WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF STATE CORPORATIONS IN THE ENERGY SECTOR IN KENYA

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ABSTRACT

In recent years, there has been a concerning trend of declining profitability for state-owned corporations operating within this sector. The research's general objective was ascertaining the effect of working capital management on profitability in state corporations in the energy sector in Kenya. The explicit objectives were; to ascertain the effect of accounts receivables management, accounts payable management, cash management cycle on profitability and inventory management on profitability of state corporations in the energy sector in Kenya. The research was underpinned on three theories which were cash conversion cycle, Baumol Model of Cash Management and the stakeholder theory. A descriptive survey approach was employed so as to effectively explain the effect of working capital management on profitability. The research's target population was the nine Kenyan state corporations in the energy sector. Data was collected for a five-year period (2020-2024). The study utilized a census method since population was small. The research analyzed secondary data that was collected from the Office of the Auditor General and the respective state corporations audited financial reports. The study employed panel data method to collect and analyze financial information from the state corporations operating within Kenya's energy sector. The data was first analyzed descriptively utilizing frequencies, minimums, maximums, means, and standard deviations. Inferential analysis and multiple regression analysis was essential for attaining the research objectives. Diagnostic tests were done. The study suggested that working capital management has a significant positive influence on profitability. The study reported that from the regression model, approximately 68.1% of the variation in ROE among state corporations in the energy sector is explained by the combined effect of the WCM practices. Based on the correlation results, the findings of the current study showed that accounts receivables, accounts payables, cash management and inventory management are positively associated with profitability. Based on the research findings, the research recommended that State corporations in the energy sector should prioritize effective working capital management by closely monitoring cash flow, receivables, payables, and inventory levels. Implementing systematic working capital policies can help optimize liquidity while sustaining profitability. Companies should develop and enforce clear credit policies and efficient debt collection strategies to minimize delays in payment. By strategically timing payments, corporations can use payables as a low-cost source of short-term financing, thereby improving liquidity and profitability. State corporations should avoid holding excessive inventory by adopting modern inventory management techniques such as JIT or EOQ models. This will help reduce holding costs and free up capital for other productive investments. Maintaining an optimal cash balance is crucial. Corporations should forecast cash flows accurately to avoid both cash shortages and idle funds. Surplus cash should be invested in short-term, low-risk financial instruments to generate other income.

Key words: Accounts Receivable management, Cash Management, Inventory management, Accounts Payable Management.

INTRODUCTION

Background of the Study

In Kenya, the energy sector is a vital part of its infrastructure providing fuel, power, and renewable energy sources that keep the economy, industrialization and well-being of its population alive (Wambui, 2024). The sector's main players are state-owned enterprises entrusted with overseeing vital functions such the production, transmission, distribution, and generation of electricity as well as renewable energy. These companies are large companies such as KPLC, KenGen and the REREC among others. The energy industry is a capital-intensive industry, and therefore, an effective WCM is required to ensure that operations run smoothly. Lack of working cash may lead to delays in service delivery, bottlenecks in operations, and a decline in profitability. Additionally, as these state businesses are required to provide basic public services, inadequate financial management may have detrimental effects on the general public and the national economy. The profitability of these corporations depends on how efficiently they manage their current assets, liabilities, and short-term financial obligations (Ngahu, 2021).

Effective working capital managemet influences the firm's survival, operational continuity, and the preservation of liquidity and profitability (Haider, 2020). This study seeks to analyze the trade-off between WCM and a firm's profitability in depth. Working capital is commonly measured through key components such as accounts receivables, accounts payables, cash flow management, and inventory management, which collectively reflect a firm's efficiency in managing its short-term assets and liabilities (Oktavia, 2021; Briones, 2024; Wekesa & Njeru, 2022). These components serve as standard indicators in empirical research on working capital management. Consequently, this research adopted these measures to assess the effectiveness of WCM practices within the selected firms.

