CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF DAIRY CO-OPERATIVE SOCIETIES IN NAKURU NORTH SUB COUNTY, KENYA

Fred. C. Obande Buluma ✉

Lecturer, School of Business, Laikipia University, Kenya

fcbuluma@yahoo.com

James Kung'u

Lecturer, School of Business, Laikipia University, Kenya

ndiranguj@yahoo.com

Muchemi Alex Gichohi

MBA candidate, Laikipia University, Kenya

mualex2013@gmail.com

Abstract

Research on financial performance of dairy cooperatives societies in Kenya in general has received less attention from scholars in developing countries. Dairy Cooperative Societies in Kenya do not operate on country's securities exchange and therefore evaluating performance and market values of dairy cooperatives is not easy. On the other hand how well dairy cooperatives perform financially in addition to how they create value from their individual investments is not as easily determined as in the case of listed companies. Using a census research design this study established the effect of capital structure on financial performance of dairy cooperative societies in Nakuru North Sub County. The study employed Modigliani and Miller and pecking order capital structure theories to establish the relationships. A population of ten (10) registered dairy co-operatives in operation since 1967 were studied using secondary data. A multiple regression analysis was used to analyse the relationship between capital structure and financial performance of cooperative societies. Capital structure only explained 0.01% of the variance in Return on Assets in capital structure. There was however a weak linear

non-significant relationship between capital structure and return on assets in the dairy cooperative societies in Nakuru North Sub County, Kenya. The study findings may be useful to dairy cooperative societies' management and policy makers in the dairy cooperative sector.

Keywords: Capital Structure, Financial Performance, Dairy Cooperatives, Modigliani Miller, Pecking Order

INTRODUCTION

One of the most intricate issues for dairy cooperative societies in a developing country are those that concern financial management in relationship to the capital structure and their ability to compete profitably within the same market(Oustapassidis, 1988). The major financial management problem for dairy cooperatives is to determine the excellent achievable results in terms of competitiveness in terms of profit margins. This is one of the most critical problems for any dairy cooperatives which have dual objectives of maximizing profits and not to consider profit as another endeavour (Oustapassidis, 1988). Some small size dairy cooperative societies have experienced massive pressure from large cooperative societies that have sufficient finance investments and capable of undertaking expensive competitive strategies. Their strength is based on the strength that there are many other dairy cooperatives offering the same products while exposed in the same market conditions (Oustapassidis, 1988).

Capital Structure also referred to as financial structure is a mix of debt and equity capital that is maintained by a dairy cooperative and is important as it relates to the way a firm meets stakeholders' expectations. Capital structure decisions play a significant role in determining a firm's performance as firms must adopt best financial practices with respect to capital structure mix decisions. Many studies recognize capital structure mix decisions as a major managerial decision because it influences the shareholder return and risk (Pandey, 2002). The capital structure mix is an effort by the management to maximize shareholders wealth alongside the change in their cost capital and the market value of the dairy cooperatives (Abor, 2007).

Capital structure has some resulting costs based on the mix where dividends and interest payments on debt capital must be considered by the management to suit the economic conditions at the time. These are some of the major premises under which dairy cooperatives must strive to achieve the optimum capital structure in order to be in a position to fund both the necessary investments and strategies which will render them competitive (Helmberger & Hoos, 1962; Oustapassidis, 1988). If this is not done then such dairy cooperatives will not be able to survive in the long run within markets where competition and the requirements for competitive strategies, investment in and application of new technologies become vital.

Empirical work on capital structure in emerging markets like Kenya has been limited to listed companies and very little with respect to dairy cooperative societies. To address issues of capital structure by dairy cooperative societies there is a need to address the way debt capital is sought and used to finance business expansion. Firms choose proportions of debt and equity in financing its assets by dividing up the cash flows among investors. On the other hand dairy cooperatives as investors can create or avoid any leverage. It is in this context that this study uses Modigliani and Miller 1958 prepositions to establish if leverage has any effect on the dairy cooperative societies' market value and financial performance.

Measure of dairy cooperatives financial performance is measured in terms of accountability for its policies, operations and activities quantified for an identified period in financial terms (Adams M, 2000). It is a skewed measure of how well a dairy cooperative can use its assets to generate revenues. Studies on dairy cooperatives find that financial performance can be improved through value addition to the milk by improving on its processing, packaging and distribution which if otherwise can result into their poor financial performance (Karanja, 2002). The Post-Liberalization era in Kenya indicate that there are factors that could influence poor performance of dairy cooperative societies particularly lack of training and unpreparedness by dairy cooperative societies to modernize and embrace change, poor marketing strategies and competition from other stakeholders, lack of essential services and poor management and leadership.

Waddock and Graves (1997) used return on assets (ROA), return on equity (ROE) and return on sales (ROS) as the three important accounting ratios in measuring firm financial performance. The authors indicate that when firm size, risk and industry as major characteristics and control variables are used in determining firm financial performance is effectively established. Return on assets (ROA) is a widely used measure of financial performance and can be influenced by many aspects such the nature and type of assets in the case of agricultural firms (Barry et al., 1995). Many authors have measured financial performance by return on assets (ROA), return on equity (ROE) and return on sales (ROS) in studying the relationship between corporate social responsibility (CRS) and financial performance as well (Mauget, 2008)

For purposes of this study, dairy cooperative societies' financial performance was measured by return on assets (ROA) and ROE. Return on assets (ROA) is ratio or measure used to evaluate the profitability of a dairy cooperative societies'. A higher ratio means a higher profitability of a dairy cooperative societies'. It is calculated as net income by total assets. ROE is the ratio of net income by book equity; the higher the ratio, the greater the rate of return investors is (Coskum & Sayilir, 2004). This study applied these measures to establish the effect

of capital structure on the financial performance of dairy cooperative societies in the Nakuru North sub County.

