# THE MODERATING EFFECT OF DAIRY CO-OPERATIVE CHARACTERISTICS ON CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF DAIRY CO-OPERATIVE SOCIETIES IN NAKURU NORTH SUB COUNTY, KENYA

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## Abstract

*Characteristics that define dairy cooperative societies provide an insight on how they are financed and managed within the cooperative societies' act of Kenya. Liberalization and competitive pressure in the dairy industry has shown both positive and negative results for different dairy cooperative societies. However, dairy cooperative characteristics have not mostly been factored in the capital structure and financial performance analysis while studies in other sectors of especially listed firms underline their importance. This provoked this study to analyse the moderation effect of dairy cooperative characteristics specifically size defined by voluntary and open membership, democratic control, limited reward to capital invested, co-operative education and training and equal voting rights could have on the relationship between capital structure and financial performance of dairy cooperative societies in Nakuru North Sub County, Kenya. The study used both case study and descriptive research design on a data set of ten dairy cooperative societies. Study found that dairy cooperative societies characteristics had a*

*moderating effect on the relationship between capital structure and financial performance with $R^2$ of 0.095 and p-value = 0.022 indicating a significant relationship. The findings of this study are of great benefit to practitioners, academicians in the area of knowledge development, farmers and other stakeholders in the dairy industry.*

*Keywords: Moderating Factors, Capital Structure, Cooperative Societies Act, Dairy Cooperative Characteristics, Liberalization*

## INTRODUCTION

One of the most complex issues for dairy cooperative societies in any developing country are those that concern financial management in relationship to the capital structure and their characteristics. This may provide an insight into how dairy cooperative societies compete and operate within a liberalized market (Oustapassidis, 1988). Co-operative societies in third world countries are basically characterized as poorly organized, have voluntary membership, have absence of exploitation, and play roles almost similar to that of a bank and works on subsidies due to some risk involved in advancing loans (Graham & Harvey, 2001). The outstanding features of cooperatives which can be identified today are as the result of the adopted post-independent policies in Kenya which suggested that the cooperatives should provide coverage to the rural poor to improve the standards of living of the people. The post-independence governments recommended that the state government should participate in the share capital of the cooperatives and also provide managerial support and subsidies.

Existing finance literature specifically on the cooperatives find that there is an increasing significance in creating fresh financial solutions to challenge the conventional way of organizing cooperatives seen not to be succeeding in making cooperatives adequately viable in competitive food industries (Bekkum & Dijik, 1997). Some of these challenges include how the capital structure of cooperatives should be reorganized to facilitate cooperatives finance massive in-vestments both in tangible and intangible assets. The finance literature on cooperatives indicates that in countries like Ireland, The Netherlands and Austria, some cooperatives have been transformed into joint stock entities with both farmer-members and private investors constituting their shareholders. In some continents such as Europe and North America are new capital innovations that include the introduction and use of tradable shares to finance cooperatives. This study found that developing countries are far away from implementing such new innovations as those in the developed economies probably because of

being underdeveloped economies in addition to the problems of operating in a new form of liberalised market.

In Kenya, dairy farms are market-oriented; smallholder dominated and concentrated close to urban consumption centres because this is where the market is. Less proximity to urban areas is characteristic only in those regions where there is an efficient market infrastructure. Many farmers in the country have adopted dairy cattle for marketed milk production which is a striking feature of Kenyan agricultural development in the face of increasing human population pressure especially in the urban centres(Lewi & Perri, 2009).

Characteristic development of smallholder dairy production systems in the Kenya is therefore marked by three elements: declining farm size, upgrading into dairy breeds and an increasing reliance on purchased feeds. Underpinning these production responses are strong local demand for milk (rural communities and neighbouring urban populations) and effective market mechanisms, which link smallholder producers to local and distant markets (DCO, 2011/2012). There are over 498 registered dairy co-operatives in Kenya which handle nearly 70% of the milk marketed through formal channels and other than farmers who derive their livelihoods through the milk activity, the dairy co-operatives employ more than 20,000 employees (Nyatichi, 2015). In Nakuru North Sub County at least ten dairy co-operatives have been registered since 1967 and the Kenyan government has liberalized the dairy industry, revoking a parastatal (KCC) monopoly on urban milk sales with consequences.