The Kenyan government has made significant strides in addressing these challenges. The country has set ambitious goals to increase electricity generation, diversify its energy mix, and expand access to electricity, specifically in underserved regions. These efforts are guided by policies and frameworks such as the Kenya Vision 2030 and the National Electrification Strategy, which aim to enhance energy security, affordability, and accessibility (Nyong'a, 2019). The Kenyan energy sector is regulated by the Ministry of Energy and Petroleum, which develops policies to promote an environment conducive to the effective operation and growth of the sector (Rotich, Chepkirui & Musyimi, 2024). It establishes the strategic trajectory for sector expansion and offers a long-term vision for all stakeholders (Muriuki, 2022). According

to EPRA (2022), the institutional structure of the energy sector in Kenya are the Ministry of Energy and Petroleum, EPRA, Kenya Pipeline Company, KenGen, KPLC, the Rural Electrification Authority, KETRACO, Geothermal Development Co., Kenya Nuclear Electricity Board and National Oil Corporation of Kenya. These energy sector state corporations have their headquarters in Nairobi County, Kenya.

Statement of the Problem

The energy sector in Kenya serves an imperative part in propelling the nation's economic growth and development, as it is foundational to industrialization, infrastructure development, and improving the quality of life for citizens (Materi, 2022). However, recently, there has been a concerning trend of declining profitability for state-owned corporations operating within this sector. There were diverse financial health challenges that were evident in the energy sector state corporation's audited books for the fiscal year ended 30th of June, 2023. National Oil Corporation of Kenya (NOCK) losses went up from Kshs. 1.5billion in 2022 to Kshs. 2.3billion in 2023 (NOCK, 2024). Kenya Electricity Transmission Company recorded a loss of Kshs. 632 million in 2021 (KETRACO, 2024). Rural Electrification Authority (REA) profits declined from Kshs. 6. 876 billion in 2019 to Kshs. 4.83 billion in 2023 (REA, 2024).

ROE is a key performance metric that reflects a firm's capability to realize profits relative to its equity capital, and a decline in these metric signals diminishing profitability, inefficiencies, or suboptimal resource utilization. The three major state corporations in the energy sector illustrated a fluctuating ROE in the past five years. The audited financial reports of Kenya Pipeline Company disclosed a decline of ROE from 6.2% in 2019 to 1.31% in 2020. The company's ROE improved to 5.7% in 2022. In 2022, KPC's ROE dropped to 1.18% before improving to 2.95% in 2023. Kenya Power and Lightning Company's ROE declined from 5.39% in 2019 to 3.04% in 2020 and declined further to 2.24% in 2021. The company's audited financial statements further indicated that ROE improved slightly to 2.98% in 2022 (KPLC, 2024). Audited financial statements of Kenya Electricity Generating Company disclosed a drop in ROE from 4.75% in 2019 to 3.04% in 2020 and 2.59% in 2021. The financial statements of KenGen demonstrated a further decline to 0.95% in 2022 before a slight improvement to 1.63% in 2023 (KenGen, 2021). This decline in ROE for state corporations in the energy sector raises significant concerns regarding the sector's sustainability and the optimal use of public funds (Guantai, 2023).

The factors that contributed to this decline may be complex, such as poor resource management, ineffective operations, governance issues, regulatory inefficiency, large amount of debt, and external market forces such as varying world energy prices. Moreover, the decreased profitability of these companies can result in difficulties in funding expansion initiatives, which will have an impact on the general growth and competitiveness of the energy sector, which is crucial to long-term economic ambitions of Kenya (Nyamori, 2023). Given the importance of these state corporations in supporting the energy needs of the nation, the declining ROE poses a threat to the fiscal health and operational efficiency of these entities (Nyaga, 2021). This issue necessitates immediate focus to ascertain the root reasons and

formulate permanent ways to reinstate profitability and guarantee that the energy sector can significantly aid the nation's socio-economic advancement (Wambui, 2024).

