

LIQUIDITY MANAGEMENT AND PROFITABILITY OF CONSTRUCTION AND ALLIED FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE, KENYA

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International Academic Journal of Economics and Finance (IAJEF) | ISSN 2518-2366

Received: 6th January 2026

Published: 3rd February 2026

Full Length Research

Available Online at: https://iajournals.org/articles/iajef_v5_i2_241_267.pdf

Citation: Ouko, L. A., Aluoch, M. O. (2026). Liquidity management and profitability of construction and allied firms listed at the Nairobi Securities Exchange, Kenya. *International Academic Journal of Economics and Finance (IAJEF) | ISSN 2518-2366*, 5(2), 241-267.

ABSTRACT

Listed firms in Kenya's construction and allied industry have reported decline in profitability for the past few years, with some facing liquidation and takeovers. Moreover, despite having extensive research that investigate the how managing liquidity influences attaining profitability in listed firms in Kenya, their focus is not specific to the construction and allied sector. Liquidity management plays a critical role in organizations because it may affect their relationship with creditors. This is among the determinants of a firm's financial position along with profitability. Efficiency in managing liquidity factors such as inventory, receivables, cash and cash equivalents, and payables plays a critical role in optimizing business performance. Specifically, this study focuses clearly on investigating how liquidity management influences profitability of firms in Kenya's construction and allied sectors. The objectives are: how inventory, receivables, cash and cash equivalents and payables relate to profitability for listed construction and allied firms in Kenya. This study is anchored with Dynamic theory, liquidity preference theory, finance distress theory, operating cycle theory and pecking order theory. Secondary data was employed through annual reports from the constructions and allied listed firms from

2019 to 2023. The study descriptive research design and the analysis was performed using descriptive and inferential statistics with a significance test level of 0.05. Diagnostic tests such as Normal, Multicollinearity, linearity and Homoscedasticity were performed. Ethical standards were maintained throughout the study including authorization from the university and the National Commission for Science, Technology and Innovation. The study found that inventories, receivables, cash and cash equivalent and payables all have insignificant effect on the profitability of construction and allied firms listed in Kenya. These results concur with previous studies that liquidity management has not significant effect on profitability of constructions and allied firms in Kenya. The therefore concludes that liquidity management has no significant effect on profitability of constructions and allied firms in Kenya. The study therefore recommends more research on other sectors of the market since liquidity management plays a major role in the operations of the firms.

Key words: Inventory Management, Receivables Management, Cash and Cash equivalents Management, Payables Management, Profitability.

INTRODUCTION

The construction and associated sectors form a major part of the socioeconomic development in Kenya. This sector enhanced social welfare through the provision of residential and nonresidential buildings and infrastructure that would satisfy the needs of the population (Akal, 2022). Objectives of organizations pertaining to the construction and associated sectors involved maximizing organizational growth, continuity enhancement, and profitability. Nevertheless, similar to other sectors, those in construction and associated sectors encountered numerous difficulties in their external environment. This included changes in economic conditions, competition, and technological advancements. Such changes impacted the liquidity levels of firms. In this state, firms would face problems while settling their short-term liabilities. Consequently, without appropriate management of their financials, firms were bound to be declared insolvent and seek relief using bankruptcy. Thus, firms within this particular sector had to develop methods for formulating a competitive advantage, such as technological advancement.

Globally, the demand for construction increased between 2000 and the current date, despite setbacks associated with economic conditions brought about by international factors such as the Russia-Ukraine war and COVID-19. As indicated in a Deloitte (2024) report, the current value of construction globally by 2030 was estimated to be US\$14.41 trillion. China's construction sectors contributed the most to revenues. This was followed by other countries such as Japan, US, and European firms (Deloitte, 2024). Yet notwithstanding this rise in demand and investments made for growth and development in this sector, firms were challenged regarding profitability. For instance, as indicated in a report published by Le, Mai, & Nguyen (2020), Vietnam's construction sectors were least profitable among other sectors. This low profitability performance was brought about by a rise in interest rates. This made access minimal for a large amount of capital that would be used. Conversely, this profit trend for sectors in America also suffered a decline in profit margins for March to September 2020. The firms used low bids to secure jobs and continue with operations (Wasilewski, 2023). Nevertheless, their profits rose regarding their price increase for October 2020 to 2021. Despite this rise in price for their products/services with a hike in material price used in construction. This had adverse effects on their net profits.

