

THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Effect of Liquidity, Corporate Governance, and Competitiveness on Financial Performance: An Empirical Analysis of the Sugar Firms in Kenya

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Abstract:

Empirical evidence postulates that Kenya's Vision 2030 may not be attained as the country may fail to achieve the projected annual growth of 10 percent in GDP. Whereas literature reveals fluctuating financial performance in the sugar firms, previous findings have not targeted contributions on liquidity, corporate governance and competitiveness on the financial performance of sugar firms. The poor financial performance of Kenyan sugar firms has made them heavily indebted to the tune of more than US\$ 1 billion cumulatively as at year ending 2014. The aim of this study was to determine the effect of liquidity, corporate governance, and competitiveness on the financial performance of sugar firms in Kenya. The specific objectives were to determine the effect of firm liquidity current liability coverage ratios, the percentage of the board of directors' expenses and operating costs, production costs per tonne on the financial performance of the firms in Kenya. The study target population was five sugar firms on which census sampling was applied. Secondary data comprising, twelve years from 2005 to 2016. A cross-sectional retrospective research design was used for this study. Diagnostic tests were to identify the reliability and validity of the data. Panel correlation and multiple linear regression were used in the analysis. The estimation results indicated that there is a negative effect between corporate governance, competitiveness, firm age and management efficiency. Firm size had a positive effect, while; monetary policy had a negative effect on firm performance. Fixed effects panel regression results reveal that the effect between current liabilities coverage ratio and financial performance was negative at ($\beta = -0.052, p\text{-value} = 0.350$), and statistically insignificant at a 5% level of significance. Secondly, the study results showed that corporate governance, had a negative and significant effect on the financial performance with ($\beta = -0.066, p\text{-value} = 0.044$). The study results also established that competitiveness, as a proxy of the firm's production costs per tonne, has a statistically significant negative effect on a firm's financial performance with ($\beta = -0.308, p\text{-value} = 0.000$). The study recommends consideration and planning of funding liquidity and the need for the sugar firms to increase their operating cash flow, to positively influence their financial performance. Furthermore, sugar firms need to keep their production costs optimal as high costs negate their financial performance. Moreover, the sugar firms should cut on board expenses and operating costs to strengthen the sector and firm's the financial position. The findings of the study may help to develop a policy framework on financial performance to guide the different players in the sugar firms to improve the financial performance and contribute to the existing body of knowledge for future researchers on liquidity, corporate governance and competitiveness of sugar firms.

Keywords: Financial performance, sugar firms, liquidity, corporate governance, competitiveness

1. Background of Study

According to the MoALF (2015), in its revised Strategic Plan 2013 - 2017, agriculture was identified as one of the major economic sectors expected to stimulate the growth of the economy to a projected annual growth rate of GDP of 10 percent from 2008 to 2030. The sugar sector is one of the most important contemporary economic sectors. Liquidity is one of the most important goals of working capital management and central task of revenue optimization and a company's financial performance.

The financial performance of the sugar firm in Kenya is a subject that has attracted a lot of attention, comments, and interests from both financial experts, researchers, the public and the management of sugar firms. The financial performance of a firm can be analyzed in terms of profitability, dividend growth, sales turnover and return on assets. However, there is still debate among several disciplines regarding how the financial performance of firms should be measured and the factors that affect the financial performance of companies (Liargovas and Skandalis, 2008).

Rahaman (2010) says the financial performance of a firm normally derives from the financial position and structure of the firm. Business executives use financial statements to draft a comprehensive financial plan that will maximize shareholders' wealth and minimize possible risks that may pre-exist. Companies must look for other ways of improving financial performance.

GARP (2015) contended that liquidity is essentially a short-term problem caused by short-term unexpected liabilities and the funding requirements of long-term liabilities that have an adverse effect on firm financial performance. Liquidity risk, therefore, arises from the variability in short-term assets and liabilities and short-term components of long-term assets and liabilities. Under normal circumstances, liquidity can be adequately managed by shifting assets and liabilities, obtaining interbank loans, and drawing down credit lines.

The study by Obado (2005) identifies high indebtedness as a challenge and constraint to the financial performance that inhibits the competitiveness of the Kenyan sugar firm. All publicly-owned sugar mills in Kenya are so heavily indebted and illiquid that they lack the capital required for expanding, modernizing and automating the firms for the required efficiencies and economies of scale. The five public-owned millers are indebted to the tune of more than US\$ 1 billion as at year ending 2014. The accumulated debt has resulted in a decline in financial performance (KNAEP, 2015). The Kenyan sugar firm, by nature of its operations, faces liquidity problems because of the financial risk exposure which negatively affects the financial performance of sugar industries (Gongera, Barrak, and Atieno, 2009; Murgor, 2008).