**Statement of the Problem**

Capital structure envisages the financing challenges of diary cooperatives in terms of their characteristics in terms of size defined by voluntary and open membership, democratic control, limited reward to capital invested, co-operative education and training and equal voting rights on diary cooperatives' on capital structure and financial performance. In Nakuru North Sub County, ten (10) dairy co-operative societies have been registered since 1967 but to date only one (1) remains active in terms of operations. The other nine dairy co-operative societies have been fully operational for the last ten years and have therefore 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. These dairy cooperatives have been in operation for more than ten years factors that contributed to their being declared insolvent in 2015 required an investigation. This study therefore investigated the moderating effects of dairy cooperative characteristics on the relationships between capital structure and financial performance of the dairy cooperative

societies in Nakuru North Sub County to establish if the dairy cooperatives characteristics had any effect on capital structure and their financial performance.

## Objective of the Study

To determine the moderating effect of dairy cooperative society characteristics on the relationship between capital structure and financial performance of dairy cooperative societies in Nakuru North Sub County.

## Research hypotheses

The study tested the following null hypotheses:

$H_2$: There is no significant moderating effect of dairy cooperative society characteristics on the relationship between capital structure and financial performances of dairy cooperative societies in Nakuru North Sub County.

## THEORITICAL REVIEW

## Modigliani-Miller Theory

Modern capital structure theory propositions put forth by Modigliani and Miller (1958) uses economic theory based on the following assumptions; capital markets are perfect, no transaction, bankruptcy costs and taxes, and there is information symmetry and changes in a firm's capital structure have no long term effects on a firm's market value and thus market value of a firm is independent of its capital structure. Being one of the first generally accepted theories of capital structure, Modigliani and Miller assume that the firm has a particular set of expected cash flows that guides the firm on what proportion of debt and equity will be chosen to finance its assets.

However, empirical studies on Milk Producers Cooperative Society in Punjab find that success of cooperative is based on the steadiness in the growth rate of the membership and thereafter the stability of the membership (Sidhu & Sidhu, 1990). This finding is not in tandem with the Modigliani and Miller (1958) theory of capital structure given further that by the liberalization of modern markets cash flows expected cannot be perfectly estimated. Sidhu and Sidhu (1990) argue that indicators such as capital formation, the business expansion patterns and measures of income, expenditure & profits was reflected by capital contributed by the members which further determined the ratio of borrowings. Comparatively Graham (2000) inconsistently argues that big, liquid, profitable companies with characteristically a low level of expected distress costs use debt conservatively. By debt conservatism Graham implied that companies will not use debt capital when they are financially stable.

The Modigliani and Miller irrelevance proposition theory is not simple to test as both debt and firm value are reasonably endogenous and driven by other factors such as profits, collateral and growth opportunities making the structural test of the theory by regressing value on debt difficult (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 and if an organization generates high profits then its value will rise. An increased value of a cooperative society in such a case will motivate both increased membership and capital contribution. Modigliani and Miller argue that firm value is determined by firm's profitability and creates greater likelihood of more dividends that will be shared among members to create increased firm value (Brigham, Eugene, & Joel, 2006).

**Trade off Theory**

This theory posits that leverage has benefits with the use of an optimal capital structure when debt interest is tax deductible which in turn reduces tax liability consequently increasing tax shield. If a high proportion of debt is used by the company, it makes it very risky for investors to invest in it because they demand a high premium on security or high dividend.

Alzurqan et. al (2011) posit that the trade-off theory of capital structure is more evident when a firm is using a higher leverage (using more debt); and this will increase the firm value because of the tax deductibility of interest. In this context, the study measured leverage as a ratio of Total Debt (TD) to Total Assets (TA) and as a proxy of leverage it was calculated using the formula: Leverage = Total Debt it / Total Assets. This theory, accordingly stipulates that corporations or firms will seek debt finance levels that balance the tax advantages of additional debt against the possible bankruptcy costs (Myers & Majluf, Corporate Financing and Investment Decisions when firm have information that investors do not have, 1984).

