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WORKING CAPITAL MANAGEMENT AND FINANCIAL PERFORMANCE AMONG NATIONAL REFERRAL HOSPITALS IN KENYA

[1] Agenya, Lilian Akinyi, [2] Dr. Mwikamba Tumaini, PhD

[1]MBA, Finance, Jomo Kenyatta University of Agriculture and Technology;

[2,3] Lecturers, Jomo Kenyatta University of Agriculture and Technology.

ABSTRACT

The general objective of this study was to examine the effect of working capital management on financial performance among National Referral Hospitals in Kenya. To achieve the general objective, this study was guided by the following specific objectives: to find out the effect of accounts receivable and to examine the effect of accounts payable on the financial performance of National Referral Hospitals in Kenya. the study was underpinned by the transaction cost economics theory. The study used a correlational research design that targeted respondents from National Referral Hospitals in Kenya, though only two hospitals were sampled, i.e., Kenyatta National Hospital and Moi Teaching and Referral Hospital, since their bed capacity is above 1,000 and they handle a large number of patients. Census design was used to obtain views on the accounts receivable and accounts payable from the respondents. Questionnaires were used as research instruments to collect data. Quantitative data for FY 2018 to 2022 was obtained from the organization's published financial statements. The study found that accounts receivable and operating margin have a weak but favorable correlation. This result implies that although there is a correlation between the two variables, accounts receivables have a relatively minor effect on the operating margin. The results indicate a moderately favorable relationship between operating margin and accounts payable, indicating that efficient payables management can improve financial performance. The study concluded that accounts receivable within Kenya's national health referral hospitals reveal a consistent and stable working capital management strategy marked by efficient billing and collection procedures. Kenya's national health referral hospitals' accounts payable procedures provide insight into their financial management strategies, indicating a propensity for lengthier credit terms with suppliers and postponed payments. The study recommends that hospitals should acknowledge and integrate the interdependence of inventory control, cash management, and accounts receivable management.

Keywords: Accounts receivable, accounts payable, financial performance, National referral hospitals

Background of the study

Working capital Management is a financial aspect that entails cash in hand and at the bank, accounts receivable, inventory, and accounts payable. Organizations need to maintain optimum levels of cash flow to meet financial obligations. Accounts receivable arise from credit sales on services rendered to patients and other clients; inventory comprises of stock of medical supplies for purposes of meeting patients' needs; accounts payable, on the other hand, are amounts owed by organizations to providers of goods and services. Working Capital Management is a vital aspect that aids in the attainment of the financial well-being of a firm. It depicts how revenue is collected and how debtors, inventory, creditors, and cash are managed (Sagner, 2014). Working capital comprises Accounts receivable, accounts payable, inventory, cash, and cash equivalent. It is important because it's one of the vital functions of financial management in any organization. It requires policies and procedures to be put in place and close monitoring to achieve optimum working capital levels.

Kenderov (2022) noted that American small businesses are facing challenges with working capital; the rate of spending has increased, and cases of inflation and a strong dollar have been prevalent. Businesses are experiencing surplus inventory. Access to credit facilities by businesses has become more expensive due to high interest rates. Szpulak et al. (2021) stated that in order to solve the problem of dependence on the monopolistic public payer, the hospitals must effectively manage the receivables conversion cycle by regulating the length of the payables' conversion cycle to the receivables' conversion cycle. Maintaining an optimum Working Capital level is what determines an organization's success. Efficient management and control of all these components are imperative for a firm's financial health and conducive to curtailing financial distress (Ramiah et al., 2014). Shisana (2018) stressed steps that work towards improving inventory and medication orders in health facilities in South Africa. It also mentioned the aspect of the supply chain; where supplies are not getting paid; the collection of revenue is a challenge, hence funding constraints in the public health sector in South Africa.

Statement of the Problem

Financial performance depicts the financial health of an organization; public health sector financial performance is very critical as it aids in the provision of quality health care to clients. Many National Referral Hospitals in Kenya are facing financial challenges due to controlled financing and hence are not able to adequately meet the needs of such organizations. The National Assembly Paper (2019) stated challenges in 3 National Referral Hospitals in Kenya. Mathari National Teaching and Referral Hospital faced an absence of representation in the Mid Term Expenditure Framework, absence of a vote and restriction put on funds accessibility., Its Recurrent allocation was reduced from 114 million to 92 million during the FY 20128/2019. The report also highlighted the National Spinal Injury Hospital's challenges of not being able to undertake renovation of the facility due to underfunding, hence the inability to offer quality care to patients. Moi Teaching and Referral Hospital had a grants deficit of Ksh 1,286,096,427 in FY 2018/2019. Kenyatta National Hospital's cash flow status indicated a deficit of Ksh 1.591 billion in 2018/2019.