Construction firms in Africa are also facing profitability problems. As indicated by Aliyu (2022), most construction firms in Nigeria earn negative profits because salaries, interest rates, and rents are negotiated in advance. However, profits are excluded in construction firms. This leads to uncertainty regarding construction firms' profitability. Conversely, a study conducted by Sejake, Beneke, Maseko, & Ismaila (2024) among listed construction firms in South Africa indicates that most firms have negative relationships with their suppliers because of a prolonged time for pay and a low conversion rate of inventory. Additionally, the increasing price levels of construction materials, labor, and technology have negatively affected the profitability of construction firms due to a negative relationship with suppliers. A study among construction firms in Uganda indicates that firms in this field face a threat because of a high

sunk cost associated with a huge amount of investment (Buhamizo, Muhwezi, & Sengonzi, 2023). This indicates that a low profit margin generated by construction firms might be a threat. Kenya is one of those countries in developing regions that focuses on industrialization and development of infrastructure. Through Vision 2030, Kenya has utilized sustainable economic policies for economic growth and enhancement of overall economic performance (Competition Authority of Kenya, 2017). The construction sector is a major contributor to economic advancement because of involvement in constructing roads, railway lines, schools, homes, and factories. Additionally, a major factor for focus in this assignment is that the population of Kenya has shown a sharp increase over time, leading to a need for low-cost housing. The government of Kenya has shown major investments in the construction industry based on the economic growth policy and increasing demand for housing for increasing population. Nevertheless, despite such policies and investments in the construction industry, firms' profitability in Kenya's construction and other sectors has shown a reduction with time because of increasing costs of major construction material such as cement, roofing material, and quarry material (Akal, 2022). The major reason for such increasing costs of material can be considered as rising levels of inflation and rising interests in loans obtained from financial institutions. Thus, firms in this particular industry have a responsibility of increasing management efficiency aimed at increasing liquidity and profitability.

Liquidity Management

Liquidity management forms a very important function in running and expanding any organization. Liquidity may be explained as an indicator of an organization's capability to pay off its current financial liabilities. There exist several definitions of liquidity depending on the opinions of various researchers. For instance, Kontuš & Mihanović (2019) briefly explain liquidity using current liabilities and current assets. Speaking about current assets, their constituents include inventory, accounts receivable, cash and cash equivalents, and payables. In bank-related sectors, liquidity may be explained using a bank's capability to pay off its current financial liabilities once they are due (Sathyamoorthi Mapharing & Dzimiri, 2020). Examples of current liabilities for financial institutions include withdrawals of money from deposits. There exist additional commitments such as investing and loans. Additionally, a bank needs to pay off its suppliers. Additionally, several previous researchers have explained that a negative association exists between liquidity and profitability because when liquidity is boosted, less money gets invested in profitable sectors (Sathyamoorthi & et. al., 2020; Kontuš & Mihanović, 2019). Munyaka & Yadavalli (2022) have explained that inventory includes raw materials, goods in process, and finished products that are for sale. The inventory can be quickly sold to settle current liabilities (Kipkemoi, 2019). The liquidity of a company can also be measured using inventory turnover ratio. This ratio calculates the frequency with which a company purchases and sells its inventory within a certain period of time (Kipkemoi, 2019). A good ratio indicates a great demand for the inventory and hence more sales. However, a low ratio indicates a low demand for the inventory. This means that such inventory cannot be quickly converted to cash. Inventory management should therefore focus on maintaining optimal levels for easy liquidity and reordering costs.

The other side of current assets is receivables. This defines the amount owed to the organization. Gurung & Shrestha (2023) explained this as money owed to a company by other parties. The amount of debt management efficiency for an organization can be measured using techniques such as daily sales outstanding ratio, collection efficiency index (CEI ratio), and receivables turnover ratio. For example, a low ratio shows better management of debt as compared to a low inventory turnover ratio. Additionally, for effective management of debt and to aid in sales and profitability, organizations should maintain good relations with customers when collecting debts. This was illustrated by Gurung & Shrestha (2023). Therefore, poor collection of receivables leads to a decrease in liquidity and may affect payments for current liabilities.