The financing decisions of any firm vary from country to country due to existing institutional and legal requirements alongside macroeconomic factors existing at the time in such countries. Most of the studies in finance literature on the capital structure and its effects on financial performance exist in the context of developed and industrialized nations (Kostyuk, 2011). On the other hand, not many studies have critically examined international worldwide comparisons of capital structure effects on dairy cooperatives performance let alone in the context of developing countries (Wald, 1999; Demirgue-Kunt & Huizinga, 1999). Much of the empirical studies have acknowledged firm distinctiveness, macroeconomic variables and country institutional issues as determining factors of capital structure and financial performance of firms but not dairy cooperative societies (Booth, Aivazian, Demirguc- Kunt, & Maksmivoc, 2001).

Though capital structure literature is stuffed with studies in the developed and selected developing countries, there is a deficiency of similar studies from developing countries on how the growth in the financial structure of a firm affects financing decisions of dairy cooperative firms. This provides scope for further empirical studies on dairy cooperatives in developing countries especially in Africa which have limited financing avenues. Financial sector reforms have been carried out in developing countries and particularly in Kenya purposely to establish better means of mobilizing funding for investment and economic growth so that vision 2030 for the country can be realized. The results of these reforms particularly related to the devolution of the agricultural sector have received a clean bill of health by the county governments where dairy farming is popularly practiced. This study therefore sought to explore the effects of capital structure in view of the financial market reforms and the devolved agriculture sector for its impact on capital structure and performance of dairy cooperative societies in the country.

Statement of the Problem

The most complex issues for dairy cooperative societies' growth in developing countries are those that concern under-capitalization and financial management problems within dairy cooperatives in developing countries (Ortmann, 2007).The capital structure of dairy cooperative societies in general is inherently fascinating because it illuminates a distinguishing difference between cooperatives and other forms of business organizations like listed firms. Likewise some dairy cooperative societies operate as member user-owned rather than as investor-owned firms (Copac, 1995). In Nakuru North Sub County, ten (10) registered dairy co-operative societies have existed since 1967 but to date only one (1) remains active in terms of operations. The

other nine dairy co-operative societies have been inoperative and have been declared insolvent by the commissioner of cooperatives as from the year 2015. This was despite various financial interventions by the government through the ministry of cooperative development to salvage them. How these cooperatives having operated for more than ten years have been declared insolvent in 2015 despite having operated profitably at for some time formed the basis of this study. This study therefore investigated if capital structure has any effect on the financial performance of the dairy cooperative societies in Nakuru North Sub County.

Objective of the Study

The specific objective of the study was to examine the effect of capital structure on financial performance of dairy cooperative societies in Nakuru North Sub County.

Research Hypotheses

H_1: The effect of capital structure on financial performance of dairy cooperative societies in Nakuru North Sub County is not significant.

THEORETICAL REVIEW

This study applied capital structure theories namely Modigliani-Miller and pecking order theories. The Modigliani and Miller irrelevance proposition indicates that both debt and firm value are reasonably endogenous and driven by other factors such as profits, collateral and growth opportunities (Luigi & Sorin, 2009). Luigi and Sorin (2009) argued that Modigliani and Miller theorem does not provide a realistic description of how firms finance their operations but provide a means of finding reasons why financing may matter. Mauget (2008) posits that profitability indicates the ability of an entity to generate profit such that when an organization generates high profits its value will rise. An increased value of a dairy cooperative society increases the investors desire to contribute capital in such a cooperative. Modigliani and Miller states that firm value is determined by firm's financing decisions using both debt and equity capital and that higher profit creates greater likelihood of more dividends that will be shared among members to create increased firm value and help an increased demand for such a firms shares.

Pecking Order Theory was developed by Myers and Majluf (1984), the theory affirms that internal funding is more preferred to external funding which can only be used as the last resort by most firms'. According to this theory, dairy cooperatives ought to initially use internal funds before resorting to debt capital, and, in case it requires more funding, then equity capital will be resorted to. Therefore, firms which are very profitable and generate sufficient cash flows

will use less debt. The theory emphasizes that firms would not prefer debt over equity and as a result do not have predetermined or optimum debt to equity ratio due to information asymmetry. The "pecking-order theory" essentially states that the a dairy cooperative society will resort to debt financing, rather than issuing equity, only when internal cash flow is not sufficient to finance investment expenditure (Myers & Majluf, 1984).

Adedji (1998) criticizes the pecking order theory in that the suggestion that it is only the unavailability of internal funds that motivates firms to raise funds externally can be questioned. This is because it ignores the effects of institutional factors that might affect the firm's choice of financing instruments such as the level of interest rate, borrower-lender relations and the government intervention. Baskin (1989), Allen (1993) and Adedji (1998) argue that transaction and information cost are not the only factors that might discourage the use of external financing in general and for equity in particular but also conclude that control consideration may make firms reluctant to issue equities. This is because of their effects on the existing balance of management control. Frank and Goyal (2009) in their additional analysis of the risk firms, recommended that it should be expected that firms with volatile equity shares are those which are very risky and such firms may suffer more from adverse selection in the securities markets. Unfortunately dairy cooperatives do not transact on the securities market in Kenya Therefore, according to the pecking order theory, such listed firms become riskier to invest in because of their volatile securities that would predict a higher debt-financing level.

EMPIRICAL LITERATURE REVIEW

Capital Structure and Financial Performance of Dairy Cooperative Societies

A study on capital structure by the top world co-operative societies tested the traditional theory of co-operative capital. In general, the findings of this study provided a key milestone on cooperative organizations financial performance. The co-operative sector financial statement data was collected for the WCM Top 300 co-operative and mutual enterprises in the 2016 ranking and the findings did not support the traditional theory of co-operative capital (WCM, 2016). This study indicated that a cooperative sector with good capitalization, in financial equilibrium and with sufficient profitability grew.

