance of Study

This study sought to contribute to empirical and theoretical literature on the financial leverage component of the all-important subject of capital structure and financial performance, while factoring in corporate governance indicators. It has contributed to the understanding of financial leverage and provided comprehensive up to date evidence of financial performance across Kiambu's agricultural cooperatives. The study will enable academicians and researchers in future to identify gaps that have not been covered by this study and previous researchers. There is no opportune time than this for this study given that the liberalization of the economy has made agricultural cooperatives in Kenya to operate in a highly competitive environment.

This study is therefore invaluable to the varied stakeholders in the Kenyan economy. Management who are charged with the responsibility of the daily running of the co-operatives and raising capital as well as ensuring an optimal capital structure can benefit from knowing the main components of financial leverage that influence financial performance. They need to know what sources of financing to employ. Policy makers especially from the State department of Co-operatives and especially those from Kiambu County can obtain guidance in designing appropriate practices that would regulate corporate governance in affecting the financial performance of agricultural cooperatives in Kenya. Providers of debt financing are keen on default risk. They need to assess the

funding requests they receive and so they can benefit from knowing the factors that determine the indebtedness and financial performance of the co-operative societies.

1.6 Scope of Study

The study focused on financial leverage and financial performance. To this end, the study covers agricultural co-operatives in Kiambu County, Kenya. This scope excluded other forms of cooperative societies like SACCOs and other forms of businesses like listed companies. It also eliminates agricultural co-operatives in other counties in Kenya. The study further confined itself to a five-year period that is from year 2013 to year 2017. The indicators of financial leverage were further limited to debt equity ratio, interest coverage ratio and asset coverage ratio, whereas the measure of financial performance was limited to Economic Value Added.

1.7 Organization of the Study

This thesis is organized in five chapters. Firstly, chapter one presents the background of the study, the statement of the problem, the objectives of the study, research hypotheses, scope of the study, and significance of the study in that sequence. Chapter two reviews the theoretical and empirical literature on the study topic, identifies the research gaps and presents the conceptual framework. Chapter three describes the research methodology that will be used to achieve the objectives of the study. Chapter four presents the research findings and discussions whereas chapter five contains the summary, conclusions and recommendations. Lastly, the thesis contains references and appendices.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses various scholarly writings on financial leverage, corporate governance and financial performance so that the topic can be understood better. The chapter presents different propositions and theories by scholars through research papers, journals and books as outlined. The empirical studies and summary of knowledge gaps from empirical studies are provided as well as the conceptual framework which displays the relationship between the variables.

2.2 Theoretical Review

This section introduces key theories that have been advanced to explain financial leverage, financial performance and corporate governance. The theories support the research variables.

2.2.1 Agency Theory

Fronted by Jensen and Meckling (1976) the theory is based on the notion that the concerns of shareholders and managers are not perfectly aligned. Agency theory focuses on agency relationships. The two researchers define agency relationship as a contract under which a principal[s]) delegates some decision-making authority to an agent. Owing to the separation of ownership and control, conflict between managers and shareholders emerge as managers are inclined towards maximizing their utility instead of the value of the firm. Subsequently, issuing debt may decrease agency costs and influence firm performance by encouraging or constraining managers to act in the interest of the

shareholders instead of indulging in subjective behavior (Russell, Briggeman, & Featherstone, 2017).

Apart from the managers shareholder conflict, Jensen and Meckling (1976) also identify the conflict between the shareholders and the debt holders. Concerning this second conflict, Chipeta (2012) argues that whenever the returns of an investment are higher than the face value of debt, the shareholders benefit yet in the event that the investment fails, the shareholders can walk away, leaving behind a firm whose outstanding debt is more than its market value. Myers (1984) identifies another potential agency cost of debt that rejection of value increasing projects may be prompted by high debt levels. Myers points out that when a firm is at the point of bankruptcy, shareholders may loose the motivation to invest mainly because the benefits attained from the investments will accrue to the creditors. McColgan (2001) on the hand highlighted the four problematic areas of agency conflicts as moral hazard, managerial aversion, time horizon and earnings retention.

According to Jensen and Meckling (1976), the agency problem results in agency costs which is the aggregate of monitoring costs by the principal, the bonding costs by the agents and the residual costs. Monitoring costs are incurred by the principal to observe and control an agent's behavior and should pose a viable threat to the management's control of the firm (McColgan, 2001). They include costs of preparation of reliable accounting and audit information and writing executive compensation contracts. Bonding costs on the other hand are costs borne by management to assure shareholders that they are acting in their best interest whereas residual loss which includes opportunity costs and inspection costs, refer to the agency losses emerging from these conflicts of interest

(Jerzemowska, 2006).When the marginal increase in bonding costs and the marginal reduction in monitoring are equal, agents stop incurring bonding costs (McColgan, 2001).

Though it is most unlikely that monitoring and bonding will fully align the interests of managers and shareholders, Jerzemowska (2006) suggests the use of managerial incentives and managerial monitoring which link the wealth of shareholders with the wealth of managers as a solution to the agency costs problem. The use of debt lessens the free cash flow hence disciplining the managers to use the firm's resources efficiently and avoid overinvestment (Jensen, 1986). In order to optimize performance, lenders on the other hand incur monitoring costs to make the firms to operate efficiently. Considering that the suppliers of equity, suppliers of debt and firm managers, all try to achieve their goals using different measures, agency theory plays a major role in this study by examining how the management and control of financial leverage and the introduction of corporate governance factors may minimize agency costs and maximize firm value.

2.2.2 Trade-Off Theory

The trade-off theory is owed to Myers (1984). The theory is one of the most prominent leverage theories. The idea behind it is the choice of the amount of equity and debt to use by balancing the costs and benefits. Shahar *et al*. (2015) indicate that trade off theory emphasizes a balance between the tax saving due to debt, decrease in agent costs and bankruptcy and financial distress costs. The researchers further explain that being an old theory that came after the Modigliani and Miller (MM) theory, it fronted modifications to the corrected MM proposition by suggesting that the gains of tax shield are counteracted by the firm's agency cost and costs of financial distress. This means that the optimal level

of leverage can be achieved by balancing the costs of issuing debt and the benefits from interest payments.

According to the corrected MM proposition of 1963 that relaxed the no tax assumption, a tax advantage to debt arises due to the tax deductibility of interest expense. The higher the leverage the higher the interest cost. The product of the tax rate and interest cost is allowed from the required tax payment. This benefit of debt that leads to an optimal capital structure fully financed by debt is called a tax shield (Baxter, 1967; Modigliani, Miller, 1963). The argument of a tax shield creating an optimal capital structure fully financed by debt was later discarded by other researches. Among the arguments against it include the empirical evidence that shows that in practice firms are only levered to a total firm value (Solomon, 1963). Secondly, debt financing is mostly conditional on a certain equity stake in the firm (Kim, 1978) . It was therefore clear at this point that some variables had been left out when allowing for market imperfections.

Debt financing leads to fixed payment claims. Baxter (1967) explains that an important consequence of debt financing and the missing element in the corrected MM framework was the increased risk of bankruptcy. The positive effect from leverage will at a certain point be offset due to increased bankruptcy risk and financial distress. The approach to weigh the costs and benefits of leverage resulted into the tradeoff theory. Persson and Ridderström (2014) explain that a levered firm reaches maximized firm value, at the point at which the marginal earnings from tax shield is offset by the increased cost of financial distress. The researchers however document that the concept of optimal capital structure is theoretical and so a number of assumptions have to be made in reality. As

such, in determining the cost of financial distress, its components like risk of bankruptcy and discount rate are approximated. Miller (1977) explain that due to the real-world complexity, no firm can have the kind of business outlook information that is required for the evidence of the trade-off optimization.

Debt level escalates the risk of bankruptcy since interest payable increases as debt to equity ratio increases. If a firm's debt-equity decision is a trade-off between benefits from tax shield and bankruptcy costs, then an optimal decision would maximize debt tax shields and minimize financial distress costs associated with debt (Çerkezi, 2013). Within this fact, firms seek to reach their optimal capital structure by striking this balance, which minimizes the cost of capital and enhances firm value. The threat of bankruptcy is a notable effect of financial leverage which forces managers to operate in a profitable manner to avoid losing their jobs benefits and litigation by creditors (Jensen, 1986). This theory is thus important to this study since it provides the anchorage for balancing the costs and benefits of equity and debt and the effect of such balancing on economic value addition.

2.2.3 Pecking Order Theory

The theory was advanced by Myers and Majluf (1984). Pecking order theory postulates a hierarchy of financing choices which a firm makes that is influenced by information asymmetry. Pecking order theory insinuates conflict between insider and outsider due to information asymmetry. It contends that managers, whose actions are in favour of existing shareholders, have the advantage of being in possession of more internal

information than prospective investors. Beside information asymmetry, the theory also considers the signaling effect.

Unlike the trade-off theory, pecking order theory does not take optimal capital structure into consideration. It assumes the non-existence of target capital structure by firms. The model postulates that firms decide on capital in accordance with the following order; internal finance, debt, equity (Chen & Chen, 2011). Shahar *et al*. (2015) opine that by financing new investments using the cheapest available resources, firms can maximize their value. They further explain that in the event that internal funds are inadequate, firms may acquire external financing, which is chosen in a manner that minimizes extra costs of information asymmetry. Myers and Majluf (1984) indicate that if a firm uses only its retained earnings to finance investments, the information asymmetric problem can be eliminated. Equity is more expensive to issue since it increases information asymmetry. Shahar *et al.* (2015) advocate that to avoid underpricing securities, firms with large information asymmetry should consider issuing debt. It is worth noting that transaction costs which are incurred to obtain new external financing have a significant part in the capital structure decision. To this end, Myers and Majluf (1984) argue that net benefits from debt financing are most likely to outweigh floatation costs.

As maintained by pecking order theory, firms will consider external financing sources if only information asymmetry is low and internal financing is not adequate to finance additional investments. The theory also assumes that firms have no optimal debt ratio hence the firm's debt ratio is representative of external financing required. Further, according to Mostafa and Boregowda (2014), highly profitable firms issue less debt. This

theory is thus important to this study as it brings to surface the priority given to debt financing by the firms under study and how such priority impacts the absolute amount of shareholder value generated.

2.3 Empirical Review

Several general and empirical literature have explored financial leverage and financial performance from varied perspectives and in different environments. This section analyzes studies on the effect of financial leverage on the financial performance. The section also presents an empirical review on the moderating effect of corporate governance.

2.3.1 Financial Leverage and Performance

Chesang and Ayuma (2016) assesed whether financial leverage has a significant effect on firm's profitability. To this end, using data of listed agricultural firms at the Nairobi Securities Exchange. The study anchored on net income, trade-off, pecking order and agency theories. They concluded that of the four indicators of the independent variable, debt to equity ratio and long-term debt to capital employed had a statically insignificant effect on profitability, whereas current ratio and firm size had a statistically significant effect on profitability. The study used descriptive research design. The study collected time series data and used regression model in establishing the relationship between the variables. However, they focused on listed firms which are in a different context from the co-operative sector; hence the findings are likely to vary.

