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RESEARCH ARTICLE

WORKING CAPITAL MANAGEMENT PRACTICES ON FINANCIAL PERFORMANCE OF PUBLIC OWNED SUGAR FIRMS IN WESTERN REGION, KENYA

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ABSTRACT

Working capital as a financial metric representing operating liquidity of entity, whose management involves the administration of accounts receivables, accounts payables, inventory and cash, enables continued operation and provision of sufficient cash flow to satisfy both maturing short term debt and recurrent operational cost. This enhances business' capital security, investment and performance. Sugar factories absorbs up to 60% workforce of western region and accounts for about 15% of agricultural GDP contribution. It is therefore a dominant employer and source of livelihoods for most households in the Western Kenya. Despite working capital management practices being part of these firms' financial management, the sugar firms have continued to register less than optimum performance level as evidenced by frequent call for financial intervention by the government. Limited empirical information on this situation set the basis for this paper; through establishing effect of accounts receivable (ARP), determining effect of accounts payables period (APP), analying effect of Cash Conversion Cycle (CCC) and examining effect inventory turnover period (ITO) on financial performance (ROA) of the four (4) public owned sugar firms. Using Cronbach Alpha test for internal consistency of the variables with a coefficient of 0.725 validity was established. Analysing working capital elements extracted from audited financial reports for a period 2005 to 2014, using correlation and regression (OLS) analysis method the output established a negative and significant effect of APP (= -0.129, P=0.000); CCC (=-0.041, p=0.037) while ITO was negative and insignificant (=0.131, P=0.062). ARP had positive and insignificant effect (=0.030,P=0.293) on Return on Assets (ROA) as a measure of financial performance; implying that a unit change in APP, CCC and ITO results into a negative effect on ROA while a unit change in ARP has a positive effect on ROA. R square value was established at 0.724, showing that independent variables had a higher effect on financial performance (ROA) thereby confirming model suitability. Whereas the result largely support most of the findings on this subject matter, there is need for a comparative study on both private and state owned sugar firms.

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INTRODUCTION

Working Capital related performance has become critically pertinent in measuring operational outcomes, and by extension the business performance of an organisation. According to Parasanna (1984), the process involves engaging assets in current operation of a business, normally for short– term during an accounting period of a firm i.e. within twelve months; arising from the critical characteristics of short life span, and swift transformation into other form of assets. Sagner (2010), Sharma (2009) and Vataliya (2008) conceptually interpret this to a working framework where Cash balances may therefore beheld idle for a week or two, accounts receivable may have a life span of 30 to 60 days, and inventories may be held for 30 to 90 days. Because the characteristics require quick, responsive and strategic identification of recurrent and evolving opportunities, thereby demonstrating resource capacity and productivity or performance, it sets up the need to analyse the functional relationship between working Capital Management Practices (WCMPs) and Performance of a firm.

Statement of the Problem

The sugar industry is a major contributor to the agricultural sector especial the public owned sugar firms in western region: Chemelil, Muhoroni, South Nyanza sugar factory and Mumias sugar factory. It is the mainstay of the economy and supports at least 25% of Kenyan population. The subsector accounts for about 15% of agricultural GDP, is a dominant employer of

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about 60% of the region's population and source of livelihoods for most households in the Western Kenya comprising Nyanza and Western regions counties (Central Bureau of Statistics, 2004). Business success depends heavily on the ability of financial managers' implementation of effective working capital management practices. Several studies have shown that excess investment in working capital may result into low profitability while lower investment may result into lower liquidity. Despite employment of working management practices the sugar firms have continued to perform below optimum levels in Kenya. This paper seeks to There is little empirical data to show the effect of working capital management practices on financial performance of the public owned sugar firms within Western region therefore the need for intensive investigation and analysis of effect of working capital management practices on financial performance of public owned sugar industries in western region in order to generate knowledge that would influence management decisions.