This theory indicates that a firm has an optimum capital structure based on tradeoff between costs and benefits of using debt but does not explain the conservative nature of firms when using debt finance (Popescu & Wilson, 2009). Firm's optimal debt ratio is determined by a tradeoff between the bankruptcy cost and tax advantage of borrowing and it is achieved at the point when the marginal present value of the tax on additional debt is equal to the increase in the present value of financial distress cost (Owolabi & Inyang, 2013).

However, studies on trade-off theory provide mixed results for example; Titman and Wessels (1988), Rajan and Zingales (1995) and Fama and French (2002) assert that higher profitability firms tend to borrow less which is inconsistent with the actual trade off prediction that higher profitability firms should borrow more to reduce tax liabilities. Graham (2001) studied cost

and benefit analysis of debt and found that the large and more profitable firms with low financial distress expectation use the debt conservatively.

Baker and Wurgler (2002) criticized the trade-off theory on the strength that the trade-off theory envisages temporary variations in the market to book ratio whereas any other variable can provide temporary effects in the market. This finding further provided a negative relationship between leverage and external finance weighted average market to book ratio, prompting a conclusion that capital structure is the increasing result of attempts to time the equity market

## Pecking Order Theory

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, firms initially use internal funds before resorting to debt capital. Therefore, firms which are very profitable and generate sufficient cash flows use less debt do not have predetermined or optimum debt to equity ratio due to information asymmetry. The "pecking-order theory" essentially implies that the use of debt financing, rather than equity capital is suitable when internal cash flows are not sufficient to finance investment expenditure (Myers, The Capital Structure Puzzle, 1984)

The theory suggest that firms have a particular preferential order for capital used to finance their business  owing to this information asymmetries between the firm and potential investors as the reason for preferring retained earnings to debt, short term debt over long-term debt and debt over equity. Myers and Majluf (1984) posit that if firms issue no new security and only use their retained earnings in investments, the information asymmetry can be resolved. The implication of this theory to which dairy cooperative societies are not limited to because of not being listed is that if firms have large information asymmetry then they should issue debts to avoid selling underpriced securities. Myers (1984) further states that business should adhere to a hierarchy of financing sources and prefers internal financing when available and should external financing be required, debt would be preferred to equity.

Adedji (1998) criticizes and questions the pecking order theory based on its suggestion that it is only the internal funds that motivates firms to raise funds externally. This is because it ignores the effects of institutional factors and for the purpose of this study the dairy cooperative society characteristics that might affect the firm's choice of financing instruments. These characteristics include and are not limited to level of interest rate, borrower-lender relations and the government intervention and nature of the market. 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 control consideration

that may make firms reluctant to issue equities because of their effects on the existing balance of control. Frank and Goyal (2009) in their additional analysis of the risk firms, found that firms with volatile equity shares are those which are very risky and may suffer more from adverse selection in the stock markets. Therefore, these corporations become riskier because of their volatile securities and would predict a higher debt-financing level. The robustness of this theory required to be tested based on the fact that dairy cooperative societies do not list on the country's securities exchange and hence internal mechanisms being the only way of risk assessments. Likewise, Frank and Goyal's (2009) argument that corporations with volatile cash flows might need to periodically access the external capital markets thereby increasing debt financing levels will not be useful for dairy cooperative societies.

## LITERATURE REVIEW

### Dairy cooperative society characteristics and capital structure

In both developed and developing countries producers in all forms of cooperatives including dairy cooperatives are always willing to invest, but in return they expect higher benefits from the cooperative society compared to dealings with the bank. Dairy cooperatives are characterized by voluntary and open membership, democratic control, limited reward to capital invested, co-operative education and training and equal voting rights but unfortunately have no clear definition of capital ownership which further weakens the efficiency of a cooperative (Bijman, 2011). The main efficiency problem of collective ownership in cooperatives is that it weakens the incentive for members to supply equity capital given that they are high risk investments where debt capital would be more appropriate but an expensive source of finance (Bijman, 2011). Cayota (2009) in support about Uruguay argues that debt being a risk capital has no norms or state a mechanism that can be used to recover capital contribution done by a member, nor are there norms that make it possible to compensate a member as soon as the capital is invested.