Public referral hospitals in Kenya often receive patients who cannot afford medical services, forcing the institutions to extend credit facilities, thereby straining cash flow and financial stability. These hospitals also experience untimely delivery of medical supplies, equipment shortages, and operational inefficiencies that negatively impact healthcare provision (Muturi and Ondari, 2018). Despite the financial challenges facing public referral hospitals, there remains a limited understanding of how working capital management components—such as accounts receivable, accounts payable, inventory, cash, and cash equivalents—affect financial performance in these institutions (Wekesa & Kombo, 2017) Prior research has mostly focused on private medical facilities and county hospitals, leaving a gap in understanding how working capital management affects financial performance in national referral hospitals. This study seeks to bridge this gap by investigating the impact of working capital management on the financial performance of national referral hospitals in Kenya. Understanding these relationships will provide insights into improving financial sustainability and enhancing service delivery in public healthcare institutions.

Research Objectives

The general objective of this study was to examine the effect of working capital management on financial performance among National Referral Hospitals in Kenya.

Specific objectives

1. To find out the effect of accounts receivable on the financial performance of National Referral Hospitals in Kenya.
2. To examine the effect of accounts payable on the financial performance of National Referral Hospitals in Kenya.

LITERATURE REVIEW

Theoretical Review

The study was guided by transaction cost economics theory and

Transaction Cost Economics Theory

This theory was initially proposed by Ronald Coase in 1937 and later improved by Oliver Williamson (1975, 1985); it indicates that the transaction type generates monitoring costs, controlling, and managing transactions. This theory states that organizations should strive to minimize transaction costs in managing resources. The optimum level of inventory should be managed based on a tradeoff between costs and benefits. Some costs are met in inventory; these costs include the ordering cost, which is the cost of acquiring inventory. Carrying cost is the cost of maintaining inventory and includes storage costs; it proposes cost minimization by exploring internal sources of finance. This theory is applicable in cash management in the reduction of cash handling costs by exploring internal cash resources; for inventory level, it helps to determine the optimum reorder level and frequency of the orders. It entails the assessment of internal collection mechanisms or external debt collectors in accounts receivable. Finally, its applicability in negotiating payment with suppliers; it lays emphasis on the minimization of risk by extending creditors payment period.

Firms must decide whether to handle Working Capital management activities internally or outsource based on transaction costs. optimize cash flow by balancing the cost of holding cash (liquidity costs) versus transaction costs of accessing funds, Just-in-Time (JIT) systems reduce inventory holding costs but increase transaction costs due to frequent reordering, As regards accounts receivable and accounts payable; Extending trade credit increases transaction costs due to monitoring and enforcement. Limitations of this theory include overemphasis on cost efficiency instead of other factors with regards to strategic benefits. The Transaction Cost Economic theory does not consider market changes i.e. regulatory changes that have an impact on working capital, Automation plays a key role in the reduction of transaction costs. It's enforced both in decision-making scenarios and when dealing with internal transactions. The determination of the optimum level of inventory should be based on the costs incurred and the benefits attached to the inventory levels. In conclusion, Transaction Economic Theory is a fundamental theory in economics and management that explains the existence of firms and how they optimize transaction structures. While it offers a solid framework for decision-making, it should be complemented with other strategic and behavioral considerations

Agency Theory

This theory was developed by Michael C. Jensen and William H. Meckling in 1976**.** According to this theory, agency conflicts arise from the possible deviation of interests between the shareholder's managers of an organization. The primary duty of managers is to manage the firm in such a way that it yields returns to shareholders; this, therefore, increases surplus and cash-flow figures. This theory assumes that shareholders are owners and directors act as their agents; Agency theory is applicable in budgetary control and cash flow management where Government funds are allocated to hospitals and are likely to be mismanaged or delayed, leading to inefficiencies in cash flow. There could be over-expenditure by Hospital heads on non-essential areas, affecting liquidity for critical medical supplies. As regards procuring and inventory, Managers may overstock essential medical supplies, leading to increased holding costs. The Supplier relationship may be influenced by personal interests, resulting in exaggerated prices or corruption. Delays in the payment of bills can affect cash flow and hence, impact hospitals' overall service delivery. Finally, Hospital staff may manipulate billing or engage in fraud, leading to revenue leakages.