Using the data collected the largest co-operatives only which were small in number demonstrated less problems of raising capital compared to other smaller counterparts (WCM, 2016) There were however evident differences between various sectors, but not across different regions, i.e. Asia and the Pacific, Americas, and European regions. The kind of policy implications emerged from this study and especially from the analysed data collected which

included; the ability of the co-operative sector to create policies for the development of new capitalization instruments (WCM, 2016).

A study in Guatemalan showed that dairy cooperatives depended to a high degree on members finance and this was associated with stagnation in dairy cooperative development. In one cooperative, there was a low proportion of member equity compared with non-member debt capital and such dairy cooperatives were related to an aggressive growth oriented strategy in the market (Committee for the Promotion and Advancement of Cooperatives, 1995). Conversely, the dairy cooperatives with a higher degree of member-owned capital were less dynamic and this indicated a reverse relationship in certain (perhaps temporary) cases the association of stagnation even with high quality capital (CoPAC, 1995).

The study further indicated that in theory, increased member equity capital involvement in cooperatives helped to build up each member's "financial stake" in the group enterprise which served as a type of "glue," binding members' together and strengthening group commitment and solidarity. This was essential in obtaining cooperative economies-of-scale, increased member capital to help improve management accountability, led to better and more efficiently-provided member services and improved financial performance (CoPAC, 1995).

A report from India cooperative development indicated that each type of economic activity has its own "financial fingerprint" which is a fundamental building block in corporate finance and banking, although it has often been ignored in development finance in favour of formulas such as 80% debt and 20% equity for all deals across the board listed firms (Sidhu & Sukhpal, 2003). The studies confirm that there are distinct fingerprints consisting of different proportions of non-current assets to working capital and correspondingly different types of financing by origin, permanence and return on investments (Sidhu & Sukhpal, 2003). Access to non-member finance also influences finance structure, as do collective decisions regarding funding and risk management. In essence paddy cooperatives in India relied on member funds more than non-paddy cooperatives which reflected the capital requirements of rice mills and availability of government refinancing of the credit operations that dominate sample non paddy cooperatives (Sidhu & Sukhpal, 2003.

There are varied study findings on how dairy cooperatives provide reasons of a higher reliance on debt capital in some cases and a lower reliance in others hence making the question of relative debt an empirical exercise. The empirical findings about capital structure and financial performance of dairy cooperative societies are too mixed. Parliament, Lerman and Fulton, 1990, studied capital structure in a sample of dairy firms' and found that debt to asset ratios was not significantly higher for cooperatives relative to investor owned firms' (IOFs). A later study by these same authors found that dairy cooperatives initially financed about half of investment in

assets with equity and later used more long-term debt financing (Parliament, Lerman, & Fulton, 1990). This study further established that most IOF cooperative societies drew its capital base from the contribution of members or through credit from banks.

In Nigeria, one the problems among cooperatives is lack of adequate capital and proper financial management. Adesina (1998) identified poor patronage, overdue loans, over population and the failure to put cooperative education and uphold cooperative principles as major problems of cooperative management in Nigeria. There is also the problem of financial performance records of all types of cooperatives.

Through cooperatives, Barton (1989) identified that user-benefits existed in the form of patronage refunds, more favourable prices, services that would otherwise be unavailable, and access to markets and assured sources of supplies. In that regard the study added that the primary purpose of any cooperative was for the economic benefits of members. Parnell (1999) challenged Barton's definition by considering cooperatives as both "people-centered" and "capital-centered. These factors give an insight into a capital structure of dairy cooperatives which are also obliged to issue shares as an alternative basis for liquidity, the most obvious being trading of shares among farmer-members. Increase in demand for these shares will only be realized if the dairy cooperatives have a good financial performance record.

The capital structures for dairy cooperatives are uniquely different from that of the limited liability firms. Shadbolt (2014) provides the capital structure of a dairy cooperative society in Canada have the following main features. The farmers create a derivative equity instrument called Shareholders' Fund that can be held by the public with identical economic rights to a share. The shareholders are then able to sell the economic rights of their shares to these public investors through the fund, subject to limits imposed by the main dairy cooperative.   If those shares backed the milk production of the farmer, the transaction would not reduce ones voting rights and the farmer would continue to exercise voting rights in respect of that production by the recording of a 'voucher' in the main cooperative register.

The Fund issues a unit to the public for each share for which economic rights are purchased. The unit is then listed, and the proceeds from issuing the unit fund the purchase of economic rights from the farmer. The process works in reverse if a farmer purchases a unit and costlessly swaps it for a share through the Shareholders' Fund. This arrangement has contributed to an improved financial performance of the Dairy cooperative.

Most of Canada's dairy cooperative management use equity finance, the issue of voting rights, being the residual rights of control and have been retained with members even after the sale of the economic rights to their shares. Residual return rights do not change apart from the fact that shares will be valued by the farmer market and unit market rather than through a

predetermined valuation process. A collateral benefit of the unit market is that a publically tradable will be subject to external control mechanisms provided by financial analysts scrutinizing investments as being necessary for optimal and efficient investment portfolios (Holmstrom, 1999; and Coque as cited in Shabolt, 2014, 2008; cited in Arcas-Lario et al., 2014). The cooperative is arguably better analyzed and the issue of information asymmetry better resolved under the new structure than previously. Nonetheless, the language of financial markets is unfamiliar to many farmer members so on-going education has been found necessary to increase participation in, and understanding of, the trading platforms.