The majority of dairy cooperative societies in Kenya are characterised by the small size which resonates with poor capital structure. Despite the existence of large dairy co-operative societies capable of exploiting the economies of scale and becoming more efficient, small dairy co-operative societies with such characterises under study cannot. This is because such small dairy cooperatives always avoid risk taking and do not to seek loan from the bank due to lack of sizeable deposits (Sumelius, et. al, 2013). The dairy cooperative societies' annual financial statements under this study do not have a debt component an issue that may be consistent with Sumelius, et. al, 2013 findings. Small dairy co-operative societies have less bargaining power than large co-operatives and hence find it difficult to compete with the large dairy co-operative

societies particularly in highly competitive markets. On the other hand, as dairy co-operative societies become larger, they may suffer from inefficiencies, leading to inferior financial performance equivocal on the precise relationship between capital size and financial distress (Majumdar, 1997).

Studies show that the number of years a firm has been in operation has an influence on its performance (Batra, 1999, Lumpkin and Dess, 1999). On the other hand, Sorensen & Stuart (2000) argue that organizational inertia operating in old firms tend to make them inflexible and unable to appreciate changes in the environment. As a result, newer and smaller firms take away market share in spite of their disadvantages such as lack of sufficient capital, brand names and corporate reputation compared with older firms (Kakani, Saha, and Reddy, 2001). These findings can be replicated in this study since older dairy cooperatives should be more experienced, have enjoyed the benefits of learning, are not prone to the liabilities of newness, and can therefore enjoy superior financial performance (Liargovas & Skandalis, 2008).

Older firms benefit from reputation effects, which allow them to earn a higher margin on sales despite being prone to inertia and the bureaucratic ossification that goes along with age. Older firms might have developed routines, which are out of touch with changes in market conditions resulting into an inverse relationship between age and profitability or growth(Liargovas, and Skandalis, 2008)

Munyori (2014) studied factors affecting the performance of small and micro enterprises dairy farmers' in Kenya and found that access to markets and finance affected the performance of dairy co-operatives while social networks had no effect on performance of these co-operatives. This study neither considered dairy cooperative societies nor their characteristics moderating effects a gap that this study explored.

Charles (2005) studied performance of dairy farming in the United States of America found that social networks had a profound effect while size did not have an effect on financial performance of dairy co-operatives. The current study carried out a contextual assessment of such results in Kenya's case. Charles (2005) study further established that where dairy cooperatives had difficulty in attracting outside capital, reasons included: inefficiencies that are unlikely to be overcome simply by access to capital, flawed governance, managers' or owners' personal motives not being consistent with sound business operation (Charles, 2005).Lack of transparency through incomplete or faulty record-keeping and non-disclosures made it difficult to value the business and determine its debt capacity in relationship to small size resulting into outsiders' transaction costs being high relative to the amount of loan or equity provided (Charles, 2005).

Findings from small and big firms studied in G-7 countries to establish whether size of a business was a factor in determining capital structure found that large firms were more diversified and had a lower likelihood of defaulting on debts (Rajan and Zingales, 2005). Rajan and Zingales (2005) case was consistent with the predictions of the trade-off theory which suggested that large firms borrow more because they were more diversified, less prone to bankruptcy, and had relatively lower bankruptcy costs.  The other advantage was that such firms can enjoy lower agency costs of debt, lower monitoring costs due to less volatility in cash flow and easy access to capital markets and loans. These findings concluded that there is a positive relationship between the firm size and leverage which was in tandem with the pecking order theory. This suggests that there is a negative relationship between firm size and the debt ratio as the issue of information asymmetry is less severe for large firms. Owing to this, large firms should borrow less due to their ability to issue informational sensitive securities like equity. The contextual differences may however arise from the findings when the unlisted dairy cooperative societies are studied as in the case of the current study.

It is important to appreciate that there are many empirical findings on this issue which are still mixed. Wald (2009) found a significant positive relationship between size and leverage for firms in the USA, the UK, and Japan. However, an insignificant negative relationship for firms in Germany and a positive relationship for firms in France were also found. Chen (2004) on the other hand found a significant negative relationship between size and long-term leverage for firms in China.