The Implications of this theory on Working Capital Management among National Referral Hospitals include Strengthening internal controls, auditing, and financial monitoring to prevent fund mismanagement, enhancing transparent supplier selection and optimum inventory management to reduce wastage and shortages, and developing effective billing systems, debt recovery strategies, and structured supplier payment plans. Brahmedv & Leepsa (2018) assert that the size of the board impacts the agency cost; the larger the board size, the lower the agency cost. Flayyih & Khiari (2023), in their study of 30 banks listed at the Iraq Stock Exchange, found that the results indicate an agency problem. This theory aided in establishing how the management of accounts receivable, which had been entrusted with managers, impacted financial performance.

The implementation of rigorous auditing and oversight frameworks in National Referral Hospitals often leads to high administrative costs, making financial monitoring expensive and resource-intensive. Additionally, conflicting priorities among the government, hospital administrators, and

patient care needs can create inefficiencies, as each stakeholder may have different financial and operational objectives. Political and bureaucratic influence further complicates financial management, with potential interference and corruption undermining transparency and accountability. Moreover, strict financial controls, though essential for oversight, may slow down procurement processes, delaying the acquisition of essential medical supplies and negatively impacting service delivery, especially during emergencies. In summary, Agency theory enhances financial transparency and efficiency in Kenya's national referral hospitals. Effective working capital management requires strong controls, reduced agency costs, and alignment with healthcare goals. Governance reforms, digital financial systems, and performance-based management are key to improving financial management.

Conceptual Framework

This framework identified two crucial Working Capital elements: accounts receivable and accounts payable, each influencing financial performance. Accounts receivable measure the credit sales collection, impacting cash flow and accounts payable reflects how well a hospital manages its obligations to suppliers, influencing liquidity. These components collectively determine the operating margin, which indicates whether the hospital operates at a surplus or deficit, thus reflecting overall financial sustainability

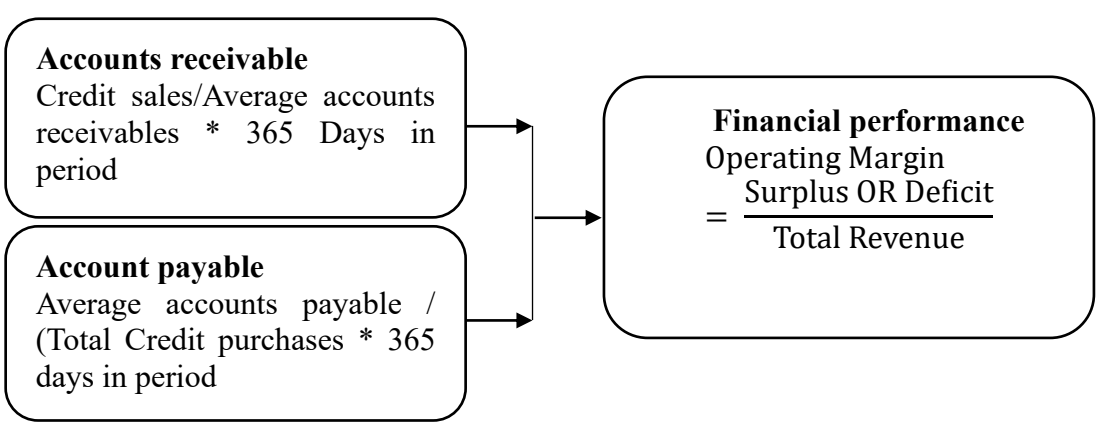

Figure 1: Conceptual Framework

Account Receivable and Financial Performance

This refers to the debt aspect in Public Health Facilities, which arise upon offering of services to clients. When clients are not able to meet the cost of medical care, they are forced to seek credit from these public health facilities. Organizations have to ensure that debts are collected within the specified duration as set out in the debt policy. Accounts receivable reconciliation is also a key factor in determining the accounts receivable status; it entails the reconciliation of customers' accounts and the organizations accounts to ascertain the accuracy the reported figures. Bad debts; debts that become overdue for a longer period and have proven irrecoverable. At this point; organizations need to focus on write-off procedures, which are required to be done in conformance to the existing policy requirements; these impact the overall recoverable debtors' balances.

Various researchers have talked about how accounts receivable impact performance. Mukhoma (2014), in his study of Accounts receivables management and financial performance of manufacturing firms, states that the foundation of accounts receivable are the policies and procedures put in place to govern it; systems must be put in place to keep track of due from clients to whom services are rendered. Owuor, Agusioma & Wafula (2021), in the study of Accounts receivable on Chartered Public Universities in Kenya, state that universities should develop optimum debt management structures to guide their financial management operations in order to realize financial performance in the short and long run.