In Kenya the practice of smallholder dairy commercialization programme (SDCP) appraisal recognizes the fact that the dairy cooperatives are not as financially organized as those in Canada. Those in Kenya are characterized by poor rural infrastructure as one of the main constraints to economic development of rural areas in Kenya. A number of factors impede the smallholder dairy farmers" achievement of the industry's full potential: inadequate access to markets; poor quality of feeds and feeding regimes; seasonal fluctuations in forage availability; inefficient producer organizations; and poor rural infrastructure (Rural Infrastructure Study, 2010).

Bekkum and Dijk (1997) study found that there was a growing interest in creating new financial solutions challenging the traditional way of organizing dairy cooperatives that have not succeeded in becoming sufficiently viable in competitive food industries. The study emphasised that there is need to improve capital structure and enable cooperatives to finance huge in-vestments in intangible assets. Countries like Ireland, The Netherlands, and Austria have some cooperatives transformed into joint stock companies with both farmer-members and private investors constituting their shareholders and other innovations in Europe and North America which have the introduction of tradable shares (Bekkum and Dijk, 1997).

A number of studies have established a no relationship between the level of debt capital and financial performance of firms. These findings are consistent with that of Modigliani and Miller (1958) capital structure irrelevancy theory. Krishnan and Moyer (1997) established a no significant correlation between debt level and financial performance of firms'. This study used four different measures of corporate performance namely Return on equity , Return on invested capital, pre-tax operating profit margin and market return on the stock. The result provided a weak hold for both the static tradeoff theory and the pecking order theory.

Studies by Marsh (1982) and Walsh and Ryan (1997) found that firms that operated with a high proportion of non-current assets had the benefits of using more debt capital. On the other hand, this study also found no significant relationship between the debt capital within the capital structure and financial performance which was consistent with Miller's findings based on the

advantages of corporate tax. That firms using debt capital would enjoy offsetting the personal income tax, implying leverage irrelevancy to any firm. (Miller, 1977)

Larger dairy cooperatives tend be to more diversified and in effect enjoy a reduction in business risks for each amount of shilling on the assets applied in the production of goods and services. On the contrary, smaller business dairy cooperatives have a higher likelihood of collapse than larger cooperatives. Secondly, larger dairy cooperatives organizations are more efficient at documenting credit worthiness and therefore have the ability of providing better and more current information to providers of finance. Thirdly, larger dairy cooperatives may enjoy economies of scale and earn rather additional income and experience larger marginal tax rates, resulting into relatively superior tax offsets of assets if tax shields are obtainable. Based on the above narrative and reasons, a positive relationship found to exist between dairy cooperatives size and amount of debt capital that a dairy cooperatives can use (Castanias 1983).

Dairy cooperatives growth is also a determinant of capital structure just as mature industries have been characterized in various finance literature as those with relatively inadequate opportunities for growth especially in sales. In other words the finance literature infers that growth of dairy cooperatives is characteristically related to the acquisition, diversification of other dairy cooperatives or changes occurring in demand. Related to capital structure, it can be deduced that dairy cooperatives with high growth opportunities would be likely to maintain lower leverage levels and safeguard their flexibility to both finance future growth opportunities.

The operations of dairy cooperatives in Kenya take the form of milk intake, milk sales, and farmer payments however; the bottom line of their sustained success is profitability. Profitability and financial performance of dairy cooperatives in Kenya is always a difficult issue to assess properly, especially with the cooperative type of dairy farmers cooperative societies (DFCSs). This is because many dairy cooperatives according to the Kenya market-led dairy programme (KMDP) lack strong and forensic auditing of their books by the Department of Cooperatives, which is responsible for overseeing their operations and determining their financial performance (KMDP, 2016).

According to the Cooperative Societies Act (National Council for Kenya Law Reporting, 2012), cooperatives are not supposed to declare profits in their financial statements but are expected to pay out end-of-year profits or retained earnings to the members. As a result, of this law dairy cooperatives are tempted to invest hastily in projects that have not undergone proper feasibility analysis (KMDP Status Report, 2016). Eventually this eats into the core business of the CBEs, thereby negatively affecting their cash flow and their ability to meet debt demands. This remains a challenge for sustainability of these cooperatives, especially in terms of business

expansion and mitigation of unforeseen risks (The Kenya Market-led Dairy Programme reports (KMDP) Status Report, 2016)

RESEARCH METHODOLOGY

Research Design

This study adopted a census design for an in-depth focus and an ability to keenly examine the effects of capital structure and financial performance of all the ten dairy cooperative societies in Nakuru North Sub County. Panel data consisting of dairy cooperatives financial statements and reports for a ten year period from 2006 to 2015 was used to analyse their performance. Panel data analysis was used in the study because it enabled studying capital structure for dairy cooperatives within Nakuru North Sub County annually over a ten year period. Use of panel data analysis endowed regression analysis with both a spatial and temporal dimensions as well as controlling for omitted (unobserved or mismeasured) variables (Wooldridge, 2002).

Financial performance data was established from the financial statements which were reviewed to determine the return on assets (ROA) and returns on equity (ROE). The reliability of the instruments were evaluated through Cronbach's alpha which measures the internal consistency and to describe the reliability of factors extracted from questionnaires where a coefficient of 0.91 was recorded and this indicated a high consistence and therefore preferred (Cronbach and Shavelson, 2004).