Odindo (2018) notes that the average cost of producing one tonne of cane in Kenya is US\$2.25 while that of the region is as low as US\$ 1.3. Instead of dealing with these high costs of production, the sugar companies have continued to hold onto obsolete technology and poor production practices. He further states that the sugar industry directly or indirectly supports six million Kenyans and contributes about 7.5 percent of the country's Gross Domestic Product and has a major impact on economies of Western Kenya and Nyanza regions.

In the past, and in most of the countries around the world, the duties of the directors are as follows: to attend board meetings, to provide advice on matters related to management of the company, to assist in management of the company with their insights, experiences, network and knowledge, and to safeguard the company assets and shareholders' interests (Clarke, 2007). The existence of boards of directors will surely prevent corporate scandals of any sort which is purely illusionary.

The financial performance of a company generally reflects the quality of its directors and the effectiveness of its board. According to Nicholson and Newton (2010), there is increasing realization on the part of corporations that a good board is a source of strength in several ways. (Lee, 2001; Carlsson, 2001). There has been renewed interest in understanding the roles of boards and top management and how they could be made more effective; the deep sense of dissatisfaction amongst shareholders regarding the poor performance of corporations, raising questions about the competency of boards, corporate greed and falling shareholder value (Healy, 2003; Becht, Bolton, and Roell, 2003).

Odindo (2018) stated that Kenya's sugar firm is dying a slow but painful death, the largest miller, Mumias Sugar Company is now living from hand to mouth, waiting for government bailouts to stay afloat. Five other publicly owned sugar millers were also either in receivership or choking under the burden of debts. Nzoia sugar was the most indebted and owed the Government and the Agricultural Food Authority at least sh28 billion in total. Muhoroni Sugar Company owed sh8 billion while Miwani had Ksh3 billion debts on its books. Sony Sugar Company and Chemelileach owed sh1 billion. The factories could not pay farmers on time while the taxman and other suppliers were also on the queue. These factories are uncompetitive and failed to implement the best corporate governance practices.

1.1. Statement of the Problem

Kenya's sugar firms have over the last decade experienced the weak financial performance with huge debts despite the frequent government bail-outs. It is predicted that, if the current trend continues to 2030, the growth forecasts in Kenya's Vision 2030 will not be attained. This, in turn, implies that the country may fail to attain the projected annual growth of 10 percent in Gross Domestic Product. The financial performance of the sugar firms has been highly unsatisfactory despite numerous government payouts being provided to them. Poor liquidity, the high cost of production and lack of good corporate governance may have a negative and significant effect on firm financial performance. The closure of sugar firms has created a crisis in the country. It is apparent that the Kenyan sugar firm has not performed financially according to the expectations of the government's goal of self-revenue sustainability of the public entities. The current study applied most current data and valid methodology namely, current liability coverage ratio to test solvency in the sugar firms in Kenya in relation to liquidity management. To measure corporate governance, this study adopted a quantitative approach involving the computation of board of directors' expenditure as a percentage of operating costs. To measure competitiveness, the study used production costs of production per tonne on firm performance which was not applied in the previous studies. Liquidity, corporate governance, and competitiveness may play a crucial role in influencing financial performance in sugar firms.

1.2. Aim and Objective of the Study

1.2.1. Aim of the Study

The aim of the study was to determine the effect of liquidity, corporate governance, and competitiveness on the financial performance of the sugar firms in Kenya.

1.3. Specific Objectives

The specific objectives of the study were:

- To determine the effect of firm liquidity current liability coverage ratios on the financial performance of the sugar firms in Kenya.
- To determine the effect of firm boards of directors' expenses and the percentage of operating costs on the financial performance of the sugar firms in Kenya.

- To determine the effect of firm production costs per tonne on the financial performance of the sugar firms in Kenya.

1.4. Research Hypotheses

To realize the study objectives, the following hypotheses guided the study:

- H₀₁: The firm liquidity current liability coverage ratio has no significant effect on the financial performance of the sugar firms in Kenya.
- H₀₂: The firm percentage of the board of directors' expenses and operating costs has no significant effect on the financial performance of the sugar firms in Kenya.
- H₀₃: The firm production costs per tonne has no significant effect on the financial performance of the sugar firms in Kenya.