Healthcare institutions are known for not practicing effective accounts receivable management strategies (Ahmed et al., 2014). This is believed to be the major cause of their organizational underperformance. For businesses to survive in the current dynamic market, accounts receivable must be properly managed (Adusei &Hansen, 2017). Usman (2019), in his study of working capital, indicates that the accounts receivable turnover ratio and inventory turnover ratio have a positive relationship with financial performance, while the accounts payable turnover ratio and cash conversion cycle have a significant negative relationship. Assey et al. (2020), a study of listed firms at Dar es Salaam Stock Exchange focuses on debtors' collection period, creditors payment period, inventory days and liquidity ratio. A positive correlation exists between creditors' payment period, inventory days, and liquidity ratio.

Account Payable and Financial Performance

Prior research by Achode and Rotich (2016) indicated that the effect of Accounts payable financing on **the** listed manufacturing firms varies from firm to firm. Firms with good performance registered good results. Muriuki and Matanda (2022) focused on how accounts payable turnover, accounts payable day ratio, and cover ratio affect financial performance; the results indicated that accounts payable management has a strong correlation with financial performance. Wangechi and Irungu (2023) in their study on Working Capital Management and Financial Performance of Deposit Taking Savings and Credit Cooperative Societies in Central Region, Kenya; results indicate that accounts payable had a negative correlation on performance.

RESEARCH METHODOLOGY

The study used a correlational research design to establish the relationship between independent and dependent variables. Descriptive research design was also used to describe the behavior of variables over some time. The research was based on seven National Referral Hospitals in Kenya; Kenyatta National Hospital, Moi Teaching and Referral Hospital, Kenyatta University Teaching and Referral Hospital, Mathari Teaching and Referral Hospital, National Spinal Injury Referral Hospital, Kisii Teaching and Referral Hospital, Nakuru Level 6 Hospital as defined under the Kenya Master Health Facility Registry. However, the study focused on two hospitals, Kenyatta National Hospital and Moi Teaching and Referral Hospital, since their bed capacity is above 1,000 and they handle a large number of patients. The study adopted the census technique by studying all the units in the population: Kenyatta National Hospital and Moi Teaching and Referral Hospital.

RESEARCH FINDINGS AND DISCUSSIONS

Descriptives Statistics

Descriptive statistics are useful because they give researchers the means to condense and display essential features of the data they are studying. Without drawing hasty judgments or broad generalizations, they aid in exploring, summarising, and visualizing study findings. Descriptive statistics also aid in analyzing and interpreting research findings. Additionally, measures of central tendency (e.g., mean, median, mode) that show the average value of a variable, measures of dispersion (e.g., range, variance, and standard deviation) that show the extent or variability of the data, and measures of shape (e.g., skewness, kurtosis) that show the distributional characteristics of the data are all included in descriptive statistics. Table 1 below shows the descriptive statistics.

Table 1 Descriptive Statistics

	Mean	Median	Standard Deviation	Sample Variance	Kurtosis	Skewness	Range
Accounts receivable	0.88	0.88	0.02	0.00	-0.12	0.01	0.07
Accounts payable	1.58	1.55	0.45	0.20	-2.29	0.02	0.95
Operating Margin	0.52	0.71	0.02	0.00	1.14	0.10	0.07

Account Receivable

The descriptive data provided insightful information about the working capital component of accounts receivable in Kenya's national health referral hospitals. First, a highly balanced distribution with no notable outliers skewing the data is suggested by the mean and median, which are pretty close at 0.88 and show that the average level of accounts receivable across these hospitals is consistent with the middle value of the dataset. This points to a steady and predictable trend in the hospitals' accounts receivable, which may indicate effective procedures for invoicing and collecting money or consistent terms for client payments. This stability and consistency are further supported by the sample variance of 0.00 and the small standard deviation of 0.02. The data points are closely grouped around the mean when the standard deviation is low, indicating little variation or dispersion in the hospitals' accounts receivable across the sample. This could demonstrate efficient management techniques and adherence to standard financial procedures throughout the public health field, encouraging accountability and financial discipline.