## RESEARCH METHODOLOGY

### Research Design

This study adopted a case study method since the method allows an in-depth focus on the case of the study and as such it gave room for the researcher to keenly examine the effects of capital structure and financial performance of dairy cooperative societies in Nakuru north sub county The case study approach involved an in depth, contextual analysis with comparison to similar situations in other countries where the nature of the problem happens to be experienced. Mugenda & Mugenda (2003) notes that, a case study is a very powerful form of quantitative analysis that focuses on depth rather than on breadth. The study also used a descriptive research design to obtain information concerning the current status of the dairy cooperative societies and to describe "what exists" with respect to variables or conditions in a situation.. The design was used in formulating the objective of the study, designing the methods of data collection, selection of sample, collection of data, processing and analysis of data, and reporting the findings.

## Data Collection Methods

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. Financial performance data was established from the financial statements which was reviewed to determine the return on assets (ROA) and returns on equity (ROE)

## Data Analysis and Technique

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; TaiwoAdewale & AdeniranRahmon, 2014). ROA determines 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).

Naturally a cooperative is not focused on making a profit because the majority of cooperatives reinvest the returns made in agreement with the pecking order theory. This study used the return on equity (ROE) to measure the profitability of the dairy cooperative societies so as to provide insights into the capacity of dairy cooperative society returns. From the data analysed it can be stated that better performance should indicate a high ROE. This study measured the ROE of the dairy cooperatives in order to provide more information about their capacity of returns and used this in the analysis of the assumed problem of cooperatives societies' capital structure not possibly being able to generate sufficient own funds to sustain 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; $\beta_0$ is a constant, $\beta_1$ regression coefficient while X was equity capital component from the financial statements.  A random error term $\varepsilon$ 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; $\beta_0$ is a constant, $\beta_1$ regression coefficient while X was equity capital component from the financial statements.  A random error term $\varepsilon$ will account for unexplained variations in the model

Step three $Y = \beta_0 + \beta_1 X_1 + \beta_2 SIZE_i + \beta_3 X CS (SIZE)_i + \varepsilon$……..……………….…………….... (3)

Where $\beta_1$ is the coefficient relating the X to the outcome, $Y_i$, when $SIZE_t = 0$, $\beta_2$ is the coefficient relating the moderator variable, $SIZE_i$ to the outcome when $X_i = 0$, $\beta_0$ the intercept in the

equation, and ε is the residual in the equation. The regression coefficient for the interaction term, $β_3$, provides an estimate of the moderation effect. If $β_3$ is statistically different from zero, there is significant moderation of the $X_i$ -$SIZE_i$ relation in the data (Baron and Kenny, 1986).Moderation effects were tested with multiple regression analysis and all predictor variables with their interaction of (SIZE)to improve interpretation of regression coefficients. The product CS (SIZE) tested the effect of size to describe the strength of the moderating effect as measured by $β_3$ after controlling for financial performance and SIZE

**FINDINGS**

The study examined moderation factors of dairy cooperative society characteristics which occurs when the effect of an independent variable on a dependent variable varies according to the level of a third variable, termed a moderator variable, which interacts with the independent variable (Baron and Kenny, 1986). In table 1, moderation (Dairy cooperative characteristics) was 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. Moderating effect  Model Summary 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 | .308[a] | .095 | .066 | 31.167891 | .095 | 3.343 | 3 | 96 | .022 |
| 2 | .303[b] | .092 | .073 | 31.053047 | -.003 | .286 | 1 | 96 | .594 |

a. Predictors: (Constant), Log Assets, DEBT, EQUITY

b. Predictors: (Constant), Log Assets, EQUITY

c. Dependent Variable: Return On Assets

Model 2 presents the moderating effects of the cooperative society characteristics commonly introduced when there is an unexpected weak relationship between predictor and dependent variable. After introducing moderating variable as described by size the results improved such that ($R^2$) was 0.095 for model 2 which meant that the capital structure was able to explain 9.5% of the variation in capital structure with 90.5% of the variations remaining unexplained. The p-value = 0.022 which was less than 0.05 therefore rejected the null hypothesis. Therefore with the moderating variable, there is a significant relationship between capital structure and performance of cooperative societies in Nakuru North Sub County, Kenya.