Using panel data analysis for the period from 2004 to 2009, Raza, (2013) investigated the effect of financial leverage on firm performance and found a negative relationship

between the two variables. They concluded that the negative relation was due to certain direct and indirect costs that make long term debt more expensive hence employing more long-term debt results into low profitability. Their findings adhere to pecking order theory. The study focused on non-financial firms listed at the Karachi Stock Exchange in Pakistan, which has different economic structures from Kenya. It was of necessity to test these findings in Kenya's context.

Singh and Bansal (2016) examined the impact of financial leverage on firm performance and valuation. They analyzed 60 Fast Moving Consumer Goods (FMCG) firms listed on National Stock Exchange and Bombay Stock exchange, over the period from 2007 to 2016 using panel data regression. Tobin's Q and Enterprise Value were used to measure firm value whereas Return on total assets and Economic value added were the profitability measures. The results showed a significant negative impact of leverage on firm value and profitability indicators. This finding contradicts the study by Raza, (2013), which found no significant relationship between the two variables. The inconsistencies in previous studies motivated this study. This research was conducted in India, which has different socio-economic structures from those existing in Kenya and was conducted among listed FMCG firms.

Adopting both the descriptive and analytical approaches, Gweyi and Karanja (2014) investigated the effect of financial leverage on financial performance of Deposit taking savings and credit co-operatives in Kenya. They extracted their sample data through convenience sampling from the 40 Savings and Credit Co-operative Societies (Saccos)

for the period 2010 to 2012. The researchers collected secondary data and used correlation analysis to find out the relationship between the independent and dependent variable. The findings showed a weak positive correlation between debt equity ratio with income growth and return on assets and a perfect positive correlation between debt equity ratio with return on equity and profit after tax at 99% level of confidence. However, the scope was limited to deposit taking Saccos. The study also covered a limited period of 3 years which may not allow meaningful conclusions. Further, this study used Debt to Equity ratio as the only measure of financial leverage.

Limiting their focus to Dairy Co-operative Societies in Kericho County, Machogu and Yegon (2017) explored the effect of economic determinants on performance. The study adopted descriptive research design and analysed data using descriptive statistics. The researchers used both primary and secondary data, and found that the turnover for the co-operatives was at a decline and that performance was affected by economic determinants. They concluded that at 85.7%, capital formation is the dominant determinant of performance. 63.3% of the interviewees confirmed that they raise their co-operative society's capital through bank loans. The researchers recommended that co-operatives should be transformed to the new generation co-operatives which have strategic plans and engage in value addition rather than pursue the traditional model of production and marketing. The study focused only on a section of agricultural co-operatives; dairy co-operatives.

Maghanga and Kalio (2014) used survey research design in their investigation of the effect of financial leverage on financial performance of parastatals and revealed a

significant effect of leverage on financial performance. The researchers used Kenya Power as their case study and employed data from primary and secondary sources; questionnaires, audited reports and periodic publications, which were analyzed using inferential and descriptive statistics. The study was carried out in the context of a government parastatal. Further, only Debt to Equity ratio was used to measure financial leverage.

2.3.2 Corporate Governance and Financial Performance

Kyazze, Nkote and Wakaisuka-Isingoma (2017) adopted cross sectional design to examine the relationship between co-operative governance and non-financial performance and concluded that co-operative governance is a good indicator of social performance. Of the four independent variables, the findings revealed a positive significant relationship between monitoring rights and innovation and social performance, whereas a statistically insignificant relationship was reported between ratification of management decision and policy compliance and social performance. The study focused on social performance of co-operative societies. This study focused on financial performance of agricultural co-operatives.

Roy (2016) conducted an exploratory analysis of listed Indian companies in the investigation of the relationship between corporate governance and financial performance. A panel of 58 firms over the 5-year period from 2007 to 2011 was used. The researcher concluded that return on assets is significantly influenced by 7 factors, while Market to book value ratio is significantly influenced by 8 factors. The study

focused on listed companies in India whereas the current study focused on agricultural co-operatives in Kenya.

Otieno, Mugo, Njeje and Kimathi (2015) studied the effect of corporate governance on financial performance of Savings and Credit Co-operative Societies (SACCO's). Using the census method, the study did a survey of three SACCO's with the largest number of members in Nakuru between May and December 2013. Spearman's rank correlation was used to analyze and present findings. The study found a significant relationship between the financial reporting and management and performance, and an insignificant relationship between size and financial performance. It also suggested that participative management should be enhanced by SACCO's. The study focused on a very small sample of three SACCO's within a very short time period of one year and thus may not establish meaningful patterns among the data.

Bond (2009) tested the hypothesis that the board size can influence the performance of a co-operative society. The study which used a survey of co-operative societies managers and several USDA data sets, concluded that large boards have a statistically significant negative effect on performance. The study concentrated on a single measure of corporate governance. This study broadened the measures of corporate governance by considering Annual General Meeting and Internal Audit Committee.

2.3.3 Leverage, Corporate Governance and Performance

Nguyen and Phan (2017) used hierarchical regression to measure the direct and moderating effect of corporate governance on the relationship between financial leverage and firm performance in privatized firms in Vietnam in 2013. The researchers found a

positive effect of low level of debt, and a negative effect of the proportion of non-executive Directors on performance. However, these findings may not apply to non-privatised firms. The period covered by the study was also too short to establish meaningful patterns among the data.

Iqbal and Javaid (2017) examined the moderating role of corporate governance on the relationship between financial performance and capital structure. They used multiple regression on panel data. The study covered the period of 2004 to 2009 and focused on 173 manufacturing firms listed in Pakistan's KSE. A positive relationship between capital structure and firm performance was reported. Board structure and transparency & disclosure had a positive statistically significant effect on firm performance whereas ownership structure did not have a significant influence on firm performance. However, the researchers did not consider the direct financial leverage-financial performance relationship in their model.

Focusing on companies listed at the East African Community Securities Exchange, Okiro *et al*., (2015) determined the effect of corporate governance and capital structure on performance. The study anchored on agency theory and employed a census of all the 98 listed firms from 2009 to 2013. The findings revealed a significant positive relationship between corporate governance and firm performance. Whereas the study considered the intervening effect of financial leverage on the relationship between corporate governance and firm performance in their model, the current study considered the moderating effect of corporate governance on the two variables.

Javeed, Hassan and Azeem (2014) tested the relationship between capital structure and corporate governance on firm value. One hundred and fifty-five non-financial firms listed at the Karachi Stock Exchange for the years 2008 to 2012 were studied and the fixed effects regression method used to test the relationships between the variables. The study found a significant positive effect on the relationship between capital structure and firm value. Among the corporate governance indicators, only ownership concentration and board balance measures were found to affect firm value positively. The study used Tobin-Q (TQ) as the measure of firm value whereas this study has used Economic Value Added (EVA) as the measure of financial performance.

2.4 Summary of Literature Review and Research gaps

Author(s)	Objective(s)	Methodology and Findings	Research Gaps	How the study seeks to fill the gaps
Chesang and Ayuma, (2016)	To examine the effect of financial leverage on profitability of agricultural companies listed at the Nairobi securities exchange.	Descriptive research design Regression model Debt to equity ratio and current ratio have a statistically significant effect on profitability.	The findings differ in Agricultural Co-operatives.	This study focused on Agricultural Co-operatives in Kiambu.
Singh and Bansal (2016)	To examine the impact of financial leverage on the performance and valuation of selected firms at Bombay Stock Exchange.	Panel data regression Leverage has a significant negative impact on EVA, ROA and Tobin's Q.	This finding contradicts other studies e.g Raza, (2013), which finds no significant relationship between financial leverage and performance.	The inconsistencies in the previous studies motivated the current study.
Gweyi and Karanja (2014)	To explore the effect of financial leverage on financial performance of deposit taking Saccos in Kenya.	Correlation analysis Perfect positive correlation between debt equity ratio with return on equity and net profit margin. Weak positive correlation between debt equity ratio with income growth and return on assets.	The scope was limited to deposit taking Saccos. The study also covered a limited period of 3 years.	The study focused on Agricultural co-operatives and extend the study time period to 5years.
Kyazze, Nkote,	To test the	Correlational cross-sectional design	The study majored on	This study

Author(s)	Objective(s)	Methodology and Findings	Research Gaps	How the study seeks to fill the gaps
Wakaisuka and Ntim (2017)	relationship between cooperative governance and non-financial performance of cooperative societies in Uganda.	Significant positive relationship between monitoring rights and social performance, and innovation on social performance. Statistically insignificant relationship between ratification of management decision and policy compliance and social performance.	social performance of Co-operatives.	concentrated on financial performance of co-operatives.
Nguyen and Phan (2017)	To examine the role of corporate governance and financial leverage on performance of privatized firms in Vietnam	Hierarchical regression approach Low level of debt has a positive effect on firm performance Proportion of Non-Executive Directors has a negative effect on firm performance	The study was carried out among Privatized Firms in Vietnam.	Study was done among agricultural co-operatives in a Kenyan context.
Iqbal and Javaid, (2017)	To examine the moderating effect of Corporate Governance on the relationship between financial performance and Capital Structure of Pakistan's listed Manufacturing firms	Multiple Regression Capital structure has a positive relationship with financial performance. Inclusion of the moderating variable corporate governance has a positive significant effect on the interaction between capital structure and financial performance.	The study concentrated on the moderating role of corporate governance on the leverage firm performance relationship.	This study concentrated on the moderating role of corporate governance as well as the direct financial leverage financial performance relationship.

Author(s)	Objective(s)	Methodology and Findings	Research Gaps	How the study seeks to fill the gaps
Javeed, Hassan and Azeem (2014)	To investigate the interrelationship between capital structure, corporate governance and firm value	Fixed effects regression method Capital structure has a significant positive impact on firm value Leverage has no significant effect on corporate governance. Of the corporate governance measures, only board balance and ownership concentration have a significant positive effect on firm value.	Use of only Tobins Q, a firm value measure as a proxy for the dependent variable.	Used Economic Value Added (EVA), a financial performance measure as a proxy for the dependent variable.

Table 2. 1 Research Gaps

Source: Author and Literature Review (2019)

2.5 Conceptual Framework

The study used the conceptual framework in figure 2.1 to demonstrate the conceptualization of the researcher regarding the interconnections between the variables of the study. Previous studies gave support to the relationship between financial leverage and firm performance. This relationship may also be moderated by corporate governance factors. The framework integrated financial leverage, corporate governance factors and financial performance into the model shown in figure 2.1.