Literature review

According to Frost (2002), Performance is a general term applied to a part or to all the conducts of activities of an organization over a period of time often with reference to past or projected cost efficiency, management responsibility or accountability or the like. Thus, not just the presentation, but the quality of results achieved refers to the performance. It is therefore the degree to which financial objectives being or has been accomplished; as a process of measuring the results of a firm's policies and operations in monetary terms and determine a firm's overall financial health over a given period of time (Kyereboah 2007; Bhunia, Mukhuti and Roy 2011). The goal of such analysis is to determine the efficiency and performance of firm's management, as reflected in the financial records and reports. These results are reflected in the firm's return on investment, return on assets (ROA), shareholder value, accounting profitability and its components etc. It may therefore be treated as a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues (Olweny, 2014). There are many different ways to measure financial performance, but all measures should be taken in aggregation in such a way that bi-variate measures like ratios and multi-variate measures like regression outcomes are considered (Saliha, 2011).

Working capital management being a key issue in financial decision making focuses on maintaining efficient levels of current assets and current liabilities, in respect to each other; to ensures sufficient cash flow for short-term debt obligations and operating expenses (Pandey, 2010). He further states that since inadequate working capital leads the company to bankruptcy, while too much working wastes investable resources. It therefore aims at maintaining a *Pareto Optimality* between the variables that constitute working capital components (Dumbu and Musingafi, 2010). From the foregoing assertion, it is imperative that all firms and especially such volatile ones like the sugar subsector deals with its critical impacts. Despite employment of working capital management practices in public owned sugar companies in western Kenya, the company's financial performance have continued to fluctuate and therefore there is need for effective working capital management in order to ensure sustainable growth and development of sugar companies in western Kenya which will in turn boost the sector's profitability. It is evident that working capital decisions affect both liquidity and profitability; where excess of investments in working capital may result in low profitability and lower investment may result in poor liquidity, which therefore requires management to finds a trade-off between liquidity and profitability to maximize shareholders wealth; whose relationship is desirable. Whereas Omesa Maniagi, Musiega and Makori (2013) study established a negative relationship between accounts collection period and return on equity on manufacturing firms listed in Nairobi security exchange; which is implacably confirmatory to Maradi Salehi and Arianpoor (2012), the studies are deficient in failing to examine Accounts Receivable Period, which would reflect the timeliness of cash inflow and recurrent application to the evolving market opportunities; which subsequently would help determine a firm's capacity and profit margins. This paper therefore seeks to establish the effect of accounts receivable period (ARP) on financial performance of public owned sugar firms within western Kenya region. However the significance of cash conversion cycle cannot be overstated in SMEs; hence the need to examine it across sectoral operations, the study therefore sought to analyse the effect of cash conversion cycle on financial performance of public owned sugar firms in western region, Kenya.

Almazari (2013) while investigating the relationship between the working capital management (WCM) and the firms' profitability on a sample size of 8 Saudi cement manufacturing companies listed in the Saudi Stock Exchange for the period of 5 year from 2008-2012 established that current ratio was the most important liquidity measure which effected profitability; which implies that firms must set a trade-off in such a way that neither the liquidity nor profitability suffers. It further established that as the size of a firm increases, profitability increased, but when debt financing increased, profitability declined. Mathuva (2010) in a study of the influence of working capital management on corporate profitability found that there exists a highly significant negative relationship between the time it takes for firms to collect cash from their customers and profitability. Sharma and Kumar (2011) examining the effect of working capital on profitability of a sample of 263 non-financial BSE 500 firms listed at the Bombay Stock (BSE) for 2000 to 2008, using OLS multiple regression, had results revealing that working capital management and profitability is positively correlated; while inventory of number of days and numbers of day's accounts payable are negatively correlated with a firm's profitability, but positive relationship between number of days accounts receivables and cash conversion period and corporate profitability.