The study used ROA and ROE to measure the dairy cooperative societies' financial performance. ROA and ROE are the most popular value based measures of financial performance (Habbash et al., 2014; Taiwo Adewale & Adeniran Rahmon, 2014). ROA was used to determine a dairy cooperative societies' growth over the period under study while ROE compares one dairy cooperative societies' profitability against the other dairy cooperative societies' profitability for the same period. ROA and ROE are frequently used by analysts and investors who perceive that the higher return on equity and assets, the better the financial performance of the firm (Al-Matari et al., 2014; Habbash & Bajaher, 2014; Vo & Nguyen, 2014). The data obtained on the capital structure and financial performance was analyzed using descriptive statistics (mean, standard deviation, skewness and kurtosis). Mean scores were computed for real values. Regression analysis and Pearson's Product Moment Correlation analysis was used to establish the nature and magnitude of the effects between capital structure (independent variable) and Financial Performance (dependent variable). The study employed step wise and multivariate regression analysis to measure the effects of capital structure on financial performance.

Data was analysed in the following stages:

Step one; $Y = \beta_0 + \beta_1 X_1 + \varepsilon$………………………………………………………….…….. (1)

Y is a composite of dairy cooperative society performance as measured by return on assets; β_0 is a constant, β_1 regression coefficient while Xwas equity capital component from the financial statements. A random error term ε will account for unexplained variations in the model.

Step two; $Y = \beta_0 + \beta_1 X_1 + \varepsilon$………………………………………………………….…….. (2)

Y is a composite of dairy cooperative society performance as measured by return on equity; β_0 is a constant, β_1 regression coefficient while X was equity capital component from the financial statements. A random error term ε will account for unexplained variations in the model

The coefficient of determination, R squared, measure was used to test the significance of the regression model in explaining the relationship between capital structure and financial performance. Using a correlation matrix, P-Value and the t-test was used to test the individual significance of the predictor variables and to check on multi-collinearity that is if there was a strong correlation between the predictor variables (Cooper & Schindler, 2003). The data was analysed using the R^2 in the regression analysis such that a high R^2 provides a sufficient explanation between the two variables. Consequently a step wise regression was applied to establish the moderating effects.

ANALYSIS, FINDINGS AND DISCUSSION

To Examine the Effect of Capital Structure on Financial Performance of Dairy Cooperative Societies in Nakuru North Sub County

The study examined the effect of an independent variable (Equity and Debt capital) on a dependent variable (Financial Performance) as measured by return on assets and return on equity. In table 1 below, these variables were involved to study the individual differences or situational conditions that influence the strength of the relationship between a predictor (capital structure) and an outcome (financial performance).

Table 1: Model Summary[b] for Return on Assets

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.026[a]	.001	-.020	32.575473	.001	.032	2	97	.968

a. Predictors: (Constant), DEBT, EQUITY   b. Dependent Variable: Return on assets.

The above table indicates the coefficient of correlation between the capital structure (Equity and Debt capital) and return on assets.

The correlation is r = .026, the R² statistic above indicated that 0.01% of the variance in return on assets is explained by changes in capital structure ("explanatory variable"). The adjusted R^2 is 0.001 meaning that only 0.1% of variance of return on assets is accurate by the capital structure (Equity and Debt capital). However, the remaining 99.9 % of variance with return on assets is attributed to other factors. The R value equal to .026 represents a weak linear relationship between capital structure and return on assets in the dairy cooperative societies. The R^2 equal to .001 is very small indicates that only 0.1% of the variation in return on assets in dairy cooperative societies can be explained by return on equity in the model. 99.9% variations of return on equity in the dairy cooperative societies cannot be explained by return on assets. The p value equal to .968 indicates that capital structure does not significantly influences the return on assets of the dairy cooperative societies in Nakuru north sub county, Kenya

The statistical finding above where capital structure has a very insignificant explanation on financial performance is consistent with that of Lerman and Parliament's (1990) who found that debt to asset ratios were insignificantly higher for cooperatives. It is also consistent with the later study where they also found that cooperatives initially financed about half of investment in assets with equity and later used more long-term debt financing (Lerman and Parliament, 1993).

Table 2: ANOVA[a] for Return on Assets

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	68.431	2	34.215	.032	.968[b]
1	Residual	102932.657	97	1061.161		
	Total	103001.087	99			

a. Dependent Variable: Return On Assets
b. Predictors: (Constant), DEBT, EQUITY

The F-test through ANOVA was used to test whether the independent variables simultaneously had a significant effect on the dependent variable Return on Assets. This also tested whether the overall regression model is a good fit for the data.

The table shows that the independent variables (Debt and Equity) do not statistically significantly predict the dependent variable return on assets F (2, 97) = 0.032, p>.0005 (i.e., the regression model is not a good fit of the data). Since P-Value is greater than (.05); the null hypothesis is accepted that there is no significant effect of capital structure (debt and equity) on financial performance as measured by return on assets.

An examination with ANOVA (F–value) indicates that the data does not explain most possible combination of predictor variables that could contribute to the relationship with the dependent variables. For model 1- F value is 0.032. However, the corresponding F Value is

significant in respect to their consequent values. However, it should be noted here that there may be some other variables which can have an impact on financial performance, which need to be studied.

The above findings are not consistent with the findings of Marsh (1982) and Walsh and Ryan (1997) that firms that operated with a high proportion of fixed assets had the benefits of using more debt capital. However, the study is consistent with that where they found no significant relationship between the debt capital within the capital structure and financial performance. Based on the theory robustness, the study was inconsistent with Miller's findings the firms' enjoyed advantages of corporate tax if they used debt capital and that they would enjoy offsetting the personal income tax, implying leverage irrelevancy to any firm (Miller, 1977). The findings were that most of these dairy cooperative societies did not use debt capital in their operations in the years studied.

In real perspective, the dairy cooperative societies would be using other variables that could also be studied as suggested by Charles (2005) on performance of dairy cooperatives in the United States of America. Additionally, Charles (2005) found that the social networks had effect on financial performance of dairy co-operatives.