1.5. Justification of the Study

Agriculture is the backbone of the Kenya economy. It gives direct and indirect employment to a large unemployed population. From the welfare point of view, in the Kenya context, it has been realized that the objective of industrialization should not neglect the agricultural sector. The government thus has the dual objective of achieving faster growth of industrialization by sustaining agriculture. It has been felt that it is only the development of agro-based industries that can help to achieve this dual goal. Among the various agro-based industries, Sugar firms constitute one of the most important agro-based industries in Kenya. The sugar firms are estimated to employ 12,500 Kenyans in sugar plantations and sugar firms. In addition, the sugar firms save Kenya more than US\$ 250 million in foreign exchange annually. A debatable question that arises in this context is that because of low productivity in agriculture, poor liquidity and the increasing competition faced there is need to establish the extent to which the Kenya sugar firms could be financially viable.

The findings of the study may help to develop a policy framework on financial performance to guide the different players in the sugar firms on optimal revenue realization and proper company asset management to make the sugar firms financially sustainable. The findings of the study may also contribute to the existing body of knowledge for future researchers on liquidity, corporate governance and competitiveness elements that may affect the financial performance of the sugar firms not only in Kenya but also in other sugar firms in the world. As the COMESA window period of opening the market in the year 2021 comes to, the study is therefore timely.

1.6. Scope of the Study

The study expounded on the financial performance of the sugar firms in relation to liquidity, corporate governance, and competitiveness in Kenya. The study covered 11 sugar firms located in Western and Nyanza regions. These are Chemelil Mumias, Nzoia, South Nyanza, Muhoroni, West Kenya, Butali, Kibos Sugar, Soin, Sukari and Trans Mara Sugar. The research covered the period twelve years starting 30th June 2005 to 2016. The overall objective was to determine the effect of liquidity, corporate governance, and the competitiveness of the sugar firms in Kenya.

1.7. Conceptual Framework

A conceptual framework was used in the research to outline courses of action or to present a preferred approach to an idea or thought. The conceptual framework applied in this study is adopted from Liquidity, Stakeholder and Classical theories.

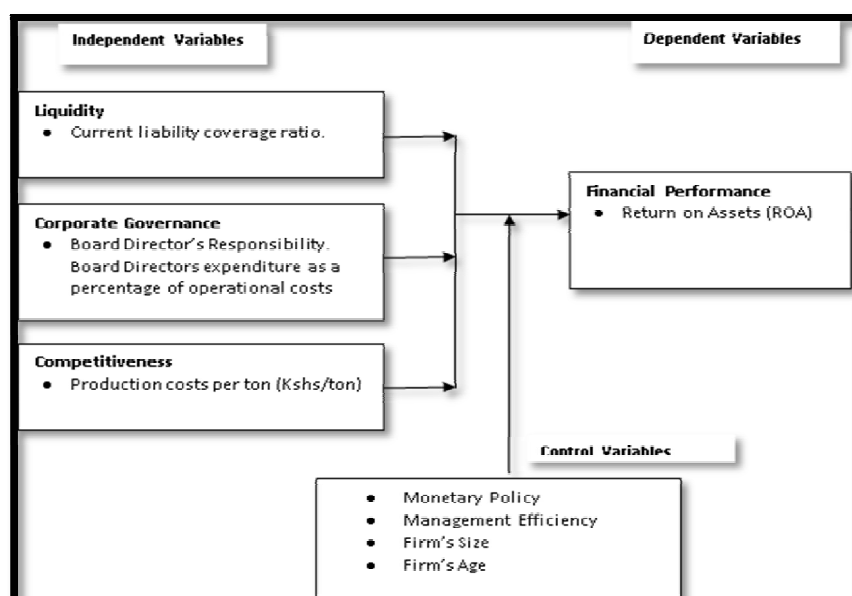


Figure 1: Relationship between Liquidity, Corporate Governance, Competitiveness and Financial Performance of the Sugar Industry in Kenya

2. Research Methodology

2.1. Research Design

A cross-sectional retrospective research design was used for this study where the effect of liquidity, corporate governance and competitiveness was assessed in relation to the financial performance of sugar firms in Kenya. It is a type of descriptive, observational study, involves measuring different variables in the population of interest at a single point in time (Breakwell et. al., 2006). It is a quantitative approach that seeks to provide empirical evidence strategy since the research has a greater focus on numbers and the use of hypotheses and statistical tools to analyze them.

2.2. The Study Area

The area of study covered the sugar sub-sector that comprises three sugar belts in Kenya, namely the Nyando, the western sugar belt, and South Nyanza Sugar zone. Nyanza sugar belt lies between latitudes 0° 02'S and 0° 05'S; and longitudes 34° 51'E and 35° 03'E while Western belt is between 000 36" 00" N to 000 24" 00" N latitude and 340 21" 00" E to 340 39" 00" E longitude and Nyando sugar belt at approximately 35° 12E longitude and 001° 8S latitude. The area under sugarcane cultivation is 123,622 hectares of which 111,189 hectares are farmed by smallholders and 12,433 is under nucleus estates.