Numerous researches (Alvarez, 2021; Sensini, 2022; Braimah, 2021) on WCM and profitability have been done in different countries, highlighting the necessity to replicate such research locally. Other studies (Ahmed, 2022; Sogomi, 2022; Ngari, 2022; Othuon, 2021) in Kenya have been conducted in banks, Saccos, County Governments, manufacturing industries, agricultural sector, education institutions, constitutional commissions and the public service but no study has been conducted in the energy sector. Researchers have reported mixed findings on the effect of WCM and profitability. A positive relationship was reported by Zimon (2021), Hassan (2023), Chepkemoi (2022), Muange (2020) and Karwal (2021) while a negative relationship was reported by Alvarez (2021), Amponsah (2021) and Aldubhan (2022). The inconsistent findings suggest that more research is needed on the variables of the current study. Current literature (Mittal, 2021; Oranefo & Egbunike, 2023; Kithinji, 2022) suggests that several research efforts have focused on the specific interactions amongst the factors of WCM, rather than creating a cohesive model that interlinks these variables.

This study intended to ascertain the impact of WCM practices on the profitability of state corporations' energy sector in Kenya, addressing identified empirical, conceptual, contextual, and methodological gaps, and to propose recommendations for effective WCM to enhance firm performance.

General Objective

The study's general goal was to establish the effect of WCM on profitability of state corporations in the energy sector in Kenya.

Specific Objectives

The research's specific objectives were;

i. To determine the effect of accounts receivables management on profitability of state corporations in the energy sector in Kenya.
ii. To examine the effects of accounts payable management on profitability of state corporations in the energy sector in Kenya.
iii. To examine the effect of cash management on profitability of state corporations in the energy sector in Kenya.
iv. To establish the effect of inventory management on profitability of state corporations in the energy sector in Kenya.

Research Hypotheses

The subsequent hypotheses were tested:

H_{01}: Accounts receivables management have insignificant effect on profitability of state corporations in the energy sector in Kenya.

H_{02}: Accounts payable management have insignificant effect on profitability of state corporations in the energy sector in Kenya.

H_{03}: Cash management have insignificant effect on profitability of state corporations in the energy sector in Kenya.

H_{04}: Inventory management have insignificant effect on profitability of state corporations in the energy sector in Kenya.

THEORETICAL REVIEW

Cash Conversion Cycle Theory

This theory, postulated by Blinder and Maccini (2001), defines the cash conversion cycle as the time needed for a corporation to turn its resource inputs into cash. It assesses the efficacy with which a firm administers its working capital. Naturally, a corporation procures inventory on credit, leading to accounts payable. A firm may also extend credit for product sales, leading to accounts receivable. Consequently, cash is not engaged till the firm settles accounts payable and receives accounts receivable. The CCC quantifies the duration from cash expenditure to cash recovery (Chang, 2022). A shorter cycle results in reduced cash being locked up in business procedures, hence benefiting the company's profitability (Jaworski & Czerwonka, 2024).

The receivables in the Kenyan energy sector can be of the type of payment to the consumer (households and industries), or the government and the international clients. The payment delays in most state corporations within the energy industry adversely affect the cashflow and cause higher bad debt risks. The CCC theory can be used by Kenya Power, which is the corporation in charge of distributing electricity, by speeding up the receivables collection process. This may include enhancing billing, provision of early payment incentives or by use of collection agencies. Also, the government as a significant consumer of electricity could be influenced to make payments on time by coming up with tougher policies or rewards to paid-on-time bills. Energy companies are frequently associated with big fuel, material, and technology suppliers. The cashflow position of a company can be greatly improved through effective management of the payables period (i.e. delaying payments without the result of penalties or ruined relationships). Increasing the terms of payment to suppliers will enable firms to increase the CCC and reduce the need to borrow on short-term basis.