Cash and cash equivalents, referred to as money available within a company's office location or in a bank for settling current liabilities. This category of current assets has a high level of liquidity. Actually, cash and cash equivalents constitute money available in a company for current and future use. A company with high cash levels has strong liquidity while low levels of cash indicate a company with low liquidity. Such a company does not have sufficient money to satisfy current liabilities. Additionally, an organization with a substantial amount of cash may indicate unexploited finances. A company with unexploited finances may be considered a company with money lying idle. As such, organizations should seek optimal levels of cash. An efficiency measure for managing this asset parameter in a company is the cash ratio. This parameter indicates how much a firm's cash and cash equivalents can finance current liabilities. However, this parameter requires a ratio of 1.0. A ratio of 1.0 is an indication that a company has sufficient money to meet current liabilities without any problems. This indicates that when a company requires money to meet current liabilities, such a company would always have sufficient money. Additionally, this parameter indicates a company with unutilized and unexploited finances. A similar measure for this parameter is the cash conversion cycle. This parameter calculates the length of time it takes for inventory to be converted to money. A shorter cycle indicates efficient management of cash and cash equivalents while a longer cycle indicates a poor management of this parameter. This parameter requires a lesser number of days. A similar parameter for this study shall be used. This parameter directly uses parameters obtained from a firm's financial statements. This parameter requires a ratio of 2. A ratio of 2 indicates that a company has sufficient money for current liabilities. This parameter indicates a company with sufficient money for current liabilities.

This requires a company to pay off its payables in a short while. The payables comprise short-term liabilities of a company. They may include money owed to suppliers and interest due to bank loans. Additionally, payables may comprise payments due to bond holders. According to Susanto (2019), payables comprise "the economic sacrifice that an entity foresees that it would pay in the future as a consequence of transactions that took place in the past." Taking credit management as a critical function for maintaining optimal levels of liquidity. The amount in the account payables may comprise credits received from suppliers for a short while. While taking credits for buying inventory and services may help increase liquidity in a company for a while, having much credit may be a threat to liquidity. This may also affect a company negatively. As a consequence, profits may decline. Thus, a company's accounts payables ought

always to be below liquid assets. A company can check account payables management using an aging analysis. This indicates payments made to creditors and cases where money was retained beyond agreed repayment periods. A company may use accounts payables turnover ratio. This ratio indicates how often a firm generates money to pay off its short-term liabilities. This ratio may help a company measure how often it generates money to pay off creditors (Manihuruk, 2023). This ratio may help suppliers give credits to a company. A firm with a total payables turnover ratio with a high ratio indicates a faster payment of credits. This indicates a credit-worthy firm.

Profitability

The dependent variable for research is profitability, which refers to the financial gain from running a business or return on investment. Profitability can also be defined as a metric for growth in business values as well as a rise in income generation (Spitsin, Ryzhkova, Vukovic, & Anokhin, 2020). A firm's profitability can be determined by calculating total expenses minus revenue generated for a business in a given time. Profitability forms one of those formulas considered when measuring a company's efficiency levels when converting assets to money. The formula has great significance for those who rely on a company's accounts for decision-making.

The profitability of an entity is determined by several factors. One such factor may be operational expenses. This tends to be subtracted from revenues. The more operational expenses a firm has, the lower its profitability. Conversely, this would have a positive effect when a firm has low operational expenses. This would lead to a better level of profitability. Another such factor may be liquidity management, which guarantees that a firm maintains sufficient cash flows to cater for its current liabilities. According to Chaudhary & Raja 2021, liquidity and financial risks are inversely related, whereby a company with high liquidity has a low risk while one with low liquidity has a high financial risk. Moreover, since risk and return also have an inverse relationship, a firm with high liquidity generates lower returns than those with lower liquidity. Returns refer to the profits generated by a company through its assets. Profitability is calculated by deducting total expenses and taxes (Chaudhary & Raja, 2021). Therefore, managers should understand the factors linking liquidity to profitability to establish an optimal risk-return trade-off.

The profitability of firms in Kenya's construction and allied sector can be measured using various ratios. An excellent example is the net profit margin, which represents the proportion of net profit against revenues generated within a specific period, usually one year (Harinurdin, 2023). A high net profit margin is preferable because it shows the company is making higher profits than low-profit margins. The ratio also measures a firm's effectiveness in managing its operating and non-operating expenses, including payment of current liabilities. Profitability metric is return on investment (ROI), which measures the net profit from a project relative to its investment costs. ROI is derived from dividing the net income by the initial investment cost. A high ROI indicates better financial performance compared to a low ROI. It can also be used to measure the interest rate obligation of different construction and allied sector firms and how it affects liquidity. Current ratio and quick ratio are also critical financial ratios for evaluating

the liquidity and financial performance of commercial entities. The ratios are derived from the division of current assets by current liabilities for the current ratio and total cash and cash equivalents and current liabilities for the quick ratio. Other metrics include accounts payable turnover ratio, inventory turnover ratio, and receivables turnover ratios (Patrocínio, Madaleno, & Nogueira, 2024; Alqam Ali, & Hamshari, 2021). The three metrics affect liquidity because they measure how fast a company converts inventories to cash, pays off short-term liabilities, and converts receivables into cash through debt collection. The measure of profitability is ROI because it measures the effectiveness of converting assets to profits.