2.3. The Target Population and Sampling Techniques

2.3.1. The Target Population

According to Mugenda and Mugenda (2003), the target population is the population to which a researcher wants to generalize the results of the study. It is an entry group of individuals or objects to which researchers are interested in generalizing the conclusions. In this study, the target population of the study, comprised five state-owned sugar firms listed by Kenya Sugar Board 2010 as in appendix 4 that were in operation and availability of the firm's secondary data within the study period of twelve years from years starting from June 2005 to 2016. They are Chemelil, Mumias, Nzoia, Muhoroni and South Nyanza.

The period of study was long enough to avoid the firms' effects. Therefore, the panel data had sixty elements.

2.3.2. Sampling Techniques

The study adopted the census sampling technique as the universe was not vast and it was reasonable to include the entire population. It gave the researcher the opportunity to have an intensive study of the problem.

2.4. Data: Type, Source and Collection Procedures

2.4.1. Type of Data

The study applied secondary data as the researcher focused on gathering numerical data and generalized it across the sugar firms to explain the effect of liquidity, corporate governance and completeness on the sugar firms in Kenya.

2.4.2. Sources of Data

The study extracted secondary data from journals and financial reports of five selected sugar manufacturing firms for the period for years starting from 30th June 2005 to 2016. Secondary data is an extension program which can add richness and depth to the logic model that acts as a roadmap for the extension program. This is preferred because of the simplicity of their administration and analysis (White, 2010).

2.4.3. Data Collection Procedure

Data collection involves gathering data on the variables included in the relationship that purports to describe the phenomenon under discussion (Mukras, 1993). Collecting good data is the key foundation on which you gather evidence and make sense of it. The main archival data was collected from sugar firms registered offices, Kenya Sugar Board and their respective websites.

2.5. Reliability and Validity Test for Data

Reliability has to do with the quality of the measurement. In its everyday sense, reliability is the "consistency" or "repeatability" of your measures. Validity indicates whether the items measure what they are designed to measure (William, 2008) Secondary data overall suitability was achieved by ensuring that unwanted data were or could be excluded and sufficient data remained for analyses. Data were evaluated with respect to several important criteria. The data was accurate as was obtained from audited financial statements and financial management reports approved by senior management. The data was relevant to the present research from 2005 to 2016. Relevance is a function of the level of aggregation of the data, as well as the units and time increments in which the data was reported. Consideration was given to the format of the data and any restrictions on their use. Prior to regression analysis, data were subjected to diagnostic tests to authenticate the reliability and validity of the data and the fitted model.

2.6. Data Analysis and Presentation of Results

Descriptive analysis was applied to describe relevant aspects of liquidity, corporate governance, and competitiveness to provide detailed information about each relevant variable. The combination of time series with cross-

section can enhance the quality and quantity of data in ways that would be impossible with only one of these two dimensions (Gujarati, 2003). Panel data analysis can provide a rich and powerful study of a set of people if one is willing to consider both the space and time dimension of the data. Correlation models, specifically Pearson correlation was applied to measure the degree of effect between different variables under consideration while regression analysis was applied to examine the relationship of the independent variables with the dependent variable and to determine the effect of selected independent variables on financial performance.

Using this method, the researcher was able to identify the significance of each explanatory variable on the explained variable as well as the significance of the overall model. The data were analyzed using the Pearson product-moment correlation and ordinary least square regression techniques to estimate parameters associated with the study variables and conduct t-tests at 95% level of significance. Results of the study were presented using tables, alongside a descriptive-analytical narrative.

2.7. Model Specification

A model is a formal representation of the notions that we have about a phenomenon in the real world. It is a simplified analytical structure designed to represent the phenomenon to study (Mukras, 1993). To study the effect of liquidity, corporate governance and competitiveness on sugar firms’ financial performance in Kenya, the study adopted a modification of estimation model used by Kuznetsov and Muravyev (2001) in their study on ownership structure and firm performance in Russia on Blue Chips of the Stock Market. Their study estimated equations of the following general form:

$$PERF_{it} = \alpha_i + \sum_j \beta_j H(j)_{it} + \sum_k \gamma_k Z(k)_{it} + \varepsilon_{it} \dots \dots \dots (3.1)$$

Where PERF is one of the selected performance measures, H(j) is the vector of variables representing ownership characteristics of the firm (variable representing ownership concentration), Z(k) is the vector of control variables, α_i refers to time-invariant firm-specific effects and a random disturbance.

This study applied the above Kuznetsov and Muravyev (2001) estimated equations to measure financial performance but applying different independent variable namely, liquidity, corporate governance, and competitiveness as independent variables to study the effect of the financial performance of the sugar firms in Kenya.