The idea of consistency and balance in the financial procedures of Kenya's national health referral institutions is further supported by the skewness, which is near zero at 0.01 and indicates a nearly symmetrical distribution of accounts receivable. This symmetry shows no discernible bias toward higher or lower values, and the dataset is relatively evenly distributed around the mean. Last, the range of 0.07 sheds light on the distribution of data points by showing how much the highest and lowest accounts receivable values across the institutions under investigation varied. The preceding findings of stability and consistency in financial performance among the tested hospitals are supported by a tight range, which indicates minimal dispersion and a more uniform distribution of accounts receivable. The descriptive statistics show that the public health sector in Kenya follows

regular and disciplined working capital management procedures, especially regarding accounts receivable. These are essential for maintaining healthcare facilities' financial stability and liquidity.

Account Payable

The descriptive statistics illuminate their financial performance and procedures by providing information about accounts payable in Kenya's national health referral hospitals. First, the average amount of accounts payable across these hospitals appears marginally more significant than the dataset's middle value, as indicated by the mean and median values of 1.58 and 1.55, respectively. This suggests that there may be a slight bias in favor of larger accounts payable values, which could signify extended credit terms or delayed payment practices with public health vendors. There is moderate variation in accounts payable across the tested hospitals, as indicated by the sample variance of 0.20 and standard deviation of 0.45. A higher standard deviation indicates that the data points are more widely distributed around the mean, which reflects a wider variety of accounts payable among the hospitals. This heterogeneity may result from variations in the financial management plans, supplier connections, or procurement procedures used by various institutions, indicating possible areas for additional research or increased operational effectiveness.

Compared to a normal distribution, the negative kurtosis of -2.29 indicates a distribution of accounts payable that is more likely to have extreme values or outliers and is flatter or spread. This could be a sign of abnormally high or low accounts payable in some hospitals, which erratic payment schedules, poor cash flow management, or differences in procurement requirements and procedures could bring on. Additionally, at 0.02, the skewness is nearly zero, indicating a nearly symmetrical accounts payable distribution and a reasonably balanced data set distributed around the mean. The prior finding of a possible skew towards higher levels of accounts payable across the tested hospitals is supported by the positive skewness, which indicates a slight tail towards higher values. Finally, the range of 0.95 indicates the significant difference in accounts payable between the hospitals' top and lowest numbers. With some institutions dealing with more severe issues or inefficiencies in handling their payables than others, this broad range highlights the variation in financial performance and management methods among Kenya's national health referral hospitals.

Operating Margin

Operating margin is a crucial indicator of financial performance and operational effectiveness in public health facilities, especially national referral hospitals. After deducting all operating costs, these hospitals typically keep 52% of their income as surplus, according to their mean operating margin of 0.52. This measure is important because it shows how well hospitals can control expenses while providing essential medical treatment. The sector's financial performance varies; as certain hospitals have operating margins below the median operating margin of 0.71. There is a slight variation around the mean operating margin, as indicated by the low standard deviation of 0.02. This consistency shows that most national referral hospitals keep their operating margins near average, demonstrating that the industry uses solid financial management techniques. This finding is further supported by the sample variance of 0.00, which shows minimal variation in operating margins across the institutions under investigation. Additional information on the distribution of operating margins can be obtained by examining the kurtosis and skewness.

Although many hospitals cluster around the mean operating margin, there are outliers with noticeably greater or lower operating margins, according to a kurtosis value of 1.14, which indicates a somewhat leptokurtic distribution. Although this variation is small, the operating margin distribution tends slightly towards larger values, as indicated by the tiny positive skewness of 0.10.

The range of 0.07 measures the variation in financial performance among national referral hospitals by highlighting the difference between the sample's highest and lowest operating margins. This variation emphasizes how crucial it is to evaluate and oversee the financial health of these organizations in order to guarantee the long-term provision of healthcare services. The thorough examination of operating margin parameters sheds light on the public health sector's national referral hospitals' efficiency, unpredictability, and financial stability. Within these vital healthcare organizations, these measures are crucial benchmarks for assessing financial performance, directing strategic decision-making, and encouraging advancements in cost control and resource allocation.

Unit root Stationary test

The unit root stationary test for panel data is a diagnostic test used to determine whether the variables in a panel dataset are stationary or exhibit a unit root. Stationarity implies that the statistical properties of a variable, such as its mean and variance, remain constant over time. On the other hand, a unit root indicates that the variable is non-stationary and exhibits a stochastic trend (Ansari et al, 2019, Majeed & Asghar, 2021). The unit root analysis was done variable-wise, and the findings were summarized in tables below.