Table 3: Return on Assets Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.595	3.469		1.325	.188
	EQUITY	3.471E-007	.000	.014	.135	.893
	DEBT	4.617E-006	.000	.019	.182	.856

a. Dependent Variable: RETURN ON ASSETS

Table 3 above shows that that the entire independent variable (capital structure) p- values for equity and debt are greater than 0.05 meaning that nothing significant can be revealed by the model. The standard errors of the regression coefficients found were 3.469. The P values for debt and equity are more than (, 05) which therefore accepted the null hypothesis and alternate hypothesis rejected. There is no statistically significant effect of capital structure (Debt and Equity) and financial performance as measured by return on assets.

The standardized beta of 0.014 which represents the relative contribution equity of variable in influencing Return on Assets was positive. The standardized beta of 0.019 which represents the relative contribution debt capital variable in influencing Return on Assets was positive.

Table 4: Model Summery for ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.281[a]	.079	.060	7.533589	.079	4.163	2	97	.018

a. Predictors: (Constant), DEBT, EQUITY
b. Dependent Variable: ROE

The above table indicates the coefficient of correlation between the capital structure (Equity and Debt capital) and ROE. The adjusted R^2 is 0.060 meaning that only 0.6% of variance of ROE is accurate by the capital structure (Equity and Debt capital)   However, the remaining 94% of variance with ROE is attributed to other factors. The P value is more than (.05) and the null hypothesis is accepted. There is no statistically significant effect of capital structure (Equity and Debt) on financial performance as measured by ROE.

The above finding is consistent with that of Barton (1989) who found that user-benefits existed in the form of patronage refunds, more favourable prices, services that would otherwise be unavailable in addition to access to markets and assured sources of supplies. Other issues that the study reported are that Dairy cooperatives ought to issue shares as an alternative basis for liquidity. Management of Dairy Cooperatives must always strives to obtain the best financing mix since the use of external funds affects the return and risk of shareholders. Consequently, any increase in the return on equity funds often increases risk.

Table 5: Coefficients' for ROE

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.804	.802		2.249	.027
	EQUITY	1.166E-006	.000	.195	1.956	.053
	DEBT	9.752E-006	.000	.166	1.667	.099

a. Dependent Variable: ROE

Unstandardized coefficients indicate how much the dependent variable varies with an independent variable when all other independent variables are held constant. The unstandardized coefficient, B for Equity is equal to 1.166E.006 which means that for each increase in equity there is a increase in ROE of 0.0000001166 shillings per year. Likewise the unstandardized coefficient, B for Debt is equal to 9.752E.006 which means that for each increase in Debt there is a decrease in ROE of 0.0000009752 shillings per year. The least square equation for the model is found is y = 1.804 + $0.0000001166x_{Equity}$ + $0.0000009752x_{Debt}$

The standardized beta of 0.195 which represents the relative contribution of equity capital variable in influencing the financial performance as measured by return on assets was positive. The standardized beta of 0.166 which represents the relative contribution of debt capital variable in influencing the financial performance as measured by return on assets was positive. The equity capital variable t---test confidence interval of the coefficient at the 95% is [1.956 .0.053] while that of debt capital variable t-test confidence interval of the coefficient at the 95% is [1.667 .0.099].

These findings are consistent with many studies have established a no relationship between the level of debt capital and financial performance of firms. It is also consistent with the Modigliani and Miller (1958) capital structure irrelevancy theory where Krishnan and Moyer (1997) established a no significant correlation between debt level and financial performance of firms' so are the dairy cooperative societies. On the other hand, these findings provide a less robust hold for both the static tradeoff theory and the pecking order theory used in this study.

SUMMARY OF FINDINGS

The correlation between capital structure and financial performance provided r = .026, the R^2 statistic indicated that 0.01% of the variance in return on assets explained changes in capital structure ("explanatory variable"). This means that only 0.1% of variance of return on assets is accurate by the capital structure (Equity and Debt capital). However, the remaining 99.99% of variance with return on assets is attributed to other factors. The R value of 0.026 represented a weak linear relationship between capital structure and return on assets in the dairy cooperative societies. The p value equal to .968 indicates that capital structure does not significantly influences the return on assets of the dairy cooperative societies in Nyandarua County. Using the F-test through ANOVA capital structure (Debt and Equity) did not statistically significantly predict the dependent variable (return on assets , $F(2, 97) = 0.032$, $p>.05$ greater than (.05); the null hypothesis is accepted that there is no significant effect of capital structure (debt and equity) on financial performance as measured by return on assets. Other variables that could be studied could include those studied by Charles (2005) on performance of dairy in the United States of America found social networks had effect on financial performance of dairy co-operatives.

Another measure of financial performance ROE was tested and provided between the capital structure (Equity and Debt capital) and ROE the adjusted R^2 of 0.060 meaning that only 0.6% of variance of ROE is accurate by the capital structure (Equity and Debt capital) However, the remaining 99.4% of variance with ROE was attributed to other factors. The P value is more than (.05) and the null hypothesis is accepted. There was no significant effect of

capital structure (Equity and Debt) on financial performance as measured by ROE. These findings was consistent with that of Barton (1989) who found that management of Dairy Cooperatives always strived to obtain the best financing mix since the use of external funds affected the return and risk of shareholders. Consequently, any increase in the return on equity funds often increases risk.

CONCLUSIONS

The aim of this study was to establish the effect of capital structure and financial performance of dairy co-operative societies in Nakuru north sub county, Kenya. The study was guided by one objective and based on results from data analysis and findings in relation to the study objectives, the following conclusions were made.