The profitability of listed companies in the construction and allied sector has declined significantly, especially in the financial year 2023. For instance, Bamburi Cements' net earnings declined from Kshs. 4,278 million in 2022 to Kshs. 1,491 in 2023 (Nairobi Securities Exchange, 2024). On the same note, East Africa Portland Cement declined from a profit of Kshs. 542 million to a loss of Kshs. 1,356 million, while Crown Paints' profits declined from Kshs 829 million to Kshs. 19 Million (Dow Jones & Company Inc., 2024; Nairobi Securities Exchange, 2024). On the other hand, East Africa Cables Ltd made losses in both years.

Construction and Allied Firms Listed at the Nairobi Securities Exchange

The Nairobi Securities Exchange (NSE) platform brings investors and borrowers together for capital investments. The institution, formerly known as the Nairobi Stock Exchange, was formed in 1954 and registered under the Companies Act in 1991 to regulate trade in financial securities among listed companies and the general public (Kalui & Musya, 2019; Nairobi Securities Exchange, 2024c). NSE operates under the Capital Markets Authority (CMA), which is mandated to regulate, service, and monitor the actions of market intermediaries (Nairobi Securities Exchange, 2024; Capital Markets Authority, 2023). The primary objective of the CMA is to promote fairness in the Kenyan capital market and boost investor confidence. The Nairobi Securities Exchange is vital in promoting individual and organizational investment in Kenya. The platform tracks the performance of over 60 listed companies from various industries in Kenya (Nairobi Securities Exchange, 2024c). The NSE groups companies based on goods and services produced, economic resources, markets, and specialized skills. Companies listed in the NSE are clustered into eleven main categories, namely: Commercial Services, Banking, Manufacturing and Allied, Insurance, Real Estate Investment Trust, Investment Services, Energy and Petroleum, Telecommunication and Technology, Exchange Traded Fund, and Construction and Allied sector (Nairobi Securities Exchange, 2024c). Moreover, listed companies publish their annual financial performance reports for the general public's consumption. Furthermore, the NSE also has a set of policies and guidelines that all listed companies must observe to promote fairness in the securities market.

One of the NSE-listed companies in the construction and allied sector is Bamburi Cement PLC, which manufactures cement and concrete. The company has subsidiaries that provide ready-mix concrete products in East Africa, mitigate the company's environmental impacts, and manage its land reserves. Bamburi Cement had a steady growth in net income from 2019 to 2022 (Nairobi Securities Exchange, 2024c). However, its profitability declined from Kshs.

4,278 million in 2022 to Kshs. 1,491 million in 2023. It is also important to note that Amsons Industry (K) Limited took over Bamburi Cement in December 2024 by buying out all its shares (Capital Market Authority, 2024). Another listed company is Crown Paints Kenya PLC, which boasts of producing 3 million liters of paint per month for sale in Kenya and its subsidiaries in East Africa (Nairobi Securities Exchange, 2024c). The company's estimated annual turnover was Kshs. 9 billion as of 2022. East Africa Cables PLC and East Africa Portland Cement Limited are also listed in the NSE, and both have operations across East Africa. East Africa Cables has not been profitable since 2020, when it lost the highest Kshs loss. 737 million (Nairobi Securities Exchange, 2024c). On the same note, the financial performance of East African Portland Cement has also not been steady, with the company only being profitable in 2021 and 2022 in the five-year run from 2019. Athi River Mining (ARM) Cement PLC is also listed in NSE as one of the constructions and allied segment operators. However, the company was liquidated in 2021 due to financial distress (Nairobi Securities Exchange, 2022). The proceeds from the liquidation were used to pay various creditors, while most of the shareholders incurred huge losses.