Baumol Model of Cash Management

The Baumol cash management model assists in assessing the optimal cash balance of a business under such conditions. It is frequently utilized for cash management and is quite effective. The model is based on the Economic Order Quantity (EOQ). The aim is to construct the optimal cash balance of the target (Barykin, 2022). In his model, Baumol posited several assumptions: the firm can accurately predict its cash needs and secure a predetermined sum at regular intervals; cash disbursements occur systematically over time; there is a stable rate of cash outflows; opportunity costs associated with cash holdings are established and remain constant; and cash holdings entail opportunity costs manifested as cash outflows (Malle, 2017).

The theory supports the study's independent variable. The Model can be particularly effective for state corporations in Kenya's energy sector in WCM and optimizing cash reserves. The cash

flows of state corporations like KPLC may be volatile due to variations in electricity consumption, seasonal demand, and tariff adjustments (Ochieng, 2023). The Baumol Model helps in calculating the optimal amount of cash needed to cover daily operations whereas minimizing transaction costs associated with replenishing cash (Dondeti, 2021). In addition, this model would help in ascertaining the amount of cash to keep on hand, so that there is a balance between having enough liquidity for operations and avoiding excess cash that could be better invested in energy infrastructure. Efficient cash management can lead to lower reliance on external borrowing (Ngunju, 2022. With adequate liquidity management, state corporations can avoid the costs associated with short-term borrowing or emergency loans, thereby improving profitability.

Stakeholder Theory

Williamson's (1984) stakeholder theory articulates a paradigm that portrays the organization as a nexus of cooperative and conflicting interests that constitute its inherent worth (Valentinov, 2023). It creates a framework for analyzing the relationships, if any, between stakeholder management practices and the realization of varied company achievement goals (Kragulj, 2022). The stakeholder theory aims to elucidate and direct the framework and functioning of the established organization. Consequently, it perceives the corporation as an organizational unit whereby various and diverse players achieve multiple, often incongruent, objectives.

The use of the Stakeholder theory of WCM and profitability in the Kenyan energy sector assists in stating corporations to overcome the multifaceted nature of the balancing between the financial sustainability and social responsibility (Nyamori, 2023). Incorporating the needs and interests of different stakeholders, state owned energy companies are able to become more efficient in their operations, increase their profitability, and serve a positive role in the economic and social development of the country. Effective stakeholder management ensures long-term success, hence facilitating the realization of national energy goals and the overall welfare of the population. WCM ensures that an energy corporation can meet its short-term financial obligations whereas continuing operations (Lekaldero, 2022). Effective WCM can balance stakeholder interests and promote profitability. A well-managed cash flow ensures the energy corporation can continue to fund public projects, infrastructure development, and maintain affordable tariffs for consumers. Effective cash management allows for timely payments to suppliers, ensuring steady supply chains and operational continuity (Maumbe, 2023).

Empirical Review

Gamlath (2021) studied on the effects of accounts receivable management on profitability at Sri Lankan publicly traded food, beverages and tobacco firms. The research obtained secondary data from 20 food beverage and tobacco companies. Data was analyzed utilizing panel data analysis for the five-year period between 2015-2019. The dependent variable ROE was employed as measures of profitability. The independent variables were; inventory turnover ratio, average collection period, receivable turnover ratio and CCC. Descriptive and multiple regression were employed for analysis. The study's findings suggested that there was a favourable substantial connection between accounts receivable management and profitability. The findings demonstrated a

substantial adverse effect of the CCC on ROE. The research was performed within beverage and tobacco industries, highlighting a contextual gap that necessitates a similar investigation in non-beverage and non-tobacco firms. The current research was carried out in state-owned energy corporations in Kenya.