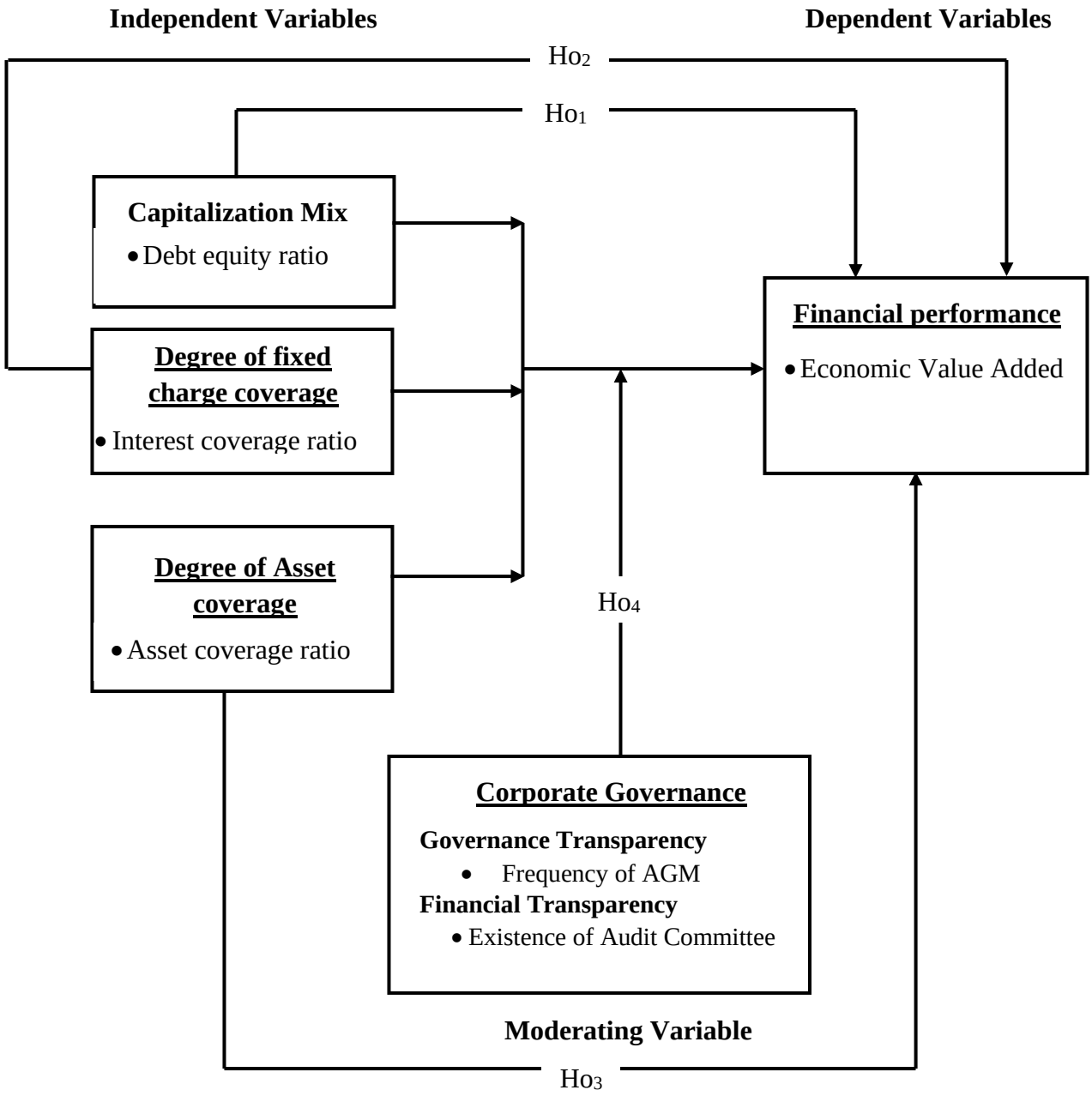

Figure 2. 1 Conceptual Framework

Source: Author, 2019

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the methodology used to guide this study to achieve research objectives. The chapter describes the research tools employed and the methods used in the data collection process. The scope further consists of research philosophy, research design, modeling, sampling technique, data collection instruments and procedures, data analysis and presentation, diagnostic testing and ethical standards.

3.2 Research Philosophy

Philosophical orientations influence research methods. To develop a philosophical perspective, a researcher makes core assumptions regarding the scientific and sociological dimensions. The two philosophical approaches that form the foundation of knowledge upon which the assumptions of a study are based are phenomenology which is a subjective approach and positivism which is objective (Smith, 1998). These approaches are defined by assumptions concerning human nature (pre-determined or not), epistemology (knowledge), ontology (reality) and methodology (the researchers tool kit) (Hughes & Sharrock, 1997).

This study adopted positivism research philosophy which adopts a clear quantitative approach to investigating phenomena (Smith, 1998). Positivism assumes the existence of an objective reality independent of human behavior. The positivist believes universal scientific prepositions to be true if only they can be verified by empirical evidence. This philosophy involves focusing on facts, minimizing phenomena to simplest elements,

checking for causality and foundational laws and formulating hypothesis and testing them. It also involves taking large samples and the operationalization of concepts so that they can be measured (Saunders, Thornhill, & Lewis, 2009). This study was based on existing body of knowledge. Scientific processes were followed in hypothesizing fundamental laws, propositions were verified through empirical tests and a large sample consisting of the entire population has been studied hence the inclination toward positivism approach.

3.3 Research Design

Research design is the framework used to guide a research study. It ensures that the acquired evidence will allow the researcher to sufficiently address the research problem analytically and as definitive as possible**.** According to Kothari (2004), this conceptual structure within which research is conducted, is the organization of conditions for collection and analysis of data in a way that economy and relevance to the purpose of the research are combined. This study used an explanatory research design. Explanatory design seeks to determine causes and reasons and provides evidence to support or refute an explanation or prediction (Saunders *et al.*, 2009).

In the determination of causality, a key aspect is the observation of the variation in the variable that is presumed to prompt change in the other variable(s) and then measuring the changes in the other variable(s) while controlling for other confounding effects so as not to distort the results (Saunders *et al*, 2009). According to Creswell (2014), explanatory research design begins with quantitative research and ends with qualitative research. The research design is suitable where the researcher seeks to describe how the phenomenon operates by citing the basic components that prompt change in it without

manipulation of the independent variable (Kerlinger & Lee,2000). The aim of this study was to establish the effect of financial leverage on firm performance and the study did not influence the independent variables since their manifestations materialized beforehand.

3.4 Empirical Model

The researcher modified the model used by Mwangi *et al.* (2014) for the purposes of this study. Since the data has both cross-sectional and time series aspects, the researcher estimated a panel regression as fronted by Greene (2008). Panel data, also known as longitudinal data is data in which observations are obtained on the same set of entities at several periods of time (Megersa, 2014). Apart from accounting for unobservable heterogeneity, panel data analysis has other advantages including correct inference of model parameters and substantial potential to capture the complexity of human behavior in comparison to time series data or cross-sectional data individually (Hsiao, 2007). Further, panel data allows for the achievement of a larger sample size, yielding much larger data set with more variability and less collinearity among the variables.

The study specified the general empirical model used in the study as follows:

$$Y_{it} = \alpha + X'_{it}\beta + \varepsilon_{it} \quad \text{.....(3.1)}$$

Where: Y_{it} is financial performance of firm i at time t;

i denotes the observation (firm), i = 1, …. 25;

t is the time period, t = 2013, ……,2017;

X'_{it} denotes a vector of the independent variable financial leverage measured by capitalization mix, degree of fixed charge coverage and degree of asset coverage at time t;

β are coefficients to be estimated, α is a constant term;

ε_{it} is a composite error term.

3.4.1 Direct Effect Model

The study expanded equation 3.1 to obtain equation 3.2 for estimating the study variables.

$$EVA_{it} = \alpha + \beta_1 CM_{it} + \beta_2 DFC_{it} + \beta_3 DAC_{it} + \varepsilon_{it} \quad \text{.....(3.2)}$$

Where:

EVA_{it} = Economic Value Added of firm i at time t;

CM_{it} = Capitalization Mix of firm i at time t;

DFC_{it} = Degree of Fixed Charge Coverage of firm i at time t;

DAC_{it} = Degree of Asset Coverage of firm i at time t;

α = Constant term;

β_s = Coefficients of explanatory variables;

Subscript *i* = Firms (cross-section dimensions) ranging from 1 to 25;

Subscript *t* = Years (time-series dimensions) ranging from 2013 to 2017;

ε_{it} = Composite error term of the model.

3.4.2 Moderating Effect Model

To determine the moderating effect of corporate governance on the relationship between financial leverage and firm performance, Whisman and McClelland (2005) was used. The researchers contend that if there is an overall effect to be moderated, the test for moderation should involve the determination of whether the coefficient for the interaction term statistically differs from zero. Meme (2017) incorporated the moderating variable in the regression model to determine the moderation effect on the relationship between the independent and dependent variables. Hence, moderating effect of Annual General Meeting and Internal Audit Committee on the relationship between financial leverage and firm performance was estimated as:

Model 3.3, regress financial performance on financial leverage and note the r squared (r^2_1)

$$Y_{it} = \alpha + \beta_1 FL_{it} + \varepsilon_{it} \quad \text{..... .....} \quad (3.3)$$

Model 3.4, introduce corporate governance and note the new r squared (r^2_2)

$$Y_{it} = \alpha + \beta_1 FL_{it} + \beta_2 CG_{it} + \varepsilon_{it} \quad \text{.....} \quad (3.4)$$

Model 3.5, introduce the product of financial leverage and corporate governance and note the new r squared (r^2_3)

$$Y_{it} = \alpha + \beta_1 FL_{it} + \beta_2 CG_{it} + \beta_3 FLCG_{it} + \varepsilon_{it} \quad \text{.....} \quad (3.5)$$

Note the increment in the squared multiple correlation (r^2_2 - r^2_3). If the difference is significantly greater than 0, the difference between the two models is statistically significant.

Where:

α = Constant term;

Y_{it} = Composite index for dependent variable financial performance at time t;

FL_{it} = Composite index for independent variable financial leverage at time t;

CG_{it} = Composite index for moderator variable corporate governance, given as the product term of Annual General Meeting and Internal Audit Committee at time t;

β_s = Coefficients of explanatory variables;

Subscript *i* = Firms (cross-section dimensions) ranging from 1 to 25;

Subscript *t* = Years (time-series dimensions) ranging from 2013 to 2017;

ε_{it} = Composite error term of the model.