Statement of the Problem

Construction and allied firms are critical to economic development by providing materials and services for the construction of buildings and infrastructure (Akal, 2022). However, most of the firms in this sector have recorded minimal profit margins over the last five years, mainly due to changes in the economic environment (Nairobi Securities Exchange, 2024). For instance, East Africa Cables has not been profitable since 2020, when it experienced the highest loss of Kshs. 737 million, while Bamburi Cement's profitability declined from Kshs. 4,278 million in 2022 to Kshs. 1,491 million in 2023 (Nairobi Securities Exchange, 2024). As a result, the returns on investment for the listed companies in the construction and allied sector have also not been stable with East African Cables and East African Portland Cement having negative ROIs.

The economic factors affecting construction and allied companies include rising material costs, inflation, and a high interest rate for capital-intensive investments. In addition to this, management ineffectiveness and poor corporate strategy also affect the trend of performance among such firms. Besides low profits and losses incurred, companies such as East African Portland Cement Company have also had economic problems resulting in liquidation (Nairobi Securities Exchange, 2022). Thus, a need for effective strategies to be employed to enable better performance among construction and allied firms for optimal economic growth. The profitability of companies in the construction and associated operations in Kenya has made it a subject for research among scholars across various fields. One of the identified gaps in previous research studies is that most studies were based on a particular or a combination of sectors as explained in the literature review. Owing to the differences in sectors' operating environments, previous study results may be misleading in managerial and policy-making decisions for the construction and associated sectors. Secondly, changes in economic factors such as taxes, inflation levels, and foreign exchange rates have altered over time in the business environment for the construction and associated sectors. Thus, previous expertise applied to

today's environment would be deficient in providing effective results aimed at optimizing the financial performance of this particular sector using effective liquidity management.

Despite such differences in context, most of the studies face conceptual gaps affecting their application to the construction and allied industry. For example, a study conducted by Nyaga and Deya (2022) indicated that construction and allied companies are missing debt-to-equity ratio, asset ratio, and capital ratio figures resulting in low profitability. However, the findings do not directly associate liquidity with profitability in the industry. Several studies were also centered around the impacts of managing working capital on profitability, as discussed in the literature review section. However, liquidity is different from working capital because it evaluates the capacity of a firm in terms of payment of short-term debts, while the latter represents the net balance of current assets and current liabilities. Furthermore, the methodologies applied in collecting and analyzing research data also affect the reliability and applicability of some of the findings. For example, some of the studies use sampling methods to select participants, which may not reflect the true perspective of the industry players (Nyaga & Deya, 2022). Moreover, analyzing data from questionnaires may not give the quantitative aspect that highlights the actual profit figures. Furthermore, the studies are also subject to time limitations since new concepts emerge with changes in the economic and political environment. Finally, some studies focused on construction companies from a particular geographical area, which may limit the application of the results nationally (Njoroge & Ngahu, 2024). Therefore, there is a need for further research on the link between liquidity management and profitability among listed companies in the construction and allied industry in Kenya to enhance the findings of previous studies.

Objectives of the Study

The general objective of the study was to determine how liquidity management affects the profitability of listed firms in Kenya's construction and allied industry, considering the effects of other economic factors on liquidity. The specific objectives of the study include:

- (i) To establish the effect of inventory management on the profitability of listed companies in the construction and allied sectors in Kenya.
- (ii) To examine how receivables management, affect the profitability of listed companies in the construction and allied sectors in Kenya.
- (iii) To analyze effects of cash and cash equivalents management on the profitability of listed companies in the construction and allied sectors in Kenya.
- (iv) To evaluate the effects of Payables management on the profitability of listed companies in the construction and allied sectors in Kenya.

Research Hypothesis

H₀₁:There is no significant relationship between inventory management and profitability construction and allied firms in the Nairobi Securities Exchange

H₀₂:There is no significant relationship between receivables management and profitability construction and allied firms in the Nairobi Securities Exchange

H₀₃:There is no significant relationship between cash and cash equivalents management and profitability construction and allied firms in the Nairobi Securities Exchange

H₀₄ There is no significant relationship between payables management and profitability construction and allied firms in the Nairobi Securities Exchange

Scope of the Study

The research targets listed firms in the construction sector and associated fields in Kenya. Examples of such firms include Crown Paints Limited, East Africa Cables Limited, Bamburi Cement Limited, and East Africa Portland Cement Company Limited. The data regarding such firms can be accessed with a lot of ease considering that such firms are geographically based in one region and have modern websites. The data regarding profitability for such firms can be accessed due to a legal requirement for such firms. Moreover, obtaining a letter authorizing the collection and use of data on the selected companies for the study from the University and the National Commission for Science, Technology, and Innovation (NACOSTI) further enhanced access to data.