Table 2. ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 9743.092 | 3 | 3247.697 | 3.343 | .022[b] |
| | Residual | 93257.996 | 96 | 971.437 | | |
| | Total | 103001.087 | 99 | | | |
| 2 | Regression | 9464.790 | 2 | 4732.395 | 4.908 | .009[c] |
| | Residual | 93536.298 | 97 | 964.292 | | |
| | Total | 103001.087 | 99 | | | |

a. Dependent Variable: Return On Assets

b. Predictors: (Constant), Log Assets, DEBT, EQUITY

c. Predictors: (Constant), Log Assets, EQUITY

From the ANOVA analysis results table 2 above model 2 indicates the effect of cooperative societies' size (log assets) on financial performance. The analysis return on assets, F (4,732.395, 964.292) = 4.908, p = 0.009< 0.05 indicates that the effect of log assets which provides a significant relationship between capital structure without the use of debt and financial performance as measured by return on assets.  In model 1 the introduction of the log assets (size) in the capital structure, the ANOVA analysis provides  F (3,247.697, 971.437) = 3.343, p = 0.022< 0.05 indicates that the effect of log assets which provided a significant relationship between capital structure with the use of equity and debt and financial performance as measured by return on assets. The moderating effects of the cooperative society characteristics were introduced in the model to establish the effect between the predictor (capital structure) and dependent variable (financial performance).

Table 3. ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1494.257 | 3 | 498.086 | 10.665 | .000[b] |
| | Residual | 4483.486 | 96 | 46.703 | | |
| | Total | 5977.742 | 99 | | | |
| 2 | Regression | 1470.018 | 2 | 735.009 | 15.816 | .000[c] |
| | Residual | 4507.725 | 97 | 46.471 | | |
| | Total | 5977.742 | 99 | | | |

a. Dependent Variable: Return On Equity

b. Predictors: (Constant), Log Assets, DEBT, EQUITY

c. Predictors: (Constant), Log Assets, EQUITY

From the ANOVA table 3, the statistical analysis results above model 2 indicates the effect of cooperative societies' size (log assets) and equity on financial performance. The analysis ROE, F (735.009, 46.471) = 15.816, p = 0.000< 0.05 indicates that the null hypothesis is rejected. The study therefore concludes that the effect of log assets (size) on equity without the use of debt capital provides a significant relationship between size and capital structure and financial performance as measured by return on Equity.

In model 1 the introduction of the log assets (size) in the capital structure, the ANOVA analysis provides F (498.086, 46.471) = 10,665, p = 0.000< 0.05 indicates that the null hypothesis is rejected. Therefore the effect of log assets (size) provides a significant relationship between capital structure with the use of equity and debt and financial performance as measured by return on Equity.

The above findings are consistent with that of Sumelius, et. al, (2013) who found that small dairy cooperatives seems to avoid risk taking and not to seek loan (debt capital) from the bank due to lack of sizeable deposits.  The previous findings therefore, could provide factors that precisely give a relationship between size of dairy cooperatives and financial performance. The above findings are however not consistent with that of Majumdar (1997) that when dairy co-operative societies become larger, they might suffer from inefficiencies, leading to inferior financial performance.

Table 4. Moderating  Coefficients' for Return On Assets

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .326 | 3.627 | | .090 | .929 |
| | Log Assets | 2.789 | 1.115 | .245 | 2.503 | .014 |

a.   Dependent Variable: Return On Assets

The table above 4 above provides Unstandardized Coefficients for the prediction model which is $Y = 0.326 + 2.789X_1$ where constant is 0.326, and then $X_1$ is size of the cooperative society measured by log assets. In effect the study shows that size (as measured by log assets) has an effect with return on assets and that increase in assets leads to increase in performance by 2.789 shillings. The standardized beta of 0.245 which represents the relative contribution of size of a dairy cooperative variable in influencing the financial performance as measured by return on assets was positive. The size of a dairy cooperative variable t--test confidence interval of the coefficient at the 95% is [2.503 .0.014]

On a simple regression relationship, the constant had a positive coefficient of 0.326, implying holding size of the cooperative society measured by log assets constant, there are other factors influencing dairy cooperative societies Performance in the sector positively.