Table 2 Unit root test for accounts receivable

	Fisher-type unit-root test for accounts receivable			
	Based on augmented Dickey-Fuller tests			
	Ho: All panels contain unit roots		*Number of panels = 2*	
	Ha: At least one panel is stationary		*Number of periods = 7*	
	AR parameter: Panel-specific		*Asymptotic: T -> Infinity*	
	Panel means and Time trends are Included.			
	Drift term: Not included		*ADF regressions: 0 lags*	
Accounts			**Statistic**	**p-value**
receivables	Inverse chi-squared (4)	P	1.0475	0.0000
	Inverse normal	Z	1.2310	0.0034
	Inverse logit (14)	L*	1.2024	0.0000
	Modified inv. chi-squared	Pm	-1.0439	0.0000

P statistic requires the number of panels to be finite.
Other statistics are suitable for a finite or infinite number of panels.

The unit root test for accounts receivable yielded p-values in Table 2, representing the significance level of the inverse chi-squared, inverse normal, inverse logit, and modified inverse chi-squared test statistics. A low p-value, usually less than a predefined significance level like 0.05, indicates strong evidence that the time series is stationary and refutes the unit root null hypothesis. All test

statistics in this instance produce p-values of 0.0000 or very close to zero, proving the stationarity of the accounts receivable variable and providing strong evidence against the existence of a unit root. This suggests that the accounts receivable's mean, variance, and autocorrelation structure maintain consistent values over time.

Table 3 Unit root test for Accounts payables

	Fisher-type unit-root test for accounts payable			
	Based on augmented Dickey-Fuller tests			
	Ho: All panels contain unit roots		*Number of panels = 2*	
	Ha: At least one panel is stationary		*Number of periods = 7*	
	AR parameter: Panel-specific		*Asymptotic: T -> Infinity*	
	Panel means and Time trends are Included.			
	Drift term: Not included		*ADF regressions: 0 lags*	
Accounts			Statistic	p-value
Payables	Inverse chi-squared (4)	P	1.7585	0.0000
	Inverse normal	Z	0.5318	0.0004
	Inverse logit (14)	L*	0.4910	0.0038
	Modified inv. chi-squared	Pm	-0.7925	0.0000

P statistic requires the number of panels to be finite.
Other statistics are suitable for a finite or infinite number of panels.

The significant level of the inverse chi-squared, inverse normal, inverse logit, and modified inverse chi-squared test statistics is indicated by the p-values in Table 3, generated from the unit root test for accounts payable. A low p-value, usually less than a predefined significance level like 0.05, indicates strong evidence that the time series is stationary and refutes the unit root null hypothesis. This test statistic yields p-values that are almost all zero, the lowest of which is 0.0000. This indicates that no unit root is present and validates the stationarity of the accounts payable variable. According to this, the accounts payable's mean, variance, and autocorrelation structure are statistical constants across time.

Hausman Test

The Hausman test is used to distinguish between fixed effects and random effects models. It serves as a model specification test to determine the appropriate Model for panel data analysis. The test helps researchers decide whether the random or fixed effects models are more suitable for the analyzed data (Rajarathinam & Suba, 2022).

Table 4. Hausman Test

Variable: y1 and x1, x2, x3	**(b)**	**(B)**	**(b-B)**	**Sqrt (diag(V_b -V_B))**		
Ho: The random effect model is the most appropriate H1: The fixed effect model is the most appropriate	Fixed Model	Random Model	Difference	S.E.	Chi2-test value	P-value
	x1 .021801	.052169	-.030368000	.0003454	2.04	0.6313
	x2 .020322	.030447	-.010125000	.0005901		
	b = consistent under Ho and Ha; obtained from xtreg					
	B = inconsistent under Ha, efficient under Ho; obtained from xtreg					

x1 - Accounts receivable
x2 - Accounts payable
y1 – Financial Performance (Operating Margin)

The null hypothesis (Ho) that the random effects model is the most appropriate Model for examining the relationship between working capital management and financial performance in Kenya's national health referral hospitals appears to be supported by insufficient evidence, according to the Hausman test results. The Chi-squared test result of 2.04 and the corresponding p-value of 0.6313, which show no statistically significant difference between the coefficients calculated by the fixed and random effects models, confirm this conclusion. The random effects model, which accounts for unobserved heterogeneity and provides more accurate estimates of the relationships between the independent variables (working capital management factors) and the dependent variable (Operating Margin), is a reasonable choice for this study based on the Hausman test results.