The research involved analyzing the companies' financial statements and calculating liquidity ratios for the past five years to gather the latest relevant data and to evaluate the movement of liquidity and profitability over the defined period. The five-year period was relevant because the targeted companies have already published their financial statements, and also gave room for analyzing the most current financial data. Additionally, the study compared financial performance across companies over the selected period. Comparing data across periods highlighted the changes in profitability in case of changes in the management of liquidity in the listed companies. The comparison helped in determining the effect of liquidity management on profitability.

LITERATURE REVIEW

Theoretical Review

The study used Dynamic Theory, Liquidity Preference Theory, Finance Distress Theory, Operating Cycle Theory and Pecking Order Theory.

Dynamic Theory

Developed by John Bates Clark in 1908, the dynamic theory states that the profits of a firm are related to the risks associated with operating in a changing business environment (Isayas, 2022). The theory is grounded on the assumption that economic factors like demand for goods and services, technological advancements, costs of raw materials, and cost of capital are dynamic, leading to unforeseen risks in an industry. Therefore, profit is viewed as a compensation for taking risks and operation in uncertain environment.

The theory holds relevance to the research because it acknowledges that the business environment is not static, and players in the industry are likely to experience fluctuations in the economic environment. This assumption is linked to the fact that the some of the causes of the instability in the profitability of listed firms in construction and the allied industry are increase in input costs, changes in the legal environment, and the adaptability of firms through implementation of effective management strategies. The theory also views profit as a compensation for taking risks. Shareholders are the primary risk takes in the firm setup, and

the management has an obligation to maximize the owners' wealth by investing funds in the ever-changing business environment.

Liquidity Preference Theory

The theory was established by John Maynard Keynes in 1936, and it argues that investors favor fast access to money. Hence, they prefer cash and cash equivalents over long-term assets (Ghani & Hossain, 2023). According to Keynes' school of thought, fixed assets have a higher interest rate but reduce liquidity. Moreover, the theory also argues that the faster an asset can be converted to cash, the higher its liquidity. This assumption explains the formulation of liquidity ratios based on current assets that can be readily sold to generate cash to settle short term financial commitments. Furthermore, the theory also states that investors' preference for liquidity is based on three main factors. First, there is the precautionary motive, which explains the desire to hold onto cash for unforeseen expenses (Ghani & Hossain, 2023). Secondly, investors' liquidity preference also depends on their speculative nature, whereby they prefer high liquidity if they expect the interest rates to decline in the future and lower liquidity if the future return on investment is expected to grow. Finally, liquidity preference is also determined by current transactions, which determine the amount of cash available at hand.

The liquidity preference theory put forward by Keynes can be observed in the current decision-making process of various firms. This theory plays a major role in financial management as it influences liquidity in a company. This can be explained by firms with liquidity problems disposing of their assets to meet their current liabilities (Oka, 2021). Such actions are aligned with the transitional reason for holding on to cash. Moreover, the theory also explains the relationship between liquidity and return on investment, where investors hold on to cash during low interest rates and invest the cash when the interest rates improve (Ghani & Hossain, 2023). The return on investment trade-off also explains how profitability affects a firm's liquidity. Since interest rates are based on a firm's performance, profitable companies are more likely to receive cash and improve their liquidity than loss-making companies. The liquidity preference theory is the anchor of the research since it explains stakeholders' attitudes and influence on liquidity management.

Finance Distress Theory

The theory was developed in 1983 by Baldwin and Scott (Walela, Omagwa, & Muathe, 2022). The theory states that firms that are unable to pay their creditors when they fall due are at risk of financial distress. Financial distress refers to a situation where a business fails to raise sufficient revenues to meet its expenditures. Financial distress may be brought about by a number of factors. For example, operational inefficiencies may lead to a rising cost of productions. This may be a factor that may bring about wastage of resources. This may reduce the profitability of a company. A business that fails to raise sufficient cash flows as a result of a drop in its sales volume may also face a potential risk of experiencing distress (Vo, 2023). Other causes of financial distress include dependency on debt financing, poor management, and stiff competition.