Gakure, Cheluget, Onyango and Keraro (2012) analysing the relationship between working capital management and performance of 15 manufacturing firms listed at the Nairobi NSE from 2006 to2010 on a sample of 18 companies of the 75 listed firms at the NSE; using regression model established that there is a strong negative relationship between firm's performance and liquidity of the firm. The study found that there is a negative coefficient relationship between Accounts Collection Period (ACP), Average Payment Period (APP), Inventory Holding Period (IHP) and profitability; while the Cash Conversion Cycle (CCC) was found to be positively correlated with profitability, although Average Payment Period (APP) were statistically insignificant. Raheman, Afza, Qayyum and Bodla (2010) analyzed the impact of working capital management on firm's performance in Pakistan for the

period 1998 to 2007. Balanced panel data of 204 manufacturing firms was used which are listed on Karachi Stock Exchange. The results indicate that the cash conversion cycle, net trade cycle and inventory turnover in days are significantly affecting the performance of the firms. Moreover, financial leverage, sales growth and firm size also had significant effect on the firm's profitability. The study recommended that effective policies must be formulated for the individual components of working capital. Although studies on working capital management have been carried out by various scholars, it is instructive to note that there is still ambiguity regarding the appropriate variables that might serve as proxies for working capital management. These studies do not provide clear-cut direction of the effect of working capital management practices on firm's financial performance. Further examination of these studies revealed that there is little empirical evidence on the effect of working capital management practices on the financial performance public owned sugar firms within western region Kenya especially during the period 2005 and 2014 where the firms are experiencing liquidity problem and are at the verge of collapse due to in adequate cash to meet its operating expenses (Kenya sugar board 2010).

Regression Analysis

Regression analysis was used to measure the effect of independent variables (accounts collection period, accounts payable period, inventory turnover in days and cash conversion cycle) and dependent variable (financial performance). To analyse the effect of working capital management practice son financial performance of public owned sugar firms, regression model was developed using empirical framework used by Padachi (2006) and Deloof (2003). The following regression coefficients were obtained. Table 1 shows the regression coefficients results of independent variables on dependent variables. According to model (3.1) after estimation being represented as model (4.1) with values in parentheses, representing p-values.

Effect of Accounts Receivable Period on Financial Performance: The first objective of this study was to establish the effect of accounts receivable period on financial performance of public owned sugar company. This objective was tested using the first hypothesis H_{01} which stated that there is no significant effect of accounts receivable period on financial performance of public owned sugar firms.

Table 1. Regression Coefficient Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	25.513	5.362		4.758	.000		
	ARP	.030	.028	.094	1.069	.293	.831	1.203
	APP	-.129	.024	-1.090	-5.471	.000	.163	6.133
	CCC	-.041	.019	-.446	-2.173	.037	.154	6.509
	ITO	-.131	.068	-.215	-1.929	.062	.523	1.911

MATERIALS AND METHODS

This study used correlation research design to find out the association between the independent variable (working capital management practices) on the dependent variable financial performance (ROA).ordinary least square regression (OLS) was used to determine the magnitude effect of independent variable on the dependent variable. It aimed at identifying the effect the Average collection period (ACP); Inventory turnover in days (ITO); Average payment period (APP) and Cash conversion cycle (CCC) on financial performance. The design enabled the researcher to identify the effect of the independent variables on the dependent variable. The target population for this study consisted of the 4 sugar firms within western region's audited financial statement for a period of 10years from 2005 to 2014 financial year, this period was of significance due to the fact that it was the period that the firm experienced liquidity challenges.

The panel data methodology used in which case working capital management practices and financial performance was obtained through structured documentary review of companies audited financial statement especially balance sheet, income statement and cash flow statements were reviewed. Correlation analysis and regression analysis was used to analyse the data based on a panel data set of 10 years audited financial statement from the period 2005 to 2014 obtained from secondary data of audited financial report. Cronbach's alpha coefficient was 0.725.

$$ROA = \underset{(0.000)}{25.513} + \underset{(0.293)}{0.030}\,ARP - \underset{(0.000)}{0.129}\,APP - \underset{(0.037)}{0.041}\,CCC - \underset{(0.062)}{0.131}\,ITP \quad (1.1)$$

Based on model (1.2) results, the effect is established by obtaining the derivative of ROA with respect to ARP such that;

$$\frac{\Delta ROA}{\Delta ARP} = 0.03 \quad (1.2)$$

This regression analysis results indicate that accounts receivable period (ARP) has an insignificant effect at 5% level of significance on financial performance measured by return on asset (ROA) since the p-value of 0.293>0.05. The study therefore basing on regression analysis results does not reject the null hypothesis that there is no significant effect of ARP on ROA. These results though contradict with Mathuva (2010) they conform to the findings of Gakure *et al* 2012 that established a negative but insignificant relationship between accounts receivable period and profitability of manufacturing firms listed in NSE. This depicts that public sugar firms that are not efficient in collecting debts from sales experience lower return on Assets (ROA) hence financial performance.