Yin and Lee (2021) explored on the effect of days payables outstanding on profitability in Malaysian construction firms. Regression analysis was conducted on a panel sample of 30 building firms traded on Bursa Malaysia over a five-year span from 2015 to 2019. The outcomes suggested a substantial negative connection between days payables outstanding and gross operating profits. The research suggested that firms can optimize profitability by sustaining elevated inventory levels and settling debts more promptly. The research was carried out in Malaysia, highlighting a contextual gap that necessitated local replication of the research. The current research was performed in state-owned energy corporations in Kenya.

Rashid (2021) researched the effects of cash management on profitability of traded firms in Bangladesh. The research employed a multiple regression analysis methodology across all industrial firms traded on the Bangladesh Stock Exchange from 2016 to 2020. The research adopted a census methodology approach with thirteen manufacturing firms. Data was analysed utilizing multiple regression techniques. The research suggested that cash flow significantly impacts a firm's ability to invest in projects that generate future profits, particularly in SMEs. These results help to reinforce the thesis that companies that are concerned with ensuring positive cash flow can end up being more profitable in the long-term, particularly when they are able to re-invest profits in growth prospects. The study has been conducted at the level of manufacturing plants, which indicates the need to do a comparable study in non-manufacturing companies. The present study was conducted in Kenya state-owned energy companies.

Dave and Joshi (2021) explored the impact of inventory management on the profitability of pharmaceutical multinationals in India. The research analyzed the connection between WIP and finished goods with the operational profit of enterprises in the Indian pharmaceutical industry. Raw material, WIP, and finished goods were treated as independent variables, whilst operational profit was regarded as the dependent variable. The data was amassed from pharmaceutical firms over a decade. The data was evaluated by multiple regression. The research suggested that completed goods inventory negatively correlated with operating profit. The research was performed in pharmaceutical firms, highlighting the necessity for a comparable study in non-pharmaceutical organizations. The current research was executed in the energy industry.

RESEARCH METHODOLOGY

A descriptive survey method was utilized for the current research so as to effectively explain the effect of working capital management practices and profitability. This research design was justified to ascertain the connection between working capital management practices and profitability without manipulating the environment. This study design enabled the researcher to correlate the findings with actual data and derive plausible conclusions.

The research's target population were the nine state corporations in the energy sector. These energy sector state corporations have their headquarters in Nairobi County, Kenya (Ministry of Energy and Petroleum, 2025). Data was collected for a five-year period (2020-2024). The period pertained to contemporary times, hence offering current knowledge.

This research employed a census methodology due to the tiny population and encompassed a five-year period from 2020 to 2024. The study's period was ideal because profitability in the energy sector was erratic throughout this five-year's time. This research collected data from a total of nine state firms in the energy sector in Kenya.

This research adopted panel data method to collect and analyze financial information from state corporations operating within Kenya's energy sector.

The study analyzed panel data, based on published financial statements available in the office of the Auditor General, and in the libraries of the respective state corporations, since financial statements include financial data related to the state firms in the energy industry. The secondary data was collected by using a checklist in ascertaining the connection between WCM and profitability.

The regression model which employed was:

$$Y_{it} = + \beta 1X1_{it} + \beta 2X2_{it} + \beta 3X3_{it} + \beta 4X4_{it} + \varepsilon$$

Whereby;
Y=Dependent Variable (Profitability)
X_1= Receivable Management
X_2= Payable Management
X_3=Cash Management
X4=Inventory Management
α=the model intercept
β=Coefficient of Independent variable
i= number of state corporations in the energy sector
t= time that is year 2020, 2021, 2022, 2023 and 2024
ε=Error Term

Descriptive Statistics

Table 1 displays the basic descriptive statistics of the variables in question, namely the ROE and receivable management, payable management, cash management, and inventory management. The statistics give the summary of the mean values, spread, and range of the data collected from the sample of Kenyan state corporations operating in the energy industry.