Table 3. 1 Operationalization and Measurement of Variables

Category	**Variable**	**Indicators/Operationalization**		**Measurement**	**Measurement Scale**
Dependent Variable	Financial Performance	• Economic Value Added A financial performance indicator that measures the value created in excess of the required return of the firm's shareholders.	EVA	(Rate on return – Cost of capital) Capital /Total Assets	Ratio
Independent Variables	Degree of Asset coverage	• Asset Coverage Ratio A financial leverage (FL) ratio that measures the ability of a firm to cover its debt obligations with its assets.	ACR	{(Total Assets-Intangible Assets) – (Current Liabilities-Short term Debt)}/Total Debt	Ratio
	Capitalization mix	• Debt Equity Ratio A FL ratio that compares a firm's total debt to the total equity invested by shareholders.	DER	Non-Current Liabilities/Equity	Ratio
	Degree of fixed charge coverage	• Interest Coverage Ratio A FL ratio that indicates the ability of a firm to pay from its earnings the interest expense on the outstanding debt.	ICR	Earnings Before Interest and Taxes (EBIT)/Interest Expense	Ratio

Moderating Variable	Corporate Governance	• Financial Transparency Presence of the audit committee	FT	Presence of the audit committee	Nominal
		• Governance Transparency The number of Annual General Meetings	GT	Number of Annual General Meetings at firm i in year t.	Nominal

Source: Author (2019)

3.5 Target Population

Greenland (2005) defines target population as the totality of elements being discussed and for which information is required. The target population comprised of all the registered agricultural co-operatives in Kiambu. Kiambu County had 25 active registered co-operatives as at December 2017. The study focused on registered active agricultural co-operatives since their annual reports and financial statements are readily available at the County State Department of Co-operatives office.

Table 3. 2 Target Population

Sub-County	Number of Agricultural Co-operatives	Percentage
Gatundu North	2	8
Gatundu South	7	28
Githunguri	3	12
Kabete	3	12
Kiambaa	2	8
Kiambu	2	8
Limuru	2	8
Lari	2	8
Kikuyu	2	8
Juja	0	0
Thika	0	0
Ruiru	0	0
Total	**25**	**100**

Source: Author & State Department of Co-operatives, Kiambu County, (2019)

3.6 Sampling Design

Kombo and Tromp (2006) define sampling as the process of choosing an appropriate representation of a population with the aim of determining parameters of the entire population. A sample design is a well-defined plan for getting a sample from a certain population (Kothari, 2004). The study carried out a census. A census seeks to collect information concerning each member of the population by listing all elements in the group and measuring one or more characteristics of those elements (Lavrakas, 2008). The proposition enhances the validity of the collected data by encompassing particular manifestations with rich information (Saunders *et al*., 2009). Ideally, a census does not suffer from sampling error. The total number of active registered agricultural co-operatives in Kiambu county, Kenya used was 25.

3.7 Data Collection Instruments

The researcher used secondary data which was collected using a data collection sheet. The research instrument (refer to appendix III) was used to extract and collate the data from the financial and annual reports. The required financial data was extracted from financial statements namely statement of financial position, income statement and the notes to the accounts. Secondary data relating to corporate governance was obtained from the published annual reports.

Validity is the degree to which an instrument measures what it claims to measure. According to Bryman and Cramer (2011), validity of research instrument alludes to the extent of accuracy with which obtained data capture what they were intended to measure. Content validity is the degree to which a measure incorporates every aspect of a given construct (Sekaran, 2011). To this end, items are selected in a way that they adhere to the

test specification that is formulated through an in-depth scrutiny of the subject domain. The researcher consulted the supervisors, other university lecturers and experts in developing data collection sheets to check the appropriateness of constructs and measures to achieve this objective.

3.8 Data Collection Procedure

A research authorization permit was obtained from the National Commission for Science, Technology and Innovation (NACOSTI) to permit the use of published data from the State Department of Co-operatives. The study then used panel data which improves quality and quantity of data at all levels. Data consists of 25 co-operative societies whereas the time series are years from 2013 to 2017.

Various reasons led to the choice of panel data. First, it allows for the control of un-observed individual time invariant heterogeneity which is not easily attainable with pure cross sectional data (Hsiao, 2007). Unrestricted heterogeneity may cause estimates of model parameters to suffer from the incidental parameters problem. The researcher enumerates other advantages of panel data as more degrees of freedom and more efficiency, less collinearity between variables and greater variability. Further, panel data is useful in cases where it is suspected that the outcome variable may depend on some unobserved explanatory variables that are possibly correlated with the observed explanatory variables (Megersa, 2014).

3.9 Data Analysis and Presentation

The data obtained was analyzed using descriptive and inferential statistics. Data was analyzed using descriptive statistics (means and standard deviations) and inferential analysis (Pearson simple correlation and panel regression analysis) using STATA 14.0

software. The software has the capacity to work with panel data. The study computed applicable ratios subject to the secondary data obtained from the financial statements as defined in Table 3.1. Excel worksheets were used to compute the ratios for each of the co-operative societies. The study further used the Feasible Generalized Least Square (FGLS) approximation after accounting for contraventions of classical linear regression assumptions. Finally, data has been presented in figure and tables.

3.10 Diagnostic Tests

It is important to make some non-violations of the assumptions of the Classical Linear Regression Model (CLRM) prior to attempting to estimate equations 3.2 and 3.3. Incase these suppositions are violated, there is a possibility of the study being subjective. Hence the study has tested for normality, multicollinearity, autocorrelation, heteroscedasticity and panel unit root to ensure proper measurement of equations 3.2 to 3.5.

3.10.1 Multicollinearity Test

Multicollinearity refers to a state where there is a high degree of association between the independent variables (Kothari, 2004). This leads to the distortion of the regression coefficients causing them to be unstable, difficult to explain and thus baseless significance tests (Cooper & Schindler, 2006). The study tested for multicollinearity using the variance inflation factors (VIF). VIF is the extent of inflation standard errors of slopes as a result of the presence of multicollinearity. While a VIF of 1 alludes to the absence of correlation among the predictor and the rest of the predictor variables, values in excess of 10 is a sign of the presence of multicollinearity. Gujarati (2003) contends that the dilemma is the severity of multicollinearity as opposed to the presence of it.

3.10.2 Normality Tests

The supposition for normality is particularly essential when constructing reference interval for variables (Ghasemi & Zahediasl, 2012). If the suppositions do not hold, it is impossible to draw correct and valid conclusions about the reality. Graphical assessment of normality has been used to ascertain whether the data is normally distributed. In a normal distribution, the observations are dense in intervals around the mean where the curve is highest whereas the observations are less crowded towards the end of the curve. In some instances, visual inspection of normality may be unreliable hence other tests for normality may be employed. The study performed the Bera and Jarque (1981) test of normality. The null hypothesis states that the disturbances are not normally distributed and rejects the null hypothesis if the P- value is less than 5 percent level of significance.

3.10.3 Autocorrelation Test

Autocorrelation is a characteristic of data where there is correlation among the error terms of different time periods. This problem influences the efficiency of the estimators to the extent that the standard errors are skewed hence invalid significance test and conclusions (Gujarati, 2003). The existence of cross sectional and time series data in panel data increases the doubt of the existence of autocorrelation. This study used the Durbin Watson test to determine the existence of serial correlation. The null hypothesis states that the data has no serial correlation. According to Wooldridge (2002), a p value of less than 5% significance level indicates the presence of serial correlation.

3.10.4 Heteroscedasticity Test

Heteroscedasticity exists where there is no constant error variance (Gujarati, 2003). The presence of heteroscedasticity violates the CLRM supposition that error term is

homoscedastic. This study tested for heteroscedasticity using the Breusch-Pagan test. This choice was necessitated by the test's applicability to both non-normal error terms and non-linear models (Berry & Feldman, 1985). According to Gujarati (2003), heteroscedasticity should not be a matter of great concern unless in its severity since it does not lead to biased parameters, however (Brooks, 2008) emphasizes that estimating a regression model that does not account for heteroscedasticity would result into impartial parameter estimates. The study used Feasible Generalized Least Squares to approximate the regression model since the heteroskedasticity problem was detected. The null hypothesis is that the error variance is homoscedastic.

3.10.5 Stationarity Test

Since panel data has both time series and cross-sectional aspects, test for stationarity is necessary. Stationarity is a property of data where the mean, autocorrelation and variance do not change over time (Gujarati, 2003). According to Wooldridge (2002), the test for stationarity is imperative to make certain that regression results are not spurious to the extent that there is a high coefficient of determination between variables even if there is no cause and effect. Estimation of models without consideration of the non-stationarity characteristic of data would result to fictitious results (Gujarati, 2003). This study used the Augmented Dickey-Fuller test to ascertain if the variables are stationary or non-stationary. The null hypothesis is that all panels have unit root.

3.10.6 Test for Fixed or Random effects

It is important to establish whether to run a random effects or fixed effects model when using panel data analysis. This decision is based on the Hausman specification test. The random effect model postulates the presence of one common intercept and that fluctuates

from firm to firm in a random fashion while the fixed effect model supposes intercepts that are specific to each firm and are constant over time (Baltagi, 2005). The Hausman specification test aims at determining whether significant correlation exists between the unobserved firm-specific random effects and the regressors. If correlation does not exist, the random effects model is more appropriate. On the contrary, if such correlation exists, then the fixed effects model would be most appropriate (Greene, 2008). The null hypothesis of this test states that the variance across the entities is zero indicating that there are no panel effects.

3.11 Ethical Considerations

Ethical considerations in research deal with voluntary participation, confidentiality, identifying purpose and sponsor, no harm to respondents, analysis and reporting (Munhall, 1988). During the compilation of the research work, the study undertook cautious measures to safeguard the correctness of the information presented in the thesis after proper examination of all the data extracted from the annual reports of agricultural co-operatives in Kiambu County, Kenya. The researcher obtained permission to conduct research from the University and the National Council of Science and Technology (NACOSTI). The researcher strove to avoid bias in all stages of the research. Academic literature and journal articles used in part in this study have been fully acknowledged.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the data analysis results as per the objectives and hypothesis of the study as well as their interpretation and discussions. The results are presented in tables, graphs and interpretations, and laid out in the following manner; descriptive statistics, diagnostic testing, correlation and regression analysis, hypothesis testing and discussion of the findings. Results are interpreted accordingly besides discussing the findings with literature.

4.2 Descriptive Statistics

Descriptive statistics are a summary of measurements that dictate the location and variability of the variables being studied. The descriptive statistics results were based on the mean, minimum and maximum values and standard deviation. Table 4.1 displays a summary of the descriptive statistics for the variables under study averaged for the five-year period running from 2013 to 2017.

Table 4. 1 Descriptive Statistics of All Variables

Variable	Observations	Min	Max	Mean	Std. Dev.
EVA	125	-16.49659	2.824932	-1.504374	2.460512
ACR	125	-68.03129	1798.536	78.80899	274.6973
DER	125	0.001989	7.936122	1.45985	1.701996
ICR	125	-222.1936	356.4001	-9.386896	64.20662
AGM	125	0	1	0.864	0.344168
IA	125	0	1	0.28	0.4508057

Source: Study Data 2019

A sample size of 125 firm-year observations is shared across all the variables. On the whole, the mean value of Economic Value Added (EVA) is -1.504374 with a standard deviation of 2.460512 showing large variations in EVA within the period. The negative mean value of EVA is an indication that on average, agricultural co-operatives in Kiambu County Kenya do not generate value from the funds invested into them. It follows therefore that most prospective investors would not be enticed to invest in the co-operative societies. However, the maximum value of 2.824932 means that the particular agricultural co-operative society has a positive incremental difference in the rate of return over its cost of capital and hence is generating value from the funds invested into it.