Correlation Analysis

Focusing on national referral hospitals, this study used a correlation analysis to investigate the connection between financial performance and working capital management in Kenya's public health system. To provide a clear indicator of fiscal health, this analysis sought to demonstrate the relationships between important working capital components, including accounts payable and accounts receivable, and financial outcomes as determined by revenue surplus or deficit. The "rule of thumb" for interpreting correlation coefficients suggests that values near +1 or -1 indicate excellent relationships, moderate correlations between 0.5 and 0.7, and strong correlations between 0.7 and 1.0. The results are summarized in Table 5.

Table 5 Correlation

		Operating Margin	Accounts receivable	Accounts payable
Operating Margin	Pearson Correlation	1	.245**	.585*
	Sig. (2-tailed)		.000	.028
	N	14	14	14
Accounts receivable	Pearson Correlation	.245**	1	-.228
	Sig. (2-tailed)	.000		.434
	N	14	14	14
Accounts payable	Pearson Correlation	.585*	-.228	1
	Sig. (2-tailed)	.028	.434	
	N	14	14	14

With a Pearson correlation coefficient of 0.245, which is significant at the 0.01 level, the study discovered a small but positive relationship between operating margin and accounts receivable. This implies a weak but noticeable correlation between national referral hospitals' operating margin and their accounts receivable levels. If properly handled, an increase in accounts receivable could boost the operating margin by reflecting prompt credit collections that support stable revenue levels. Nonetheless, the weak correlation suggests that although accounts receivable contribute to financial results, this contribution is minimal. In other words, accounts receivable techniques might help maintain financial stability, but they don't seem to be the main factor behind higher profit margins. The balance between receivables and other factors that significantly impact financial performance may be helpful for hospitals looking to maximize their working capital.

A Pearson coefficient of 0.585, significant at the 0.05 level, indicated a positive association between operating margin and accounts payable. This larger correlation implies that improvements in operating margins are associated with more significant accounts payable, which may be because hospitals have more operational flexibility when they postpone payments to suppliers. Hospitals can efficiently enhance their cash availability by extending their payment terms. This money can then be used for other strategic requirements or vital services. Ultimately, this strategy improves the operating margin by preserving liquidity and allowing for internal cash reinvestment. The results suggest that strategic accounts payable management is an essential component of working capital management, highlighting its capacity to directly impact financial results by assisting hospitals in better navigating their resource requirements.

Multivariate analysis

The study employed multivariate analysis to account for confounding variables and better understand the underlying relationships in the dataset. By using this approach, we could assess the relative contributions of important independent factors to the dependent variable, guaranteeing that the results were solid and accurately reflected the complexity of the data. Additionally, the process improved estimate precision and resulted in more informed decisions by separating the unique contributions of each variable while holding others constant. Table 6 summarizes the Random Effect Model, which was found to be appropriate based on the Hausman test.

Table 6 Multivariate Output

. xtreg Operatin_Margin Acc_receivable Acc_payable, re

Random-effects GLS regression				Number of obs	=	14
Group variable: HospitalID				Number of groups	=	2
R-sq:				Obs per group:		
within	= 0.2518			Min	=	7 =
between	= 1.0000			Avg	7.0	
overall	= 0.5213			max	=	7
Corr(u_i, X)	= 0 (assumed)			Wald chi2(4)	=	9.80
				Prob > chi2	=	0.0439
Operating_Margin	Coef.	Std. Err.	Z	P>|z|	[95% Conf.	Interval]
Acc_receivable	.3108165	.215349	1.44	0.009	-.1112597	.7328928
Acc_payable	.0175187	.0168307	1.04	0.008	-.0154688	.0505062
_cons	.2972699	.235718	1.26	0.007	-.164729	.7592688

First, the model's R-squared values show how well these factors work together to explain variations in operating margins. According to the model's overall R-squared value of 0.5213, working capital management practices account for roughly 52.13% of the variance in the operating margin across all observations. This suggests that these working capital components account for more than half of the variances in the financial performance (as determined by operating margin) of Kenya's national referral hospitals. This level of explanatory power is moderately strong, indicating that although these particular working capital management practices significantly shape the operating margin, the financial performance of these hospitals is also influenced by other factors not covered by the model. For example, a hospital's size, patient volume, government subsidies, funding sources, and external economic conditions may all affect the operating margin and explain the remaining difference. However, the overall R-squared value highlights how crucial these institutions are to efficiently manage working capital to enhance their financial results. A Wald chi-square test with a p-value of 0.0439 validates the model's significance. It confirms that the operating margin in these public hospitals is considerably impacted by the combined effects of working capital management practices.