First; there is no significant effect of capital structure on the financial performance of dairy co-operative societies in Nakuru north sub county, Kenya. Capital structure only explained 0.01% of the variance in Return on Assets explained changes in capital structure. There was therefore a weak linear non-significant relationship between capital structure and return on assets in the dairy cooperative societies in Nakuru North Sub County, Kenya as measured by return on assets. Other aspects should be explored to improve financial performance of dairy cooperatives in Nakuru North Sub County, Kenya such as improved marketing through the use of social networks to improve financial performance of dairy co-operatives.

A financial performance measure based on ROE and capital structure (Equity and Debt capital) was able to explain only 0.6% of variance of ROE by the capital structure (Equity and Debt capital) The remaining 99.4% of variance with ROE was attributed to other factors could not be explained by the model. The capital structure effect was however not significant on financial performance as measured by ROE and therefore the management of Dairy Cooperatives should strive to obtain the best financing mix to increase the return on equity.

This study examined the capital structure effect on dairy cooperative societies; financial performance alongside the Modigliani and Miller and pecking order theories. The major theory that underpinned this study was the Modigliani and Miller (1958) theorem. The tradeoff theory was applied in the study context to test its views on the dairy cooperative societies' setting for a level of debt where the marginal benefit of debt, in the form of tax deductibility of interest payments. The possible mitigation of this theory on agency costs, offsetting the marginal cost of debt in the form of bankruptcy costs did not apply since all the dairy cooperative societies did not use debt capital. The pecking order theory was tested in the view of the considerations in order of first priority for financing considerations of dairy cooperative societies. The fact that these dairy cooperative societies did not use debt capital was the only possible application

given that the managers of these dairy cooperative societies had superior information about the value of the dairy cooperative societies than would have to the outside providers of funds. The resulting financing quality that that the study appeared to suggest was that dairy cooperative societies' preferred use of equity finance and strictly ranked first as a preferred source of finance possibly to be followed by debt capital which did not exist in their capital structure.

RECOMMENDATIONS OF THE STUDY

The findings of this study revealed that capital structure of Nyandarua County dairy cooperative societies' did not use debt capital at all and this could have had the effect on the on their poor financial performance. In this context, the study recommends the following:

Dairy cooperatives societies should use debt capital alongside equity capital to finance dairy cooperative societies' activities and improve their financing mix that has several alternatives by choosing the right approach for each case. In this case cooperative societies through borrowing can acquire assets; increase in size large firms, borrow more because these firms as they become more diversified. Consequently, they will become less prone to bankruptcy, and have relatively lower bankruptcy costs.

LIMITATIONS OF THE STUDY

The study was limited to dairy co-operative societies registered in Nakuru North Sub County excluding those outside the region. The study considered capital structure and financial performance but did not consider dairy co-operative societies' characteristics.

The study used dairy cooperatives financial statements and did not consider other potential financial performance determinants such as inflation, tax rates and market competition and weather vagaries which can provide insight into diary cooperatives financial performance.

REFERENCES

Abor, J. (2007). Corporate Governance and Financing Decisions of Ghanaian Listed Firms. Corporate Govervance , 83-92.

Adams M, B. M. (2000). The Determinants of Operational Performance in the Bermuda Insurance Market. Appied Financial Economics , 133-143.

Adedeji, A., (1998), "Does the pecking order hypothesis explain the dividend payout ratios of firms in the UK?," Journal of Business Finance & Accounting 25, 1127-1155.

Adesina, D. (1998). Essential Information on cooperative credit societies (CTCS & CICS). Retrieved from: www.worldcat.org

Alliance, I. (2002). Status of Agricultural Marketing Co-operatives in Kenya. Nairobi: ICA.

Al-Matari, E., Al-Swidi, A., & Fadzil, F. H. (2014). The Measurement of Firms Performance's Dimensions. Asian Journal of Finance & Accounting , 6(1).

Arcas-Lario, N., Martín-Ugedo, J.F., & Mínguez-Vera, A. (2014). Farmers' satisfaction with fresh fruit and vegetable marketing Spanish cooperatives: An explanation from agency theory. International Food and Agribusiness Management Review, 17(1), 127–146.

Barry, P., Ellinge, P., Hopkin, J., & Baker, C. (1995). Financial Management in Agriculture. Interstate Publishers, Danville , 11.

Barton, D. (1989). What is a Cooperative? In D. W. Cobia, Cooperatives in Agriculture, 1–20. Engelwood Cliffs, NJ: Prentice-Hall.

Baskin, J., 1989, "An Empirical-Investigation of the Pecking Order Hypothesis," Financial Management 18, 26-35.

Bekkum, O. v., & Dijik, G. v. (1997). Agricultural Co-operatives inthe European Union. Trends and Issues on the Eve of the 21st Century. Assen Van Gorcum .

Booth, L., Aivazian, V., Demirguc- Kunt, A., & Maksmivoc, V. (2001). Capital Structure in Developing countries. Journal of Finance , 87-130.

Castanias, R. (1983). "Bankruptcy Risk and Optimal Capital Structure". The Journal of Finance , 1617-1635.

Charles, K. (2012). Measuring Performance of Dairy Co-operatives. United States Department of Agriculture.

Charles, L. K. (2005). The ultimate R & D Challenge. Financing new Technology. Rural Cooperatives 72(4) , 20-20.

Chen, J. J. (2004). "Determinants of Capital Structure of Chinese Listed Companies". Journal of Business Research 57 , 1314-1351.

Chen, R., & Wong, K. (2000). The Determinants of Financial Health of Asian Insurance Companies. Journal of Risk and Insurance , 469-499.

Cook, M. L., & Plunkett, B. (2006). "Collective Entrepreneurship: an emerging phenomenon in producer-owned organizations". Journal of Agricultural and Applied Economics. Vol. 38 No.2 , 421-428.