Table 5. Moderating Coefficients[a] for ROE

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .394 | .788 | | .500 | .618 |
| | Log Assets | 1.331 | .242 | .485 | 5.495 | .000 |

a. Dependent Variable: ROE

The table above 5 above provides Unstandardized Coefficients for the prediction model which is $Y = 0.394 + 1.331X_1$ where constant is 0.394, and then $X_1$ is size of the cooperative society measured by log assets. In effect the study shows that size (as measured by log assets) has a positive effect on ROE and that increase in assets leads to increase in performance by 2.789 shillings. The standardized beta of 0.485 which represents the relative contribution of size of a dairy cooperative variable in influencing the financial performance as measured by return on equity was positive. The size of a dairy cooperative variable t--test confidence interval of the coefficient at the 95% is [0.485 .5.495]. On a simple regression relationship, the constant had a positive coefficient of 0.394, implying holding size of the cooperative society measured by log assets constant, there are other factors influencing dairy cooperative societies performance in the sector positively.

The above findings are not consistent with the findings by Charles (2005) on performance of dairy cooperatives in the United States of America where social networks had a more profound effect on the dairy cooperatives financial performance as compared to size in terms of assets. This study findings may be consistent with Charles (2005) findings when subjected to further studies that dairy cooperatives have difficulty in attracting outside capital due to inefficiencies, flawed governance, lack of transparency and difficult to value the business and determine its debt capacity. Others could be the small size of the dairy cooperative societies in Nakuru North Sub County which means that outsiders' transaction costs may be high relative to the amount of the loan or equity that they might provide.

The findings are also consistent with that of Rajan and Zingales (2005) who established that size of a business was a factor in determining capital structure and that large firms were more diversified and had a lower likelihood of defaulting on debts. The study findings are

consistent with the predictions of the trade-off theory used in the study which suggested that large firms should borrow more because these firms are more diversified, less prone to bankruptcy, and have relatively lower bankruptcy costs.

## CONCLUSIONS

The study examined moderation factors of dairy cooperative society characteristics**(size)** which was interacted with the independent variable to examine the individual differences or situational conditions that influence the strength of the relationship between a predictor (capital structure) and an outcome (financial performance).

The moderating variable as described by size provided ($R^2$) of 0.095 meaning that capital structure was able to explain 9.5% of the variation in capital structure with 90.5% of the variations remaining unexplained. The p-value = 0.022 was realized which was less than 0.05 and therefore with the moderating variable, there was a significant relationship between capital structure and performance of cooperative societies in Nakuru North Sub County, Kenya

From the ANOVA analysis results, model 2 indicates the effect of cooperative societies' size (log assets) on financial performance. The analysis return on assets F (4,732.395, 964.292) = 4.908, p = 0.009< 0.05 indicates that the effect of log assets (size) provided a significant relationship between capital structure without the use of debt and financial performance as measured by return on assets.  In model 1 the introduction of the log assets (size) in the capital structure, the ANOVA analysis provides   F (3,247.697, 971.437) = 3.343, p = 0.022< 0.05 indicates that the effect of log assets (size) provided a significant relationship between capital structure with the use of equity and debt and financial performance as measured by return on assets.  The above findings are consistent with that of Sumelius, et. al, (2013) who found that small dairy cooperatives seems to avoid risk taking and not to seek loan (debt capital) from the bank due to lack of sizeable deposits.

## RECOMMENDATIONS

The findings of this study revealed that capital structure and cooperative societies' characteristics have an effect on the financial performance dairy cooperatives societies in Nakuru North Sub County, Kenya. The study therefore recommends the following:

Dairy cooperatives societies should use debt capital alongside equity capital to finance dairy cooperative societies 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 dairy co-operative societies' characteristics and financial performance.  However, the study did not consider corporate governance issues which can provide insight into diary cooperatives financial performance.

## SCOPE FOR FURTHER STUDIES

Capital structure is still a controversial and more perplexing variable in understanding financial performance of not only listed firms but for dairy corporative societies that are specifically not listed principally in developing markets, such as Kenya. Further studies should examine the comparative capital structure of the dairy cooperative societies of different sizes at national level and to include such variables as growth and age as moderating variables and match the results with what has been found in developed countries.

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