Effect of Accounts Payable Period on Financial Performance

The objective of this study was to determine the effect of accounts payable period on financial performance of public

owned sugar firms in western region. This objective was tested using the second hypothesis H_{02} which stated that there is no significant effect of accounts payable period on financial performance of public owned sugar firms. This depicts that companies that takes longer time before settling their bills tends to experience lower financial performance.

Based on model (1.3) results, the effect is established by obtaining the derivative of ROA with respect to APP such that;

$$\frac{\Delta ROA}{\Delta APP} = -0.129 \quad (1.3)$$

This regression analysis results indicate that accounts payable period (APP) has an significant effect at 5% level of significance on financial performance measured by return on asset (ROA) since the p-value of 0.000<0.05.The results imply that 1% increase (decrease) in accounts payable period (APP) decreases (increases) financial performance measured by return on asset (ROA) by 0.129%. This necessitated the rejection of the null hypothesis of insignificant effect and acceptance of the alternative at 5% level of significance. This study concurs with the result by Kimeli (2012) who found a negative and significant relationship between accounts payable period gross operating profit of manufacturing companies listed in Nairobi stock exchange however the result contradict that of Waithaka, (2010) that established a negative but insignificant relationship between accounts receivable period and profitability of manufacturing firms listed in NSE.

Effect of Cash Conversion Cycle on Financial Performance

The third objective sought to analyze the effect of cash conversion cycle on financial performance of public owned sugar firms this was tested using the third hypothesis H_{03} that stated there is no significant effect of cash conversion cycle on financial performance of public owned sugar firms. Based on model (1.4) results, the effect is established by obtaining the derivative of ROA with respect to CCC such that;

$$\frac{\Delta ROA}{\Delta CCC} = -0.041 \quad (1.4)$$

This regression analysis results indicate that Cash conversion cycle (CCC) has significant effect at 5% level of significance on financial performance measured by return on asset (ROA) since the p-value of 0.037<0.05. The results imply that 1% increase (decrease) in Cash conversion cycle (CCC) decreases (increases) financial performance measured by return on asset (ROA) by 0.041%**.** The studies therefore reject the null hypothesis and accept the alternative. Although the study contradict that of Raheman *et al.* (2010) found determined a positive but insignificant relationship between cash conversion cycle and ROE of 15 manufacturing firms listed in NSE, it conforms to the study by Omesa *et al.* (2013). This implies that if the public owned sugar companies are able to reduce their cash conversion cycle, it can improve its financial performance.

Effect of Inventory Turnover in days on Financial Performance

The last objective of the study was to examine the effect of inventory turnover period on financial performance of public owned sugar companies and was tested by the fourth hypothesis. H_{04} stated that there is no significant effect of inventory turnover period on financial performance of public owned sugar firms.

Based on model (1.5) results, the effect is established by obtaining the derivative of ROA with respect to ITP such that;

$$\frac{\Delta ROA}{\Delta ITP} = -0.131 \quad (1.5)$$

This regression analysis results indicate that Inventory turnover period (ITP) has an insignificant effect at 5% level of significance on financial performance measured by return on asset (ROA) since the p-value of 0.062>0.05.the result implies that 1% increase (decrease) in inventory turnover period (ITP) decreases (increases) financial performance measured by return on asset (ROA) by 0.131%**.** The study therefore accept the null hypothesis and reject the alternative.. This suggests sugar companies that hold much inventory experience poor financial performance. That is, when the time span during which inventories remain within the sugar companies increases too much capital is tied up in stock leading to poor financial performance. The companies should therefore reduce the period they take to sell the produce in order to increase or improve their financial performance This study findings differs with that of Akoto *et al.* (2013) that examined a positive but significant relationship between inventory turnover period and profitability of manufacturing firms listed in Ghana but are in line with that of Omesa *et al.* (2013).