Table 1 Descriptive Statistics

Variable	Obs	Min	Max	Mean	Std. Dev.
Return on Equity	45	-0.002	0.12	0.053	0.024
Accounts Receivable	45	0.05	0.4	0.225	0.083
Accounts Payable	45	0.03	0.35	0.19	0.074
Cash Management	45	0.1	0.6	0.31	0.102
Inventory Management	45	0.08	0.45	0.26	0.089

Source: Research Data (2026)

From Table 1, the average ROE of the state corporations in the sample is around 5.3%, ranging from slightly below zero to slightly more than 12%. This shows that while some companies may be incurring losses or minimal profits, most are returning a positive ROE. The comparatively low standard deviation suggests that the values of ROE do not spread too far in firms. Based on the independent variables, cash management has the highest average of 0.31, showing that, in average, there is a moderate cash or liquid assets being held by the companies. This also shows that there's sufficient dispersion in managing cash between the companies, as highlighted by the wider spread. Accounts receivable and inventory management also have moderate average values (0.225 and 0.260 respectively), that is, these working capital items are being managed with some consistency even though there is room for variation across the companies. Accounts payable has the lowest average (0.19) but shows considerable variation too, that is, different strategies are being followed in how companies manage their payment obligations. Minimum and maximum of all variables indicate that the data contains adequate variability, which is required for ascertaining the influence of these aspects on profitability in the regression analysis that follows.

Normality Test Results

Normality of residuals was checked so as to ascertain whether the residuals were normally distributed. Table 2 below shows the results of the tests conducted.

Table 2 Tests of Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.090	45	.200*	.920	45	.072

Research Data (2026)

Table 2 demonstrates that the results obtained from the test conducted indicate that the data is normally distributed. This is based on the fact that, for the Shapiro-Wilk test for unstandardized residuals, the results obtained indicate that since the data falls within the range where p-value > 0.05, it is evident that the null hypothesis couldn't be rejected, and thus, it can be inferred that the data was normally distributed. It is also possible to ascertain this based on the results obtained for the Kolmogorov-Smirnov test, where it is evident that the data can be tested based on the fact that the results indicate that the data falls within the range where the p-value = 0.200.

Multicollinearity Test Results

Table 3 Coefficients Results

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Accounts Receivable	.991	1.009
Accounts Payable	.982	1.019
Cash Management	.993	1.007
Inventory Management	.973	1.028

Research Data (2026)

Table 3 illustrates that all the values of VIF for independent variables, i.e., Accounts Receivable (1.009), Accounts Payable (1.019), Cash Management (1.007), and Inventory Management (1.028), are significantly lower than 10, which is the acceptable value for determining whether multicollinearity exists or not. Further, all values are significantly higher than 0.10, and hence, the results obtained in the above paragraph are reaffirmed, confirming the absence of multicollinearity, which in turn proves the independence of the predictor variables from each other. Hence, the standard errors of the beta-coefficients are not inflated, which in turn ensures the reliability of the regression model in testing the research hypotheses.

Autocorrelation Test Results

The Durbin–Watson Test is utilized in Regression Analysis to identify autocorrelation (serial correlation) in the residuals of a regression model. In social science research, a Durbin–Watson statistic ranging from 1.5 to 2.5 is typically deemed acceptable, signifying the absence of significant autocorrelation issues (Kumar, 2023).

Table 3 Autocorrelation Test

Model	Durbin-Watson
1	1.712a

a. Predictors: (Constant), Inventoty, Cash, AR, AP

b. Dependent Variable: ROE

Source: Research Data (2026)

To determine the autocorrelation of the residual of the statistical model, the Durbin-Watson statistic was used. Table 3 presents a Durbin-Watson value of 1.712 which is close to 2.0 and so, proves that the residuals of the model are not autocorrelated.

ANOVA Results

The analysis of variance was done to test the overall significance of the regression model. The results are exhibited in Table 4.