The indicators of financial leverage are Asset Coverage Ratio (ACR), Debt-Equity Ratio (DER) and Interest Coverage Ratio (ICR). The mean value for ACR is 78.80899 indicating that on average, the agricultural co-operative societies have a very high ability to honour their debt obligations by selling off their assets in situations when a firm is not profitable. The standard deviation of 274.6973 indicates a large variability in ACR over time. On the other hand, the negative minimum ACR value of -68.03129 indicates that the respective co-operative society has a higher debt obligation in comparison to its assets. In instances of unprofitability, such a firm would not be able to fully repay its debts using proceeds from sale of its assets. However, the positive maximum ACR is an indication that the particular co-operative society is less risky and has the ability of repaying debt obligations by disposing assets.

The other variable for financial leverage was Debt Equity Ratio (DER). The mean score of DER is 1.45985 with a standard deviation of 1.701996 indicating large variations in

DER. On average most of the co-operative societies are highly levered at 145.985% percent. The high leverage indicates high risk to shareholders since such firms have aggressively financed their growth and operations through debt. Indicatively, a high DER points to a lower ability of shareholders equity to cover outstanding debt obligations in case of a business downturn. The positive minimum and maximum values of DER show that all the co-operative

Societies under study had more debt than shareholders equity.

Financial leverage was also measured by Interest Coverage Ratio (ICR). Table 4.1 shows a mean ICR value of -9.386896 and a standard deviation of 64.20662 showing large variations over the period under study. The average ICR mean of -9.386896 indicates that most of the co-operative societies cannot cover their debt interest obligations using their earnings. Whereas the minimum value of -222.1936 shows that the respective firm was unable to meet its debt interest obligations, the maximum value of 356.4001 indicates that the particular firm was able to honor its debt interest obligations. The high positive maximum ICR ratio though safe, may mean that the co-operative society is not taking the opportunity to increase earnings through leverage.

The two indicators of corporate governance were Annual General Meeting (AGM) and Internal Audit Committee (IA). The mean score of AGM stood at 86.4%, indicating that on average most of the co-operative societies held their Annual General meetings during the period under study. The standard deviation of 34.41% shows small variations in AGM over time. The mean score of Internal Audit Committee (IA) is 28%, an indication

that 72% of the co-operative societies did not have internal committees during the time under study.

4.2 Diagnostic Test Results

The researcher has carried out varied diagnostic tests as indicated in chapter three to ascertain that suppositions of the Classical Linear Regression Models (CLRM) are not breached. The pre-estimation tests carried out for this study are multicollinearity and stationarity whereas the post-estimation tests are autocorrelation, normality, heteroscedasticity, and the Hausman specification test.

4.2.1 Multicollinearity

The variance inflation factor (VIF) was used to test for multicollinearity. A VIF greater than 10 (vif>10) points to the problem of multicollinearity. Table 4.2 displays the results.

Table 4. 2: Multicollinearity Results

Variable	Proxy	VIF	1/VIF
Interest Coverage Ratio	ICR	1.17	0.951201
Debt Equity Ratio	DER	1.82	0.548575
Asset Coverage Ratio	ACR	1.19	0.928549
Annual General Meeting	AGM	1.89	0.530184
Internal Audit Committee	IA	1.14	0.881885
Mean VIF		**1.44**	

Source: Study Data (2019)

As displayed in table 4.2 the predictor variables used in the study are interest coverage ratio (ICR), debt equity ratio (DER), Asset Coverage Ratio (ACR), Annual General Meeting (AGM) and Internal Audit Committee (IA). The study data indicate a mean VIF of 1.44 which is less than 10. Further, the respective individual variables also indicate VIF values less than 10. This indicates that the data did not manifest the problem of multicollinearity. Hence, based on VIF, all the variables did not exhibit severe multicollinearity.

4.2.2 Stationarity Test

To avoid spurious regression results, panel root test is carried out for all the variables under study. The Augmented Dickey-Fuller test is employed and the test outcome presented in table 4.3.

Table 4. 3: Stationarity Test Statistic

Variable	Test statistic	Critical Value(1%)	Critical Value(5%)	Critical Value (10%)	P-value
EVA	-5.161	-3.502	-2.888	-2.578	0.0000
ACR	-5.897	-3.502	-2.888	-2.578	0.0000
DER	-4.197	-3.502	-2.888	-2.578	0.0007
ICR	-8.901	-3.502	-2.888	-2.578	0.0000
AGM	-4.558	-3.502	-2.888	-2.578	0.0002
IA	-3.672	-3.502	-2.888	-2.578	0.0045

Source: Study Data (2019)

The results displayed in table 4.3 show p-values that are less than 0.05 for all the variables. Consequently, the null hypothesis that all panels have unit root for Economic Value Added, Asset Coverage Ratio, Interest Coverage Ratio, Debt Equity Ratio, Annual General Meeting and Internal Audit as recommended by Choi (2001) is rejected. Hence

the study finds that all the variables in question are stationary. This is an indication that the obtained results are not spurious.

4.2.3 Test for Normality

The study applies both the Jarque-Bera test and the graphical method to test for normality. Figure 4.1 shows the graphical method results.

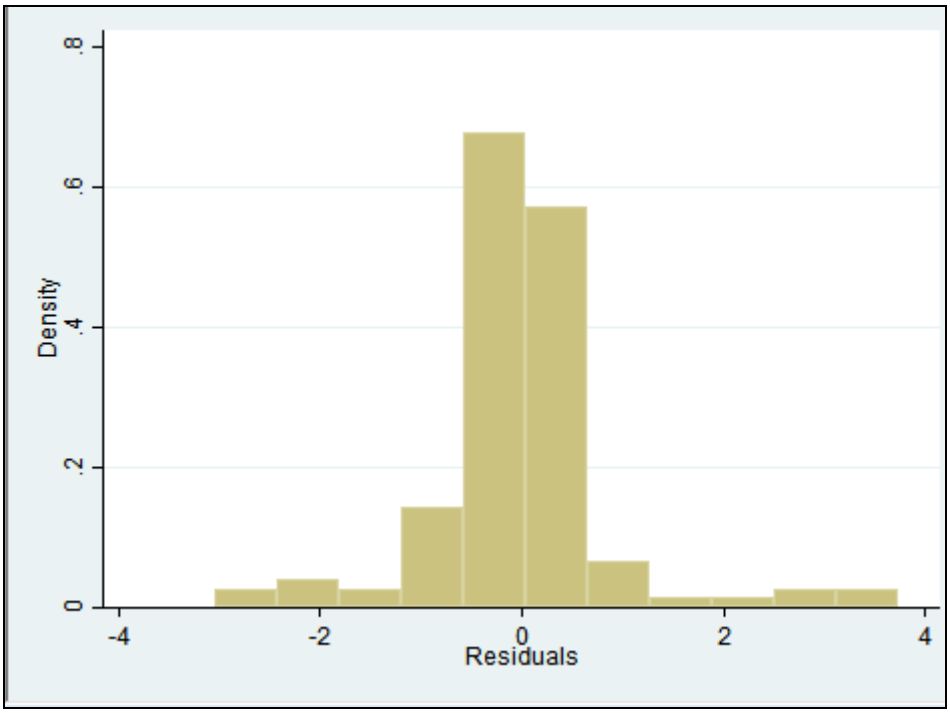

Figure 4. 1: Histogram of Residuals

Source: Study Data (2019)

According to the results in figure 4.1, the residuals are normally distributed since the histogram is bell-shaped and both tails are of similar length. Whereas a skewed distribution has one longer tail, a normal distribution is symmetric about the mean. To substantiate the results in figure 4.1, the researcher further carried out the Jarque-Bera test as presented in Table A.1 in Appendix IV. Under the Jarque-Bera test, the null

hypothesis states that the disturbances are not normally distributed. Considering that the p-value (0.0000) is less than 5 per cent, the study rejects the null hypothesis and concludes that the residuals are normally distributed.

4.2.4 Test for Heteroscedasticity

The Breusch-Pagan test was used to test for panel level heteroscedasticity. The test establishes whether the residuals are constant or not. The null hypothesis of the Breusch-Pagan test is that residuals are homoscedastic. Table 4.4 below and Tables A.2 in appendix IV present the test results.

Table 4. 4: Breusch-Pagan test results for Heteroscedasticity

EVA
chi2 (1) = 69.19 Prob > chi2 = 0.0000

Source: Study Data (2019)

The test results for the Breusch- Pagan test in table 4.4 above show the prob> chi2= 0.000 for the panel regression model with EVA thus indicating presence of heteroskedasticity. The study rejects the null hypothesis both at 90% and 95% significance level and concludes that there is the presence of heteroskedasticity in the study data. Consequently, the Robust Standard Errors were used to address the problem.

4.2.5 Test for Autocorrelation

To test for autocorrelation, the study has employed the Durbin Watson test. Under this test, the null hypothesis states that there is no serial correlation. Table A.3 in appendix IV presents the test results. The test statistic reported is the d-test statistic. The d-test statistic is

0.9079762 with EVA as the dependent variable. Since the d-test statistic is greater than 0.05, the study failed to reject the null hypothesis (at 95% level of significance) and concluded that the errors in the varied observations were not correlated.

4.2.6 Hausman Test

It is important to establish which model between random and fixed effects model to run when carrying out panel data analysis. To decide on the best suited model, coefficients are estimated by both the fixed effects and the random effects models. To this end, the study has employed the Hausman specification test. Table A.4 and A.5 in appendix V show the outcome of the Hausman test.

Table 4. 5: Hausman Specification Test for EVA

	Coefficients			
	(b)	**(B)**	**(b-B)**	**sqrt(diag(V_b-V_B))**
	fe	**re**	**Difference**	**S.E.**
ACR	.6605594	.8099707	-.1494113	.1581338
DER	-.037133	- .1153232	.0781902	.0748785
ICR	.2175646	.3904279	-.1728633	.090202
AGM	.0964659	.0135805	.0828854	.2620047

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
=8.11
Prob>chi2 = 0.0877

Source: Study Data (2019)

To choose between random effects and fixed effects model where the economic value added (EVA) is the dependent variable, the Hausman test is used and the outcome displayed in table 4.5. The null hypothesis is that the random effects model is preferred. For the EVA model, the Hausman test gives a chi-square value of 0.24 and a p-value of 0.9931. Since the p-value is above 0.05, the study fails to reject null hypothesis that random effects model is preferred to the fixed effects model, and applies the random effects model.

4.3 Correlation Analysis

So as to deduce the nature of statistical relationship between each pair of variables, the study has conducted correlation analysis. To this end, Pearson correlation was performed for the relationship between the study variables. The correlation matrix of all the variables under study, are shown in Table 4.6 below.