The study model took the following form

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it} \dots \dots \dots [3.2]$$

The subscript i denotes the i – th firm (the cross-section dimension) and the subscript t denotes t – th year (the time-series dimension). X_1 , X_2 , and X_3 represent Liquidity, Corporate Governance, and Competitiveness respectively. The error term is independently distributed and not sequentially correlated hence no correlation between observations.

Where

- Y_{it} = Performance measure
- X_{1it} = Independent Liquidity variable
- X_{2it} = Independent corporate governance variable
- X_{3it} = Independent Competitiveness variable
- β_0 = refers to time-invariant firm-specific effects

$\beta_1, \beta_2, \beta_3$ = Standardised regression coefficients of X_1, X_2, X_3 respectively

Based on the above model the effect of liquidity, corporate governance, and competitiveness on financial performance were evaluated using the empirical model as follow:

$$ROA_{it} = \beta_0 + \beta_1 CLCR_{it} + \beta_2 BODR_{it} + \beta_3 COST_{it} + \varepsilon_{it} \dots \dots \dots (3.3)$$

- ROA_{it} = Measure of the financial performance of the firms i at year t
- β_0 = Constant term is the intercept of the regression equation
- β_i = The coefficient of the variables and β represents the sensitivity of firm performance to changes in the movements of the various variables. (i= 1, 2, 3)
- $CLCR_{it}$ = Current liability coverage ratio of firm i at year t
- $BODR_{it}$ = Board responsibility of the firm i at year t
- $COST_{it}$ = Production Cost (Ksh/tonne) of firm i in year t
- ε_{it} = The idiosyncratic error term for firm i in year t

3. Results and Discussion

3.1. Introduction

This chapter presents the analysis of the secondary data collected from the sugar firms for the period of June 2005 to 2016 collected at the company level. The results in this chapter proceed in two distinct ways. First, we present the

descriptive analysis such as means of variables. Secondly, the inferential analysis is also presented, and this includes correlation analysis and the conventional panel data analysis including unit root test, a test of poolability, fixed effects, random effects, heteroscedasticity, and autocorrelation.

3.2. Summary Statistics

Variable	Mean	Std. Dev.	Min	Max	Skewness/Kurtosis tests for Normality
ROA	-0.318	1.188	-6.920	1.320	4.28 (0.08)
Corporate governance	3.905	3.206	0.000	17.440	0.01 (0.9964)
Competitiveness	10.510	1.315	4.090	12.030	4.99 (0.0825)
Monetary policy	9.519	2.281	6.420	15.750	2.81 (0.2452)
Management efficiency	41.672	29.819	12.060	143.940	0.16 (0.9217)
Firm size	21.970	1.832	15.860	61.000	2.77 (0.17)
Firm age	42.600	4.7980	37.000	37.000	2.05 (0.3590)
Current liabilities coverage	3.418	2.003	-0.095	7.683	3.05 (0.2182)

Table 1: Summary Statistics

Source: Sugar Firms

From Table 1 above, the summary or rather descriptive statistics of the variables adopted with a view to examining their distributional properties are presented. ROA is an indicator of what management has accomplished with the given resources (assets). According to agency theory, managers are likely to misappropriate profit, leaving less or no returns for shareholders. ROA is directly related to management's ability to efficiently utilize firms' assets, which ultimately belong to shareholders. A lower return on assets will indicate inefficiency hence poor financial performance. On average, we establish that the sugar firms are underperforming as indicated by the return on assets (ROA). The companies have a ROA of -0.32 implies that they have not been financially stable over time with the dip in financial performance for some companies being -6.92 percent. The variation in financial performance between the firms in the sugar firms is also low with the standard deviation from the mean being 1.19.

The test rejects the hypothesis of normality when the p-value is less than or equal to 0.05. Failing the normality test allows you to state with 95% confidence that the data does not fit the normal distribution. The ROA normality test indicates that it is normally distributed as the normality test has a p-value greater than 0.05.

3.2.1. Liquidity

Turning to the current liabilities' coverage ratio for the firms under consideration, it was established that the average was 3.418 percent with a reported standard deviation of 2.07 suggesting that the ratio across firms oscillates around the mean. The averages of 3.418 percent mean to imply that current cash flows can pay 3.418 percent the current liabilities, an indication that cash flows from these firms are not sufficient to pay the current liabilities.