Table 4 ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.290	4	.0725	22.656	.028[b]
	Residual	.128	40	.0032		
	Total	.418	44			

a. Dependent Var.: ROE

b. Predictors: (Constant), Inventory, Cash, AR, AP

Source: Research Data (2026)

The regression model produced an F-statistic of 22.656 and p-value of 0.028 that is lower than the standard significant level of 0.05. This result shows that the model is statistically significant and that the overall effect of receivable, payable, cash and inventory management explains a substantial share of the difference in profitability (ROE) among state corporations in the Kenyan energy industry.

That is, the findings are solid to reject the null hypothesis that the WCM practices as a group do not influence profitability. Rather, the results confirm that one of the independent variables is a substantial source of ROE changes (Gujarat and Porter, 2020; Field, 2018).
The importance of regression model implies that WCM is not an operation issue but a determinant of financial performance, which is also in line with the empirical evidence that has been previously reported.

The findings are mainly applicable to Kenyan state corporations, which operate in the energy sector, where financial viability and service delivery are paramount. Since energy companies are typically constrained by substantial capital requirements and sluggish payments by individual and business customers, effective working capital management takes center stage in the process of ensuring sufficient liquidity and profitability (Kieschnick et al., 2019; Mutuku, 2021).

Regression Coefficients Results

Table 5 exhibits the coefficients of the regression model, indicating the relative contribution of each independent variable accounts receivable management (AR), accounts payable management (AP), cash management and inventory management on the dependent variable, return on equity (ROE).

Table 5 Regression Coefficients Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.120	.075		1.596	.017
	Accounts Receivable	.115	.117	.014	.9829	.025
	Accounts Payable	.113	.088	.081	1.284	.019
	Cash Management	.166	.120	.193	1.380	.004
	Inventory Management	.124	.087	.080	1.42	.013

Source: Research Data (2026

These findings show that the constant (B=0.120, p = 0.017) is statistically substantial and advocates that without the independent variables, state corporations in the Kenyan energy industry register a positive baseline profitability. This is consistent with Montgomery et al. (2021) who observe that the intercept represents the dynamics of underlying profitability that cannot be predicted by the predictor variables. The study tested the hypothesis to examine whether receivable management (AR), payable management (AP), cash management and inventory management has a substantial influence on the dependent variable, return on equity (ROE).

Hypotheses Testing

The following are the results of hypotheses tested:

H_{01}: Accounts receivables management have insignificant effect on profitability of state corporations in the energy sector in Kenya.

For accounts receivable management, the coefficient is positive (B = 0.115) and the effect is significant (p = 0.025), thus, the null hypothesis was rejected. Therefore, accounts receivables management have substantial favorable effect on profitability of state corporations in the energy sector. This is an indication that effective management of receivables increases profitability. However, the low Beta (0.014) indicates a limited relative contribution, implying that receivables play a supplementary rather than dominant role in driving profitability.

Appropriate management of accounts receivables also made a significant contribution to profitability (β = 0.115, p = 0.025). The above indicates that receiving receivables on time reduces bad debt risk, enhances liquidity, and increases the ability to reinvest in the company. By reducing the duration required to collect payments and by implementing clear credit policies, companies can positively impact their profitability. These findings also support the Liquidity-Profitability Trade-off Theory, which conceptualizes trading profitability for liquidity by balancing credit sales to maximize revenues and minimize cash inflow time lags.

H_{02}: Accounts payable management have insignificant effect on profitability of state corporations in the energy sector in Kenya.

Accounts payable management also displays a positive relationship with ROE (B = 0.113, p = 0.019) thus, the null hypothesis was rejected. Therefore, accounts payable management have substantial favourable effect on profitability of state corporations in the energy sector. This result indicates that extending payment periods to suppliers within reasonable limits provides firms with short-term financing benefits that enhance profitability.

The findings indicated that accounts payables management significantly contributed towards profitability (β = 0.113, p = 0.019). It means that maximization of payment terms allows firms to realize short-term financing advantages without incurring penalty for delay in payment.

H_{03}: Cash management have insignificant effect on profitability of state corporations in the energy sector in Kenya.