Table 4. 6: Correlation Matrix Results

VARIABLE	Economic Value Added	Asset Coverage Ratio	Debt Equity Ratio	Interest Coverage Ratio	Annual General Meeting
Economic Value Added	1.000				
Asset Coverage Ratio	0.2829* 0.0014	1.000			
Debt Equity Ratio	-0.2286* 0.0104	-0.2406* 0.0069	1.000		
Interest Coverage Ratio	0.2792* 0.0016	0.3155* 0.0003	-0.0382 0.6725	1.000	
Annual General	0.0987 0.2734	0.1171 0.1933	-0.6391* 0.0000	-0.0564 0.5325	1.000

VARIABLE Meeting	Economic Value Added	Asset Coverage Ratio	Debt Equity Ratio	Interest Coverage Ratio	Annual General Meeting
Internal Audit Committee	0.0816 0.3654	-0.0502 0.5784	-0.0403 0.6555	0.1290 0.1517	0.2474* 0.0054

Source: Study Data (2019)

Correlation analysis was carried out between financial leverage and financial performance (proxied by Economic Value Added). The results displayed on table 4.6 indicate that Asset Coverage ratio has a significant weak positive relationship with Economic Value Added. The findings indicate that at 5% level of significance, r = 0.2829 with a p-value of 0.014. Interest Coverage Ratio also has a significant weak positive relationship with Economic Value Added. The findings indicate that at 5% level of significance, r = 0.2792 with a p-value of 0.016. Debt Equity Ratio has a weak significant negative relationship with Economic Value Added. The findings indicate that at 5% level of significance, r = -0.2286 with a p-value of 0.0104. These findings imply that financial performance as measured by Economic Value Added increases as the Asset Coverage Ratio and Interest Coverage ratio increases. The significant negative relationship between Debt Equity Ratio and Economic Value Added implies that as Debt Equity Ratio increases, financial performance as measured by Economic Value Added decreases. This is consistent with the findings of Geyser & Hall, (2004) which found a negative and significant relationship between Debt Equity Ratio and Return on Equity.

4.4 Regression Analysis

This study is based on the theory that there exists a relationship between financial leverage and financial performance but this relationship is moderated by corporate

governance. The panel regression model with Economic Value Added as the dependent variable was used to ascertain the strength of the direct relationship between financial leverage and financial performance. Regression analysis was also carried out to establish the statistical significance of the various hypotheses. Whereas the F statistics establishes if the general regression model is a good fit for the data, the coefficient of determination (R^2) value is the proportion of variance in the dependent variable (Economic Value Added) which is predictable from the independent variables. The null hypothesis holds that the regression coefficients are equal to zero. Table 4.7 shows the F-statistic and the coefficient of determination of the dependent variable (Economic Value Added).

Table 4. 7: Test of fitness

EVA
F (3, 121) = 7.13
Prob>F = 0.0002
R-squared = 0.1503

Source: Study Data (2019)

The study results on table 4.7 indicate Prob>F= 0.0002 with Economic Value Added as the dependent variable. Since Prob>F=0.0002 is less than the significance level of 0.05, the study rejects the null hypothesis that the regression coefficients are equal to zero. Therefore, the panel regression model with Economic Value Added as the dependent variables was fit for analysis.

4.4.1 Test for Direct Effect

The first three objectives of this study were meant to determine the direct effect of Asset Coverage Ratio, Debt-Equity Ratio and Interest Coverage Ratio on the financial performance of Agricultural Co-operatives in Kiambu County, Kenya. Economic Value Added was used as the measure of financial performance. Consequently, Economic Value Added was regressed on Asset Coverage Ratio, Debt Equity Ratio and Interest Coverage Ratio. The findings are presented on Table 4.8.

4.4.1.1 Effect of Financial Leverage on Economic Value Added

Table 4. 8: Regression Results with EVA

Variable	Coefficient	Standard Error	t	P>t
ACR	1.174203	0.6250757	1.88	0.063
DER	-0.2589299	0.124918	-2.07	0.040
ICR	2.01937	0.8172106	2.47	0.015
Constant	-8.051937	1.926463	-4.18	0.000
R- Squared = 0.1503			Prob > F = 0.0002	

Source: Study Data (2019)

Table 4.8 shows the results of the regression model on the direct effect of financial leverage on financial performance with Economic Value Added as the dependent variable. Overall, the findings indicate an R-squared value of 0.1503 and F statistic of 0.0002. This implies that financial leverage explains 15.03 percent of the variations in Economic Value Added. The p-value (P=0.0002<0.05) shows that the regression model is a good fit for Economic Value Added. The results reveal that Asset Coverage Ratio has a positive but not statistically significant effect on Economic Value Added (P = 0.063 >

0.05). Debt Equity Ratio has a negative statistically significant effect on Economic Value Added ($P = 0.040 < 0.05$). On the other hand, Interest Coverage Ratio has a positive statistically significant effect on Economic Value Added ($P = 0.015 < 0.05$).

4.4.2 Test for Moderating Effect

The fourth objective of this study was to establish the moderating effect of corporate governance on the relationship between financial leverage and financial performance of agricultural co-operatives in Kiambu County. The proxies for corporate governance were Annual General Meeting and Internal Audit which the study collapsed into a composite. The corresponding hypothesis states that corporate governance has no significant effect on the relationship between financial leverage and financial performance of agricultural co-operatives in Kiambu County, Kenya. The regression model with Economic Value Added (EVA) as the dependent variable was estimated so as to ascertain the strength of the relationship between financial leverage and financial performance considering the moderating effect of corporate governance. The results for the regression models are presented on table 4.9.

Table 4. 9: Moderation Effect Regression Results with EVA

Variable	Coefficient	t	P>t
ACR	0.5846066	7.56	0.000
DER	0.1213731	7.59	0.000
ICR	0.7160695	7.03	0.000
Corporate Governance	0.9821695	88.56	0.000
constant	-2.863193	-11.71	0.000
Observations	125		
Model P-Value	0.000		
R-squared	0.9868		

Source: Study Data (2019)

Table 4.9 show a significant p-value (P = 0.000 >0.05) for the moderating variable corporate governance when integrated with the variables for financial leverage and regressed against Economic Value Added (EVA). Further, Asset Coverage Ratio (ACR), Debt Equity Ratio (DER) and Interest Coverage Ratio (ICR) have p-values of 0.000 respectively. Thus, according to the results, the p-values for all the financial leverage variables are less than 0.05, hence statistically significant.

Table 4.8 (test for direct effect) indicates R squared value of 15.03% whereas Table 4.9 (after inclusion of the corporate governance composite) indicates R squared of 98.68%. Hence the change in R squared after the introduction of the moderating variable is 83.65%. This implies that corporate governance accounts for 83.65% additional change in the variability of financial performance besides the 15.03% that is explained jointly by

asset coverage ratio (ACR), debt equity ratio (DER) and interest coverage ratio (ICR). This is an indication that corporate governance is statistically significant in explaining the relationship between financial leverage and financial performance.

4.5 Hypothesis Testing

The study further tested the hypotheses in order to test the relationship between the study variables. Firstly, the study sort to determine the effect of capitalization mix on financial performance of agricultural co-operatives in Kiambu County, Kenya. The study hypothesized that Capitalization mix has no significant effect on financial performance of agricultural co-operative societies in Kiambu County, Kenya. The proxy for capitalization mix is Debt Equity Ratio. Table 4.10 indicate the results.

Table 4. 10: Capitalization Mix and Financial Performance

Direct Relationship Between	Coefficient	t- statistic	p-value	Level of Sig.
Debt Equity Ratio and EVA	-0.2589299	-2.07	0.040	0.05

Source: Study Data (2019)

From the findings on table 4.10, it was noted that Debt Equity Ratio, has a significant relationship with financial performance as measured by Economic Value added (P = 0.040 < 0.05) and thus the null hypothesis is rejected.

Table 4. 11: Degree of Fixed Charge Coverage and Financial Performance

Direct Relationship Between	Coefficient	t- statistic	p-value	Level of Sig.
Interest Coverage Ratio and EVA	2.01937	2.47	0.015	0.05

Source: Study Data (2019)

Secondly, the study sort to determine the effect of degree of fixed charge coverage on financial performance of agricultural co-operatives in Kiambu County, Kenya. The study hypothesized that Degree of fixed charge coverage has no significant effect on financial performance of agricultural co-operative societies in Kiambu County, Kenya. The proxy for Degree of fixed charge coverage is Interest Coverage Ratio (ICR). Based on the findings on table 4.11, Interest Coverage Ratio has a significant relationship with financial performance as measured by Economic Value added (EVA) ($P = 0.015 < 0.05$). Therefore, the null hypothesis that Degree of fixed charge has no significant effect on financial performance was rejected for the relationship between Interest Coverage Ratio and Economic Value Added.

Table 4. 12: Degree of Asset Coverage and Financial Performance

Direct Relationship Between	Coefficient	t- statistic	p-value	Level of Sig.
Asset Coverage Ratio and EVA	1.174203	1.88	0.063	0.05

Source: Study Data (2019)

Thirdly, the study sought to determine the effect of degree of asset coverage on financial performance of agricultural co-operatives in Kiambu County, Kenya. The study

hypothesized that Degree of asset coverage has no significant effect on financial performance of agricultural co-operative societies in Kiambu County, Kenya. The proxy for Degree of asset coverage is Asset Coverage Ratio. Based on the findings on table 4.12, it was noted that Asset Coverage Ratio, has an insignificant relationship with financial performance as measured by Economic Value added (P = 0.063 > 0.05). Therefore, the null hypothesis that Degree of Asset Coverage has no significant effect on financial performance is supported for the relationship between Asset Coverage Ratio and Economic Value Added and rejected.

Table 4. 13: Financial Leverage ,Corporate Governance and Financial Performance (EVA)

Moderating Variable (with EVA)	Coefficient	t- statistic	p-value	Level of Sig.
Financial Leverage (Composite index)	-0.0013021	-0.48	0.631	0.05
Corporate Governance (Composite index) * Financial Leverage	0.9821695	88.56	0.000	0.05

Source: Study Data (2019)

Lastly, the study sought to establish the moderating effect of corporate governance on the relationship between financial leverage and financial performance of agricultural co-operatives in Kiambu County, Kenya. The study hypothesized that corporate governance has no significant effect on the relationship between financial leverage and financial performance of agricultural co-operative societies in Kiambu County, Kenya. Based on the findings on table 4.13, it was found that corporate governance, whose proxy is the composite index for Annual General Meeting and Internal Audit has a significant relationship with financial performance as measured by Economic Value added (P =

0.030 < 0.05). Therefore, the study rejected the null hypothesis that states that corporate governance has no significant effect on the relationship between financial leverage and financial performance of agricultural co-operative societies in Kiambu County, Kenya.

4.6 Discussion of Findings

This section expounds on the outcomes and explanations of empirical results. It compares the empirical results with the theoretical background as well as the findings of studies done previously on financial leverage and financial performance of Agricultural Co-operative Societies presented in the literature review.