Cook, M., Burress, M. J., & Iliopoulos, C. (August 2008). New Producer Strategies: The Emergence of Patron- Driven Entrepreneurship . 12th EAAE Congress, (pp. 26-29). Gent, Belgium.

Cooper, R., & Schindler, S. (2006). Business Research Methods (9th edition). USA: McGraw-Hill.

COPAK (1995) Capital Formation in Agricultural Cooperatives; Report of COPAC International Technical Meeting Rome

Coskum, M., & Sayilir, O. (2004). Relationship Between Corporate Goverance and Financial Performance of Turkish Companies. International Journal of Business & Social Science, 3(14) , 59-64.

Cronbach, L., & Shavelson, J. (2004). My current thoughts on coefficient alpha and successor procedures. . Educational and Psychological measurement 64(3) , 391-418.

Demirguc-Kunt, A., & Huizinga, H. (1999). Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. World Bank Economic Review.Vol.13 379-408.

Frank, M., & Goyal, V. (2009). Capital Structure Decisions. Financial Management, 38(1), 1-37.

GOK. (2006). Sessional Paper on Dairy Industry Development. Nairobi: Government Printers.

Habbash, M., & Bajaher, M. (2014). An Empirical Analysis of the Impact of Board Structure on the Performance of Large Saudi Firms. The Business Review, Cambridge 22(1) , pp. 152-158.

Helmberger, P., & Hoos, S. (1962). Cooperative Enterprises and Organisational Theory. Journal of Farm Economics, 44 , 275-290.

Holmstrom, B. (1999). The Future of Co-operatives: A Corporate Perspective. Finnish Journal of Business Economics 48(4) , 404-417.

International Co-operative Alliance (ICA). (2002). Status of Agricultural Marketing Co-operatives in Kenya. Nairobi: ICA.

Karanja, A. (2002, August 27th). The Dairy Industry in Kenya. The Post Liberalization Agenda. The Paper Presented at a Dairy Industry Stakeholders Workshop . Nairobi.

Kostyuk, A. (2011). Corporate Govervance in Banking Sector in Tanstion Economy: The Role of Ownership Structures. Serbian Journal of Management, 6(1) , 43-54.

Luigi, P., & Sorin, V. (2009). "A Review of the Capital Structure Theories". Annals of Faculty of Economics, University of Oradea.Vol.3(1) , 315-320.

Manyara, M. K. (2004). Co-operative Law in Kenya (Vol. 1). Nairobi: United Press.

Manyara, M. K. (2003). The Development of Co-operative Law and Policy in Kenya (Vol. 1). Nairobi: United Press.

Mauget, R. (2008). 'Les cooperatives agricoles: un atout pour la perennite de l'agriculture dans la mondialisation":. RECMA,No. 307 , 46-57.

Miller, M. (1977). Debt and Taxes . Journal of Finance , 261-275.

Modigliani, F., & Mille, M. H. (1958). The Cost of Capital, Corporate Finance and Theory of Investment. American Economic Review , 261-297.

Modigliani, F., & Mille, M. (1958). The Cost of Capital , Corporate Finance and Theory of Investment. American Economic Review , 261-297.

Moyer, &.Krishnan (1997). Performance, Capital Structure and Home Country: An Analysis of Asian Countries. Global Finance Journal, Issue 8(1) , 129-143.

Mugenda, O., & Ngugi, J. (2003). Research Methods. Nairobi: Acts Press.

Myers, S. (1984). The Capital Structure Puzzle. Journal of Finance, 39 , 575-592.

Myers, S., & Majluf, N. S. (1984). Corporate Financing and Investment Decisions when firm have information that investors do not have. Journal of Financial Economics 13 , 187-221.

Ortmann G.F.& King R.P (2007). Agricultural cooperatives: history, theory and problems", Agrekon, 46(1), 57-60

Oustapassidis, K. (1988). "Structural Characteristics of Agricultural Cooperatives in Britain". Journal of Agricultural Economics, 39 , 231-242.

Pandey, I. (2002). Financial Management,8th Edition. New Delhi: Vikas.

Parnell, E. (1999). Reinventing cooperation: The challenges of the 21st century. Oxford:Plunkett Foundation.

Parliament, C., Lerman, Z., & Fulton, J. (1990). "Performance of Cooperatives and Investor-owned Firms in the Diary Industry". Journal of Agricultural Cooperation, 5 , 1-16.

Shadbolt, N., & Duncan, A. Fonterra as a Case Study of Cooperative Capital Structure Innovation. International Summit on Cooperatives.

Sidhu, R. S., & Sukhpal, S. (2003). 'Economics Sustainability of Wheat and Rice Crops in Punjap:Issues on Prices, Profitability and Natural Resources Use'. Indian Journal of Agricultural Economics, Vol. 58, No.3 .

Sorensen, B., & Stuart, E. (2000). Age, Obsolescence and Organisational Innovation. Academy of Management Journal, 25 , 6-10

Taiwo Adewale, M., & Adeniran Rahmon, T. (2014). Does Corporate Social Responsibilty Improve and Organization's Financial Performance?- Evidence from Nigerian Banking Sector . IUP Journal of Corporate Governance, 13(4) , 52-60.

Waddock, S., & Graves, S. (1997). "The Corporate Social Performance Financial Performance Link". Strategic Management Journal, 18(4) , 303-319.

Wald, J. (1999). How Firm Characteristics affect Capital Structure: an International Comparison. Journal of Financial Research,22(2) , 161-187.

Walsh Eamonn, J., & Ryan, J. (1997). Agency and tax explanations of security issuance decisions.Journal of Business Finance and Accounting, 24 , 7-8.

WCM (2016) Cooperative extension; winter crop Meeting; Connel University

Wooldridge, J.M. (2002). Econometric analysis of cross-section and panel data. Cambridge: M.I.T. Press.