Cash management has the highest standardized coefficient (β= 0.193) and is statistically significant (p = 0.004) thus, the null hypothesis was rejected. Therefore, Cash management have substantial favourable effect on profitability of state corporations in the energy sector. Therefore, the most impactful driver of profitability between the WCM practices discussed is cash management.

Profitability was most explained by cash management (β=0.166, p = 0.004). It indicates that cash balances and cash conversion cycles are most efficiently managed, and they have the most impact on improving financial performance. Planning, budgeting, and strategic disbursements are examples of effective cash management strategies that can result in more efficient operations, less waste, fewer operating expenses, and eventually a stronger bottom line. The results also validate the Cash Conversion Cycle Model, connecting profitability results and liquidity management.

H_{04}: Inventory management have insignificant effect on profitability of state corporations in the energy sector in Kenya.

Inventory management is also significant (B = 0.124, p = 0.013) thus, the null hypothesis was rejected. Therefore, Inventory management have substantial favourable effect on profitability of state corporations in the energy sector. This result suggests that firms with efficient inventory turnover achieve cost savings and improve profitability.

The study also validated that inventory management was positively and substantially associated with profitability (β = 0.124, p = 0.013). This indicates the maximization of operation efficiency through minimizing unnecessary holdings in inventories and stock-outs and minimizing the cost of storage. These results agree with the WCM Theory, which believes that there must be reasonable amounts of inventories in order to achieve the liquidity and profitability in equilibrium.

The VIF of all independent variables are between 1.007 and 1.028, which are quite low (not 10) and the tolerance values are >0.9. This indicates that multicollinearity is not an issue in the model (Gujarati & Porter, 2020).

Conclusions and Recommendations

Conclusions

Based on correlations results, the study concluded that there is a favorable association amongst WCM and profitability. Moreover, the regression analysis demonstrated that WCM exerts a considerable favorable effect on profitability. The null hypothesis was rejected; hence, the study determined that WCM significantly enhances profitability in state firms within Kenya's energy sector. Managers who understand the intricate relationship between the WCM; such as cash, receivables, payables, and inventory and a firm's profitability are better equipped to make sound financial and operational decisions. This knowledge helps them to develop a good risk management, asset allocation and investment strategies that will be in line with the financial goals of the organization. Conservative working capital policy that puts a strong emphasis on adequate liquidity and minimization of financial risk might seem to cause short-term profits to be lower, but in the long term it can make organizations to be more profitable since the working capital policy will ensure that the organization stays afloat and also there are fewer chances of financial distress. WCM is a critical part of the profitability since it improves the cash flow, lowers the financing cost and general overall use of resources.

In the oil and gas industry where the managers of state-owned companies have to operate in a business characterized by a high-level of capital intensity and uncertain market conditions, effective WCM is indispensable. They should also skillfully operate various elements of working capital to maximize profits. These include setting of a sound policy of receivables collection to reduce bad debts and enhance cash flows, setting up a payables policy that ensures good relations with suppliers and takes advantage of good credit terms and finally setting up a sound cash planning policy to ensure the continued running of the business. Also, managing inventory is useful to prevent stockouts and holding costs. By balancing out these policies, the organization will be able to attain a sustainable balance between liquidity and profitability, and in the end enhance its financial performance and competitiveness in the industry.

Recommendations

Judging by the study findings, it is suggested that good WCM should be the priority of State corporations in the energy sector since the cash flow, receivables, payables, and inventory levels should be monitored closely. Systematic working capital policies can be used to maximize liquidity and maintain profitability. Finance and operations personnel should be taken through regular training programs to help them further their knowledge on WCM and its effect on profitability. Competent managers can make better decisions concerning finance. State companies need to invest in unified financial management solutions that apply real-time data analytics to effectively monitor and manage working capital elements. This can aid in making timely decisions and enhancing financial performance.

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