4.6.1 Effect of Financial Leverage on Financial Performance

The study sought to establish the effect of Financial Leverage whose proxies were Capitalization mix measured by the debt equity ratio, Degree of Interest Coverage measured by Interest Coverage Ratio and Degree of Asset Coverage measured by Asset Coverage Ratio on Financial Performance as measured by Economic Value Added of Agricultural Co-operative Societies in Kiambu County, Kenya. The discussion is based on the regression results shown on Table 4.8 and 4.9.

The first objective sought to determine the effect of Capitalization Mix on Financial Performance of Agricultural Co-operative Societies in Kiambu County, Kenya. The regression results in Table 4.8, shows that the effect of Capitalization Mix as indicated by Debt Equity Ratio on financial performance as measured by Economic Value Added is negative and statistically significant. These results do not support hypothesis 1 which states that capitalization mix has no significant effect on financial performance of Agricultural Co-operative Societies in Kiambu County, Kenya. The negative sign is in

agreement with the findings of Hosseinzadeh *et al* (2014) and Shahveisi *et al* (2012). However, this result is in inconsistent with studies that recorded a positive effect of debt equity ratio on financial performance as measured by Economic Value Added (Lin & Zhilin, (2008) and Ahmad, Alam and Yameen, (2019). The differences may be traced back to the difference in macro-economic environment in Kenya in comparison with other countries.

The second objective sought to determine the effect of Degree of Interest Coverage on Financial Performance of Agricultural Co-operative Societies in Kiambu County, Kenya. The regression results in Table 4.8 indicate that the effect of Degree of Interest Coverage as indicated by Interest Coverage Ratio on the financial performance measure (Economic Value Added) used in this thesis is positive and statistically significant. These results do not support hypothesis 2 which states that Degree of Interest Coverage has no significant effect on financial performance of Agricultural Co-operative Societies in Kiambu County, Kenya. The positive and significant effect is in agreement with the findings of Enekwe *et al.* (2014) and Kirimi *et al* (2017). This positive effect of Degree of Interest Coverage as measured by Interest Coverage Ratio on financial performance could stem from the theory that a firm with high interest coverage ratio has more earnings available hence better financial health. Such a firm is also not susceptible to increases in interest rate due to its risk profile.

The third objective sought to determine the effect of Degree of Asset Coverage on Financial Performance of Agricultural Co-operative Societies in Kiambu County, Kenya. The regression results in Table 4.8 indicate that the effect of Degree of Asset Coverage as

indicated by Asset Coverage Ratio on financial performance as measured by Economic Value Added is positive and statistically insignificant. These results back hypothesis 3 which states that Degree of Asset Coverage has no significant effect on financial performance of Agricultural Co-operative Societies in Kiambu County, Kenya. The positive sign is consistent with the findings of Dey, Hossain & Rahman, (2018) and Mohamed (2016). However, this result is in disagreement with studies that documented a negative effect of Asset Coverage Ratio on financial performance (Makanga, (2015); Githaiga, 2015).

4.6.2 Moderating effect of Corporate Governance on the relationship between Financial Leverage and Financial Performance

The fourth objective sought to establish the moderating effect of Corporate Governance as indicated by the composite index of Internal Audit and Annual General Meeting on the relationship between Financial Leverage and Financial Performance of Agricultural Co-operative Societies in Kiambu County, Kenya. The regression results shown in Table 4.9 indicate that the relationship between financial leverage and financial performance measures of Agricultural Co-operative Societies in Kiambu County, Kenya is moderated by corporate governance factors. The findings advocate that the presence of corporate governance factors indicated by Internal Audit and Annual General Meeting strengthens the relationship between Financial Leverage and financial performance as measured by Economic Value Added.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This final chapter contains an overview of the findings and conclusions made based on the findings. It also includes policy recommendations to inform and advice the various stakeholders charged with decision making responsibilities and contributions of the thesis to the body of knowledge. Further, it highlights the limitations of the study, and proposes areas for further research.

5.2 Summary

Though the government of Kenya has put in great effort to create a conducive environment for co-operative societies to carry out their business, the sector in Kenya has experienced mixed performance with some firms reporting impressive performance while others perform dismally. The co-operative societies' managers seem to lack guidance on financial leverage decisions which results in the outcome reflected in their financial performance. This study empirically determined the effect of financial leverage on financial performance of Agricultural Co-operative Societies in Kiambu County, Kenya.

The study used explanatory research design. A census of 25 active Agricultural Co-operative Societies that had all the annual and financial reports for the period 2013 to 2017 was taken. Panel data of the Co-operative Societies for the period from 2013 to 2017 was used in the analysis. One performance measure namely Economic Value Added was used to estimate the effect of financial leverage variables namely; capitalization mix, degree of interest coverage and degree of asset coverage on financial performance.

The study carried out descriptive analysis of all the variables under study. The mean value of the financial performance measure (Economic Value Added) was negative. This indicates that on average, agricultural co-operatives in Kiambu County Kenya do not generate value from the funds invested into them. Additionally, the negative mean Debt Equity ratio indicates high risk to shareholders since such co-operative societies have aggressively financed their growth and operations through debt. Further, the positive mean value for Asset Coverage Ratio is an indication that on average, the agricultural co-operative societies have a good asset base. The mean AGM score of 86.4%, indicates that on average most of the co-operative societies held their Annual General meetings during the period under study. On the other hand, the mean Internal Audit Committee (IA) score of 28%, indicates that 72% of the co-operative societies did not have internal audit committees during the period under study.

Firstly, the study sought to determine the effect of capitalization mix, on financial performance of agricultural co-operatives in Kiambu County, Kenya. Using panel regression technique, the study established that debt equity ratio, a measure of capitalization mix, has a negative and significant effect on financial performance as measured by Economic Value Added. The negative sign implies that an increase in Debt Equity Ratio results into a decrease financial performance.

Secondly, the study sought to determine the effect of degree of fixed charge coverage on financial performance of agricultural co-operatives in Kiambu County, Kenya. The study measured degree of fixed charge coverage in terms of Interest Coverage Ratio. The study determined that Interest Coverage Ratio has a statistically significant positive effect on Economic Value Added. This finding validates the estimation that the higher the interest

coverage ratio of a firm, the less burdened by debt expense, hence the better the financial performance.

Thirdly, the study sought to determine the effect of degree of asset coverage on financial performance of agricultural co-operatives in Kiambu County, Kenya. Degree of asset coverage was measured in terms of Asset Coverage Ratio. The study established that Asset Coverage Ratio has a statistically significant positive effect on Economic Value Added. This finding indicates that a co-operative society that has more assets as compared to its liabilities indicates to an investor or lender that it has the capacity to pay back borrowed funds should they not be covered by earnings. Hence, a co-operative society is viewed as less risky if its asset coverage ratio is high in comparison to one whose asset coverage ratio is low.

Lastly, the study sought to establish the moderating effect of corporate governance on the relationship between financial leverage and financial performance of agricultural co-operatives in Kiambu County, Kenya. The study established that corporate governance indicators namely Annual General Meeting and Internal Audit, moderate the relationship between financial leverage and financial performance as measured by Economic Value Added. This finding implies that the presence of corporate governance characteristics may modify the intensity of the effect of financial leverage on financial performance.

5.3 Conclusions

The study determined that debt equity ratio has a negative and statistically significant effect on financial performance (as measured by Economic Value Added) of Agricultural Co-operative Societies in Kiambu County, Kenya. The negative effect leads to the conclusion that the co-operative societies financial performance decreases as financial

leverage (as measured by debt equity ratio) increases. Consequently, the management of Agricultural Co-operative Societies should avoid over-reliance on debt and establish a debt-equity mix capable of improving their financial performance.

On the effect of degree of fixed charge coverage on financial performance, the study determined that interest coverage ratio has a positive significant effect on financial performance as measured by economic value added. This finding leads to the conclusion that although borrowing creates debt and interest payments, it can potentially positively affect the financial performance of a co-operative society if capital investments are considered based on the cost-benefit analysis.

On the effect of degree of asset coverage on financial performance, the study determined that Asset Coverage Ratio has a positive and insignificant effect on the financial performance measure in the study namely economic value added. The study concludes that a good asset base makes a firm attractive for investment. As a result, this places the co-operative society at an advantage position in that, it can maximize borrowing and use the borrowed funds to enhance growth and thus improve its financial performance.

On the moderating effect, the study determined that corporate governance characteristics namely, annual general meeting and internal audit committee moderate the relationship between financial leverage and financial performance as measured by economic value added. This finding leads to the conclusion that the presences of corporate governance factors modify the intensity of the effect of financial leverage on financial performance of Agricultural Co-operative Societies in Kiambu County, Kenya.

5.4 Policy Recommendations

This section presents a number of policy recommendations derived from the results detailed in this study. Firstly, the results show that increase in debt equity ratio has a negative effect on financial performance of Agricultural Co-operative Societies in Kiambu County, Kenya. Based on these results, the study recommends the need to pay more attention to the debt equity mix since a good ratio of the two enhances financial performance. The management of the Agricultural Co-operative Societies can improve the financial performance by formulating an optimum shareholders equity and debt mix strategy. The co-operative societies should also desist from over relying on debts since increase in the debt fraction may increase financial risk, risk of financial distress and bankruptcy and hence poor financial performance. Effort should further be made by management to improve performance by formulating financial policies that are in consonance with shareholder wealth maximization.

Secondly, the study finds a significant positive effect of degree of fixed charge coverage on financial performance of Agricultural Co-operative Societies in Kiambu County, Kenya. The study consequently recommends that the management of Agricultural Co-operatives should consider cheaper finance sources that do not deplete the firms' earnings. High cost of debt can render the Agricultural Co-operative Societies unable to settle their fixed charge obligations as and when they fall due, hence attracting higher interest rates, fines and penalties which eventually impact negatively on financial performance. To this end, the management should create good working relations with financiers so that they can negotiate better credit terms in relation to repayment terms and interest rates. The government should also provide an enabling environment for financial

institutions that finance agricultural activities so that the institutions in return can offer affordable loans to agricultural co-operative societies.

Thirdly, the study found an insignificant positive effect of degree of asset coverage (measured by asset coverage ratio) on the financial performance measure namely economic value added. Due to the positive effect, the study recommends that co-operative managers should maintain a solid asset base by ensuring that the total assets outnumber the liabilities. Notwithstanding the fact that assets can be disposed to off-set debt obligations in the event of a downturn, a good asset coverage ratio is also preferred by lenders and so it improves the borrowing capacity of the co-operative society.

Lastly, the study determines that corporate governance characteristics namely annual general meeting and internal audit, moderate the relationship between financial leverage and financial performance of Agricultural Co-operative Societies. The findings of this study advocate for Annual General Meetings as well as the establishment of Internal Audit committees by Agricultural Co-operative societies to oversight financial reporting processes, internal controls and conformity with stipulated regulations. The study therefore recommends that the management of Agricultural Co-operative Societies in Kiambu County should consider the corporate governance factors when formulating policies on financial leverage in order to enhance financial performance.