Multicollinearity Diagnostic result

The study also conducted a multicollinearity test to test for validity of the model, and to determine if two or more predictor (independent) variables in the regression model are highly correlated. The study used tolerance and variance inflation factor (VIF) values for the predictors as a check for multicollinearity. Tolerance indicates the percent of variance in the independent variable that cannot be accounted for by the other independent variable while VIF is the inverse of tolerance. A value of 10 has been recommended as the maximum level of VIF (Hair, Anderson, Tatham & Black, 1995). Since tolerance values established were above 0.1and with the corresponding VIF values being below 10, this implies that there was no problem of autocorrelation and multicollinearity in the model.

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.851[a]	.724	.504	2.967

a. Predictors: (Constant), ITO-M, CCC-M, APP-M, ARP-M

R value in Table 2 explains the correlation coefficient between dependent and independent variables in the public owned sugar companies within western region; that is, if there is a linear relationship and the nature of the relationship if at all exists. Coefficient value 0.851 was established using the model. This illustrates a high linear relationship between financial performance and working capital management practices in public owned sugar companies. R-square values present the strength of the relationship between financial performance and independent variables and this was obtained 0.724, this value

indicated that reliance on this model will account for 72.4% of the variations in the dependent variable return on asset. From the adjusted determination coefficients, generally moderately strong linear relationship were established between dependent and independent variables. Adjusted R- square value of0.504 was established. This depicts that the regression analysis explained about 50% of the changes in public owned sugar firm's financial performance measured by the return on asset. Thus, working capital management practices have a high explanatory power of the model in the public owned sugar companies studied.

Summary, Conclusions and Recommendation

Summary

Whereas it is observed that on average, most of the sugar firms took between 39 days to collect receivables. The positive relationship found between the public owned sugar firms' financial performance and accounts receivable period indicates that firms will experience reduction in financial performance if they increase account receivables period. Public owned Sugar firms must therefore seek to adopt a neither liberal credit nor conservative policy so as to minimize bad debts and maximize sales in order to increase firms' financial performance. It was however established that the public owned sugar companies took on average 202 days, and longer accounts payable period; both of which a negative and significant effect on return on asset (ROA). This is not always in the best interest of the firms due to its negative effect on performance. Public owned Sugar companies should therefore undertake to settle all their debts and bills on time to avoid losing goodwill with their creditors including cane suppliers and financiers in the long run. Cash conversion cycle is used as measure of efficiency of working capital management practices, managers must appreciate the fact that, should cash conversion cycle gets prolonged, performance gets negatively affected. Hence, the researcher recommends that sugar firm managers should strive to improve their financial performance by reducing the cash conversion cycle to a reasonable level. They should also improve financial performance of their companies by employing effective cash management practices.

On inventory turnover in days, the public owned sugar companies took, on average, 68 days to sell their sugar. This study found negative relationship between inventory turnover in days and companies financial performance. It can be noted that in as much as maintaining higher inventory ensures firm has sufficient stock that might result in more sales, the practice also attracts other costs related to overstocking like storage, carrying, spoilages, insurance, and opportunity cost as result of too much capital being tied up in stock. On the other hand keeping low inventory may result in high liquidity. Therefore sugar firm managers should adapt proper inventory control techniques such as economic order quantity (EOQ), depending on the nature of inventory they hold. From the results, a lower average collection period is seen by the public owned sugar factory as optimal, since this means that it does not take them very long to turn its receivables into cash. In conclusion, the findings from this study suggest that companies can improve their financial performance by reducing their cash conversion cycle and by properly managing each of the components of working capital management. These findings are generally in line with many previous studies done on working capital management such as those of Raheman and Nasr (2007), Deloof (2003), and Mathuva (2010).

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