3.2.2. Corporate Governance

On corporate governance, measured by the board responsibility index within the firms the average is 3.90 and deviates from the mean by 2.003. The best firm had a board responsibility index of 17.44 while the worst performing firm by board responsibility index metric had a zero score. Overall, the results suggest that the sugar firms' corporate governance is wanting and as such could potentially speak to the poor performance registered over time. The results showed non-adherence to defined levels of expenditures and is an expression of the irresponsibility of the board of directors and poor corporate governance. The corporate governance normality test indicates that there is normally distributed as the normality test has a p-value greater than 0.05 (i.e. p – value = 0.9964).

3.2.3. Competitiveness

Looking at competitiveness index of the sugar firms, it is established that, on average, the firms studied had a competitiveness index of 10.51 with a lower variation across firms and the highest competitiveness index being 12.03 with the least being 4.09. The competitiveness normality test indicates that they are normally distributed as the normality test has a p-value greater than 0.05 (i.e. p – value = 0.0825).

3.2.4. Monetary Policy

The monetary policy as measured by the central bank rate averaged 9.5 percent for the period under consideration with the monetary innovation over the same duration being 0.09 percent implying that the monetary policy rate has at best been inelastic. The monetary policy normality test indicates that they are normally distributed as the normality test has a p-value greater than 0.05 (p – value = 0.2452).

3.2.5. Managerial Efficiency

Managerial efficiency, a measure of a firm's effectiveness as measured the total cost of production to output stood at 41.67 percent and with a higher variation of 29.82 percent across firms. This suggests that the firm's efficiency is low as this means that allocation of resources by the firms substantially consume the output and consequently low revenues as what is generated is used to cover the costs of production. The competitiveness normality test indicates that they are normally distributed as the normality test has a p-value greater than 0.05 (p – value = 0.9217).

3.2.6. Firm Age

On average the firms surveyed had been in operations for approximately 43 years with the younger firm being in operations for 37 years and the oldest firm being in operation for 50 years. The firm size normality test indicates that they are normally distributed as the normality test has a p-value greater than 0.05.

3.2.7 Firm Size

The largest firm in terms of assets (in terms natural logarithm) was 24.18 while the smallest was 15.86 with the average firm size being 21.97. The standard deviation suggests that the size of the firms surveyed does not exhibit wide variation and varies from the mean by 1.83. The firm size normality test indicates that they are normally distributed as the normality test has a p-value greater than 0.05.

3.3. Correlational Analysis

	ROA	CGI	CI	MPI	ME	Size	Age	CLCR
Return on assets	1							
Corporate governance	-0.357 (0.0051)	1						
Competitiveness	-0.134 (0.313)	0.210 (0.110)	1					
Monetary policy	-0.0381 (0.783)	-0.0112 (0.935)	-0.006 (0.966)	1				
Management efficiency	-0.170 (0.195)	-0.276 (0.0329)	-0.0295 (0.825)	- 0.0728 (0.597)	1			
Size	0.615 (0.00)	-0.177 (0.177)	0.180 (0.171)	0.0392 (0.776)	0.00510 (0.969)	1		
Age	-0.120 (0.359)	0.0515 (0.696)	0.0747 (0.574)	0.122 (0.375)	-0.0818 (0.534)	0.129 (0.325)	1	
Current Liabilities to Coverage	-0.176 (0.178)	0.254 (0.0507)	0.122 (0.356)	0.0618 (0.654)	0.253 (0.0512)	0.138 (0.294)	0.275 (0.0334)	1

Table 2: Pearson Correlation Analysis Test for Multicollinearity

Source: Sugar Firms' Data & Authors Computation

Notes: The Values In Parenthesis Are P-Values of the Reported Correlation Coefficients. ROA Represents a Return on Assets, CLCR Is the Current Liabilities Coverage Ratio, CGI Is the Corporate Governance Index, CI Is the Competitiveness Index, MPI Is Monetary Policy Innovations, ME Is Management Efficiency, While Size and Age Are Firm Size and Age Respectively.

The results as presented in Table2 shows that the Pearson Correlation coefficients are significantly low with the highest correlation of 0.615 being between firm size and firm performance as measured by firm size. The observed moderate correlation between firm size and performance implies that there is a positive effect between and as such an increase in firm size is associated with an increase in firm performance though it does not necessarily imply causation. The other variables have the effects amongst them being in the range of ± 0.3574 which is interpreted as being weakly correlated.

The Pearson correlation analysis results presented in Table1 above measures the degree of effect and the direction amongst the variables and is an indication of the extent of multicollinearity. Multi-collinearity is a problem in multiple regressions that develops when one or more of the independent variables are highly correlated with one or more of the other independent variables. If an independent variable is an exact linear combination of the other independent variables, then it is concluded that the model suffers perfect collinearity, and it cannot be estimated by OLS (Brooks 2008).