The study shows a positive and statistically significant correlation between accounts receivable and the operating margin when looking at the individual effects of each working capital component. A rise in accounts receivable is correlated with an increase in operating margin, according to a coefficient of 0.3108 and a p-value of 0.009. This can indicate successful credit programs or delayed payment schemes that offer immediate cash flow advantages in the setting of national referral hospitals. For example, hospitals may have short-term increases in cash flow when their receivables are high, which could boost their operating margins. However, there may be possible liquidity issues if the inflow of payments becomes irregular due to overly delayed receivables.

Similarly, with a p-value of 0.008 and a coefficient of 0.0175, accounts payable positively impact the operating margin. According to this research, hospitals may keep more money in-house when they postpone paying suppliers, which could improve their financial performance. Accounts payable management aligns with a common working capital approach, which allows companies - including public health organizations - to use past-due payments as a short-term funding source.

National referral hospitals may use these phrases to cover operating costs or control cash flow variations. Hospitals must, however, handle this carefully because relying too much on late payments may strain ties with suppliers, which could eventually affect service quality and the availability of crucial medical supplies.

The model was fitted as follows:

$$Y = .2972699 + .3108165X1 + .0175187X2 + \varepsilon$$

Discussion of the Major Findings

The study's conclusions provide crucial information on the connections between the operating margin in Kenyan national referral hospitals and several aspects of working capital management, including payable and receivable. The importance of proper working capital management in the healthcare industry is shown by each component's unique interactions with operating margins. These findings show that efficient working capital management can significantly improve the operating margin, which is essential for hospitals' long-term financial viability. Hospital administrators who want to maximize financial performance while providing high-quality treatment must comprehend these dynamics.

Effective patient billing and collections administration can improve hospitals' operating margins, as seen by the positive correlation between operating margins and accounts receivable. The timely collection of these receivables becomes essential when hospitals give credit to patients or insurance companies. According to the findings, hospitals can increase cash inflows and reduce outstanding accounts receivable by using efficient procedures, which will have a favorable influence on their operating margins. In order to maintain healthy cash flows and maximize operational margins, hospitals must have strong billing policies and follow-up systems that guarantee speedy turnaround times for collections. This study aligns with Wekesa and Kombo (2017), who found that accounts receivable management and accounts accruals have a significant positive relationship with the financial performance of private medical facilities. Conversely, cash conversion cycle and accounts payable exhibited a negative relationship with financial performance. These results suggest that while efficient management of receivables and accruals can enhance profitability, prolonged cash conversion cycles and delayed payments to suppliers may adversely affect financial outcomes.

Although it has a smaller effect than accounts receivable, accounts payable also favor the operating margin. According to this research, hospitals may gain from giving suppliers and service providers longer payment periods, but generally, accounts payable have little impact on operating margins. Hospitals can still manage cash flows by supporting liquidity through strategic payables management. Hospitals may continue their daily operations by maintaining adequate money to cover operational needs without materially affecting operating margins. Even though its direct effect on profitability is small, this comprehensive understanding provides more evidence that effective payable management is essential to preserving operational stability. A study by Upadhyay et al, (2015) established that the associations between days accounts payable and

operating margins were not statistically significant, suggesting that in this context, accounts payable management did not have a discernible impact on operating margins.

Conclusion

The study examines accounts receivable in Kenya's national health referral hospitals, revealing a stable working capital management strategy with efficient billing and collection procedures. The research shows a small positive relationship between operating margin and accounts receivable but reveals a negligible effect on financial performance. To improve working capital management, hospitals should consider a comprehensive financial plan that includes cash management and inventory control, enhancing financial health, liquidity, and operational sustainability.

Kenya's national health referral hospitals' accounts payable procedures reveal a tendency for longer credit terms and postponed payments. Variations across hospitals may be due to supplier relationships and procurement techniques. Good payables management can improve financial performance, but accounts payable alone doesn't predict overall success. Hospitals should integrate accounts payable management with other financial aspects for optimal financial health and sustainability.

RECOMMENDATION

A thorough approach to financial management is necessary to improve the financial performance of Kenya's national health referral institutions. Hospitals should acknowledge and integrate the interdependence of inventory control, cash management, and accounts receivable management. By developing a unified strategy that supports effective cash flow management, healthcare organizations may increase liquidity and sustainability in their operations and ultimately improve patient care and service delivery. Optimizing accounts payable procedures is also essential. Hospitals should create strategic plans to enhance cash flow and sustain solid supplier partnerships. Hospitals can more efficiently manage resources by negotiating advantageous payment conditions and guaranteeing on-time payments, improving operational flexibility, and promoting higher operating margins. For total financial health, accounts payable administration must be in line with more general financial goals.

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