5.5 Contribution to Knowledge

This thesis unlike most previous studies, has investigated the relationship between financial leverage and financial performance of Agricultural Co-operative Societies in Kiambu County, Kenya. Previous studies concentrated on the effect of financial leverage on financial performance of other types of co-operatives societies, majorly Savings and

Credit Co-operative Societies (SACCOs). The second contribution is that this study measured financial performance using the Economic Value Added; an estimate of true economic profit. Different stakeholders define financial performance from different perspectives, however, EVA as an investment decision tool gives supplemental information about profitability and wealth creation relative to other ratios, hence it stands out as a sound and superior measure especially for the co-operative model.

The third contribution is that no existing studies have explored the moderating effect of the corporate governance as measured by Annual General Meeting and Internal Audit on financial performance. This research therefore, is important because it provides evidence on the moderating effect of the two corporate governance characteristics on the relationship between financial leverage and financial performance of Agricultural Co-operative Societies in Kiambu County, Kenya. Finally, the review of empirical literature has revealed that most of studies on financial leverage or capital structure decisions for co-operative societies are based on very limited sample and study period. This study therefore, contributes to the existing literature by considering all active Agricultural Co-operative Societies in Kiambu County with complete data for the period from 2013 to 2017.

5.6 Limitations of the Study

Firstly, the current study has omitted other forms of co-operative societies such as SACCOs and Investment Co-operative Societies. Therefore, financial leverage may perhaps affect their financial performance in a different way from agricultural co-operative societies. Hence, the elimination of other forms of co-operative societies could emanate misgivings on the generalizations of the results of the study. Secondly, Kiambu

County has only a small number of agricultural co-operatives as compared to other counties in Kenya; hence the population under study may not represent all agricultural co-operatives in Kenya. Secondary panel data was however used to enlarge the quality and quantity of the information attainable for study to ensure meaningful statistical analysis. The period covered has also been increased in order obtain sufficient firm-year observations. Further, the use of secondary data only, omitted the qualitative aspects of the research.

5.7 Areas for Further Research

This is among the first studies to research on the financial leverage and financial performance of Agricultural Co-operative Societies in Kenya. This study creates ideas for future research especially in Kenyan. First, the study of the effect of financial leverage on the financial performance of other types of co-operative societies such as Savings and Credit Co-operative Societies (SACCOs) and Housing and Investment Co-operative Societies. Future research should investigate the varied models of co-operative societies in this regard.

Secondly, another area for further research is the financial leverage for both listed and non-listed agricultural firms and the effect of these on financial performance. This is an area where studies in the future require to be taken since the capital structure requirements for companies are somewhat diverse from those of co-operative societies. The financial performance can be studied for companies only or comparatively for companies and co-operative societies so as to establish if the present findings are robust to different sample specifications.

Thirdly, since the R^2 was only 15.03 per cent, points to the existence of other factors explaining the financial performance of Agricultural co-operatives separate from financial leverage. Future research should investigate these factors.

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APPENDICES

Appendix I: Introduction Letter

Anne Amondi Omondi

P.O Box 28410- 00217 Limuru.

The Director,

Directorate of Co-operatives, Kiambu County,

P.O BOX 2344-00900,

Kiambu.

Dear Sir/Madam,

My name is Anne Amondi Omondi, a MSc (Finance) student at Kenyatta University. I am undertaking a research titled Financial Leverage and Financial Performance of Agricultural Co-operatives in Kiambu County, Kenya under the School of Business. I would be grateful if you could avail to me the financial statements and annual reports of all the registered Agricultural co-operatives for the years 2013 to 2017 in order to facilitate this study.

The information that you will provide will be kept confidential and used only for the purpose of this study. At the conclusion of the study, a summary of the results and associated reports will be made available.

Should you have any queries, please direct them to the undersigned.

Yours faithfully,
Anne Amondi (Adm. No. D58/CTY/23589/2013)
Mobile Number: 0722 504891 Email: anneamondi5@gmail.com

Appendix II: Agricultural Co-operatives in Kiambu – April 2018

Sub-County	Agricultural Co-operatives
Gatundu North	1. New Gatukuyu
	2. Nyaka Farmers Co-operatives
Gatundu South	3. Gitu Coffee
	4. Ichaweri Coffee
	5. Gathage Coffee
	6. Kimaratia Coffee
	7. Nembu Coffee
	8. Muhara Coffee
	9. Riitho Coffee
Githunguri	10. Githunguri Dairy
	11. Nyakiri Coffee
	12. Komothai Coffee
Kabete	13. Kabete Dairy
	14. Karai Coffee
	15. Muguga Coffee
Kiambaa	16. Kiambaa Coffee
	17. Kiambaa Dairy
Kiambu	18. Ndumberi Coffee
	19. Ndumberi Dairy
Limuru	20. Limuru Dairy
	21. Muguga Pyrethrum
Lari	22. Kiriita Dairy
	23. Gatamaiyu
Kikuyu	24. Gikambura Dairy
	25. Kikuyu Dairy
Juja	None
Thika	None
Ruiru	None

Source: State Department of Co-operatives, Kiambu County, 2018

Appendix III: Secondary Data Collection Sheet

Data Collection Form No.

Co-operative Society Name

Data from Financial Statements and Annual Reports Obtained From the State Department Of Co-operative Office in Kiambu

	2013	2014	2015	2016	2017
Income attributable to share holders					
Increase in Equity equivalents					
Adjusted Net Income					
Interest payments after tax savings					
NOPAT					
Equity					
Debt					
Capital					
Rate of Return					
Dividend rate paid					
Cost of Capital					
ECONOMIC VALUE ADDED					
Net Operating Margin					
Other Income					
Other expenses					
Sales					
ASSET COVERAGE					

	2013	2014	2015	2016	2017
RATIO					
Non-current Liabilities					
DEBT EQUITY RATIO					
Earnings Before Interest and Taxes					
Interest Expense					
INTEREST COVERAGE RATIO					
Financial Transparency There is an audit committee Yes = 1 No = 0					
Governance Transparency There was an AGM Yes = 1 No = 0					

Appendix IV: Research Permit

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349,3310571,2219420
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Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/21993/29606** Date: **12th April, 2019**

Anne Amondi Omondi
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Financial leverage and financial performance of agricultural Co-operative Societies in Kiambu County, Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Kiambu County** for the period ending **12th April, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Kiambu County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kiambu County.

The County Director of Education
Kiambu County.

Appendix IV: Diagnostic Test Results

Table A. 1: Jarque-Bera Test for Normality Test

```
. sktest myResiduals

                    Skewness/Kurtosis tests for Normality
                                                              ------ joint ------
    Variable |        Obs  Pr(Skewness)  Pr(Kurtosis) adj chi2(2)    Prob>chi2
-------------+-------------------------------------------------------------------
 myResiduals |        125      0.0000        0.0000       73.47          0.0000
```

Source Study Data (2019)

Table A. 2: Breusch-Pagan Test for Heteroscedasticity Results – EVA as dependent Variable

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of EVAReturn

         chi2(1)      =    69.19
         Prob > chi2  =   0.0000
```

Source: Study Data (2019)

Table A. 3: Durbin Watson Test Results for Autocorrelation – EVA as Dependent Variable

```
. regress EVAReturn ACRL DER ICR AGM IA

      Source |       SS           df       MS      Number of obs   =       125
-------------+----------------------------------   F(5, 119)       =      4.39
       Model |  117.015512         5  23.4031024   Prob > F        =    0.0010
    Residual |  633.695252       119  5.32517019   R-squared       =    0.1559
-------------+----------------------------------   Adj R-squared   =    0.1204
       Total |  750.710764       124  6.05411907   Root MSE        =    2.3076

------------------------------------------------------------------------------
   EVAReturn |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        ACRL |    1.225978    .632043     1.94   0.055    -.0255297    2.477487
         DER |   -.3165986   .1641442    -1.93   0.056    -.6416205    .0084233
         ICR |    1.860578   .8405344     2.21   0.029     .1962363    3.524921
         AGM |   -.4920096   .8270201    -0.59   0.553    -2.129592    1.145573
          IA |    .3975745   .4901292     0.81   0.419    -.5729303    1.368079
       _cons |   -7.391538   2.220973    -3.33   0.001    -11.78929   -2.993791
------------------------------------------------------------------------------

. dwstat

Durbin-Watson d-statistic(  6,   125) =  .9079762
```

Source: Study Data (2019)

Appendix V: Testing for Random and Fixed Effects

Table A. 4: Random Effect Test Results for EVA

```
. xtreg EVAReturn ACRL DER ICR AGM IA, re

Random-effects GLS regression                   Number of obs     =       125
Group variable: COOP                            Number of groups  =        25

R-sq:                                           Obs per group:
     within  = 0.0212                                         min =         5
     between = 0.1901                                         avg =       5.0
     overall = 0.1328                                         max =         5

                                                Wald chi2(5)      =      5.18
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.3949

------------------------------------------------------------------------------
   EVAReturn |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        ACRL |   .8099707   .5162047     1.57   0.117    -.2017718    1.821713
         DER |  -.1153232    .158017    -0.73   0.466    -.4250308    .1943844
         ICR |   .3904279   .5714598     0.68   0.494    -.7296128    1.510468
         AGM |   .0135805   .7267371     0.02   0.985    -1.410798    1.437959
          IA |   .4280383   .9297919     0.46   0.645     -1.39432    2.250397
       _cons |  -3.947963    1.75896    -2.24   0.025     -7.39546   -.5004657
-------------+----------------------------------------------------------------
     sigma_u |  1.9615383
     sigma_e |  1.3126094
         rho |   .69070642   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. estimate store re
```

Source: Study Data (2019)

Table A. 5: Fixed Effect Test Results for EVA

```
. xtreg EVAReturn ACRL DER ICR AGM IA, fe
note: IA omitted because of collinearity

Fixed-effects (within) regression               Number of obs      =       125
Group variable: COOP                            Number of groups   =        25

R-sq:                                           Obs per group:
     within  = 0.0222                                         min =         5
     between = 0.1854                                         avg =       5.0
     overall = 0.1198                                         max =         5

                                                F(4,96)            =      0.55
corr(u_i, Xb)  = 0.2699                         Prob > F           =    0.7025

------------------------------------------------------------------------------
   EVAReturn |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        ACRL |   .6605594   .5398829     1.22   0.224    -.4110997    1.732219
         DER |   -.037133   .1748604    -0.21   0.832    -.3842282    .3099621
         ICR |   .2175646    .578535     0.38   0.708    -.9308183    1.365947
         AGM |   .0964659   .7725239     0.12   0.901    -1.436982    1.629914
          IA |           0  (omitted)
       _cons |  -3.32529    1.776657    -1.87   0.064    -6.851926    .2013457
-------------+----------------------------------------------------------------
     sigma_u |  2.1101093
     sigma_e |  1.3126094
         rho |   .72100363   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(24, 96) = 11.41                     Prob > F = 0.0000

. estimate store fe
```

Source: Study Data (2019)