Failure to account for perfect multicollinearity results in determining regression coefficients and infinite standard errors while the existence of imperfect multi-collinearity results into large standard errors. Large standard errors affect the precision and accuracy of rejection or failure to reject the null hypothesis. According to Gujarati (2004), the standard statistical method for testing data for multicollinearity is analyzing the explanatory variables correlation coefficients (CC); condition index (CI) and variance inflation factor (VIF). Therefore, in this study, to determine multi-collinearity two techniques are adopted; the first approach is the Pearson correlation coefficients and the second approach is the variance inflation factors (VIF) and tolerance approach.

The correlation findings reveal that there is a negative and significant relationship between corporate governance, as measured by the percentage of the board of directors' expenses and operating costs and firm performance, that is ($r = -0.357$). This finding implies that a higher score in the index of corporate governance, as measured by the percentage of the board of directors' expenses and operating costs has a negative effect and an increase in this index was associated with a decline in profitability (ROA)

The correlation of other variables (i.e. competitiveness, age and management efficiency) with the dependent variable is ($r = -0.134$, $r = -0.120$ and $r = -0.170$) respectively shows that a higher index of competitiveness, as proxied by the firm's production costs per tonne an increase in a firm's age and management efficiency are inversely related to firm performance, an indication that they are not well aligned to a firm's operations thereby adversely affecting their performance. On the other hand, firm size has a positive and significant correlation with firm performance ($r = 0.615$) thus implying that an increase in firm size increases the firm value which could either be through its ability to capture a larger market share compared to her competitors. Monetary policy, as measured by the central bank rate (CBR) has a negative effect on firm performance ($r = -0.0381$).

3.4. Fixed Effects Regression Results

Dependent Variable: ROA	Coef.	Std. Err.	T	P-value	[95% Conf. Interval]	
Constant	14.174	5.570	2.540	0.015	2.933	25.416
Corporate governance	-0.066	0.032	-2.080	0.044	-0.130	-0.002
Competitiveness	-0.308	0.065	-4.720	0.000	-0.440	-0.177
Monetary policy	-0.011	0.035	-0.300	0.764	-0.081	0.060
Management efficiency	-0.009	0.003	-2.810	0.007	-0.016	-0.003
Firm size	0.510	0.062	8.220	0.000	0.385	0.636
Firm age	-5.573	1.287	-4.330	0.000	-8.170	-2.976
Current Liabilities to Coverage	-0.052	0.055	-0.940	0.350	-0.163	0.059
F(7,42)	25.60					
Prob > F	0.00					
Overall Adjusted R-square	0.5137					

Table 3: Fixed Effects Regression Results

Table 3 suggests that, on the basis of the coefficient of multiple determination (i.e. R^2) and the F-Statistic, the model has satisfactorily explained the phenomenon. The statistic $R^2 = 51.37\%$ suggests that 51.37% of the variations of ROA have been explained, whereas the F-Statistic was found to be statistically significant at 5% level of significance. The phenomenon has been explained by seven independent variables, five independent variables which include: corporate governance ($\beta = -0.066$, p-value = 0.044), competitiveness ($\beta = -0.308$, p-value = 0.000), management efficiency ($\beta = -0.009$, p-value = 0.007), firm age ($\beta = -5.573$, p-value = 0.000) and current liabilities to coverage ($\beta = -0.052$, p-value = 0.350) all had negative significant effects on financial performance: Firm size ($\beta = 0.510$, p-value = 0.000) had positive significant effects on the financial performance. However, monetary policy ($\beta = -0.011$, p-value = 0.764) had negative insignificant effects on the financial performance

3.4.1. Objective 1: The Effect of Firm Liquidity Current Liability Coverage Ratios on the Financial Performance of the Sugar Firms in Kenya

The regression results for the fixed effects model reveals that the effect between current liabilities coverage ratio and financial performance is negative ($\beta = -0.052$, p-value = 0.350) though insignificant at 5% level of significance. This therefore invariably means that as a firm's current liabilities coverage goes up ratio (liquidity deteriorates) the financial performance of a firm deteriorates. The results were consistent findings of many researchers who concluded that liquidity management would improve the firm is worth and its operating performance

3.4.2. Objective 2: The Effect Of Firm Ratios of the Percentage of the Board of Directors' Expenses and Operating Costs on the Financial Performance of the Sugar Firms In Kenya

Secondly, we observe that corporate governance, as measured by the percentage of the board of directors' expenses and operating costs have a negative effect on financial performance ($\beta = -0.066$, p-value = 0.044) thus implying that a higher value of the percentage of the board of directors' expenses and operating costs adversely affects a firm's financial performance. This suggests that sugar firms need to adopt the corporate governance practices by setting and

adhering to attainable budgets to improve their financial performance. This suggests an indirect causal effect between boards of directors and company performance. The study concludes that firms' ratios of the percentage of the board of directors' expenses and operating costs affect the financial performance of the sugar firms in Kenya.

3.4.3. Objective 3: The Effect of Firm Production Costs per Tonne on the Financial Performance of the Sugar Firms In Kenya

We also established that competitiveness, as proxied by the firm's production costs per tonne, has a statistically significant negative effect on a firm's financial performance ($\beta = -0.308$, $p\text{-value} = 0.000$). This finding is consistent with the expected theoretical expectation that the higher a firm's production costs per tonne, the higher their operational costs. They are thus considered less competitive and this negatively affects their financial performance. In addition, higher production costs imply that more resources at the expense of prudent financial management are incurred and thereby reducing the profit margins and consequently their return on assets.

4. Conclusion and Recommendations

This study has achieved its main objective. The results of the data analyses undertaken to empirically test the hypotheses have been presented. The results have indicated support for many hypotheses linking liquidity, corporate governance, and competitiveness on factory financial performance. More specifically, the study has comprehensively investigated the effect of liquidity, corporate governance, and competitiveness on the financial performance of sugar firms in Kenya. Essentially, this study has used the fixed effects, empirical model, to examine the effect between liquidity, corporate governance, and competitiveness on the financial performance of the sugar firms in Kenya using data for the period ending June 2005-2016.

The empirical examination of the hypotheses developed from the conceptual framework presented in this study reveals a mixed set of results. Liquidity current liability coverage ratios were found to be negatively associated with firms' performance, indicating that a higher value of liquidity current liability invariably influences a firm's financial position. The firms' ratio of the percentage of the board of directors' expenses and operating costs were found to have a negative effect on firms' performance. This shows signs of entrenchment when the boards and firms are small. This indicates support for agency theory. However, firms with large boards and a huge board of directors' expenses and operating costs negatively affect firms' performance. This provided contrary evidence to the evidence of alignment propounded by stewardship theory. Lastly, with respect to competitiveness, that is, firms' production costs per tonne, firms with small production costs per tonne seem to perform highly as compared to those with high firms' production costs per tonne.

5. Conclusions

The first conclusion on objective one drawn from the study findings is that liquidity current liability coverage has a negative effect on the financial performance of sugar firms as indicated by the correlation and regression analyses results. The firms operate on low or negative cash flows, highly geared and lack of asset and liability strategies that could improve their financial performance.

On objective two, we conclude that corporate governance as measured by the percentage of the board of directors' expenses and operating costs negatively affect financial performance as observed from the regression and correlation analyses results and hypothesis testing results. The regression, correlation, and hypothesis testing results established that the effect between corporate governance and financial performance is negative and statistically significant. A higher percentage of the board of directors' expenses and operating costs thus impair a firm's financial performance.

The third conclusion on objective three drawn from the study findings is that a firm's production costs per tonne as a measure of competitiveness negatively affect the firm's financial performance. The regression and correlation analyses and the hypothesis testing results showed a statistically significant negative effect between firms' production costs per tonne and financial performance of the sugar firms. Which leads us to conclude, that the higher the production costs per tonne, the less profitable an entity is and as such policy should encourage cost minimization measures.

6. Recommendations for Policy

The following policy recommendations are proposed based on the study. Their implementation will help resuscitate the overall financial performance of firms in the sugar firms and hopefully reverse their financial performance fortunes.

From conclusions on objective one, the results showed the effect between current liabilities coverage ratio and financial performance is negative therefore there is a need for adequate consideration and planning of funding liquidity management in sugar firms. The sugar firms under study are heavily indebted and near-insolvent as indicated by the results from secondary data analysis. The sugar firms should implement appropriate capital structure, sound business premise, reasonable cash flow, and statement of financial position leverage combined with supported forecasts.

On the second objective, the study results showed that corporate governance, as measured by the percentage of the board of directors' expenses and operating costs has a negative and significant effect on financial performance. The sugar firms should cut board expenses and operating costs which will consequently strengthen the sector and the firm's financial position. There should be continuous monitoring and implementation of both internal and external financial issues to prevent it prejudicing financial performance.

On the last objective, the study results also established that competitiveness, as proxied by the firm's production costs per tonne, has a statistically significant negative effect on a firm's financial performance. Sugar firms should keep their production costs optimal as high costs negate their financial performance. The sugar firms should invest heavily in

raw material development and modern agrochemical practices to realize high yield at low costs. The Kenya government continues to pursue competitiveness of a liberalized sugar firms in the face of removal of COMESA safeguards by February 2021.

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