As mentioned earlier, financial distress arises when a firm has challenges meeting its obligations when they fall due. However, the signs of financial distress can be felt earlier before a firm declares that it has a liquidity problem (Vo, 2023). Financial distress can be predicted by analyzing financial performance and observing trends of major organizational activities like sales volume, debt collection patterns, amount of unpaid credits, and availability of cash. According to the theorists, signs of financial distress include violating debt agreements, reduced dividends, bankruptcy, and litigation cases filed by creditors. The signs may also signal that a firm's income cannot adequately meet its operating costs and shareholders' expectations. Finance distress theory was instrumental in explaining the liquidity management in listed construction and allied firms in Kenya for payables and cash and cash equivalents, especially when faced with declining profitability over the years. Furthermore, since an organization's profits is among the sources of cash for financing operations, the theory can be used to explain the link between liquidity and profitability.

Operating Cycle Theory

The model was established by Vernon Richards and Edward Laughlin in 1980, and it focuses on a company's speed in converting inventory to cash (Olaoye, Adekanbi, & Oluwadare, 2019). It measures the duration an organization takes to receive inventories and convert them to cash through sales. Essentially, the cycle encompasses purchases, sales, and receivable collection and is a function of inventory turnover and receivables (Ngari & Kamau, 2022). A shorter operating cycle is usually preferred because it indicates a positive liquidity status for an organization. On the other hand, a longer operating cycle negatively impacts liquidity because it signifies that a considerable amount from a firm's cash is held in inventories and receivables.

The ideal situation for a company is to have an optimal operating cycle that safeguards its liquidity. Being able to pay off creditors also improves a company's image and relationship with external stakeholders. However, the operating cycle may vary among companies due to differences in the type of the business (Ranaweera & Premathilaka, 2021). For instance, companies selling construction materials may have a shorter operating cycle than those undertaking construction projects that may take months or years to complete. Therefore, using the ratios from financial statements may be more appropriate when comparing firms' liquidity across the industry. The operating cycle theory was useful in understanding inventory management across listed firms in construction and allied industries in Kenya. Moreover, the cash collected forms part of the revenues and eventually net earnings, hence linking inventory management to profitability.

Pecking-Order Theory

The concept, developed by Stewart Myers and Nicolus Majiluf in 1984, outlines the hierarchy of sources of financing a firm's operations (Guizani, 2020). According to the theory, companies are likely to prioritize internal funding because it requires less effort and are less costly to obtain compared to external sources. The retained earnings, debt, and borrowings are placed at the top of this capitalization structure. This theory indicates that management has

sufficient information regarding the true value of a firm and prefers to avoid such expenses that occur when a firm borrows money.

The pecking order theory describes why firms may find it advisable to maintain a strong liquidity position. The pecking order theory can be applied to managing cash and cash equivalents for listed firms in the construction and allied fields. Firms that use this theory maintain strong levels of cash and cash equivalents in terms of retained earnings to pay off short-term liabilities instead of equity to finance their operations. Additionally, firms using this theory can also maintain strong levels of debt repayment. This results in a strong interest charge for loans taken for operations when such firms make low profits out of their operations.

Empirical Review

Inventory Management and Profitability

Sejake, Beneke, Maseko and Ismaila (2024) researched on how management of working capital shapes the financial outcomes in construction companies listed in the Johannesburg Stock Exchange from 2009-2019. The researchers used regression models to establish the link between the profitability, as observed in the changes in return on assets and return on equity, and the management of inventory, cash, payables, and receivables. According to the findings, management of accounts payables and inventory has minimal effects on the firms' profitability. Although the primary area of investigation was construction companies, the use of data from South Africa creates a contextual gap due to the differences between the economic conditions in South Africa and Kenya. Secondly, the study also used records that are more than ten years old, which may include outdated trends in the sector.

Kihara and Muturi (2023) investigated how the management of working capital influences profitability of 9 listed firms within the manufacturing sector of Kenya. Inventory management among the working capital components, and it was also taken as an independent variable during the study. From the statistical analysis, the researchers established that inventory management has a favorable association with financial performance, measured using the net operating ratio. However, using data from 2022 backward creates a data gap that may limit the reliability of findings in the current economic times. Additionally, the findings of the manufacturing sector may not be suitable for construction and allied industries, creating the need for further investigations.

Olambo and Aluoch (2022) studied about the role of working capital management in shaping the performance of listed firms in the Energy and Petroleum industry in Kenya. The data for this study was collected using administered controlled questionnaires among 191 employees working in the identified firms. Additionally, the authors retrieved secondary data from the audited reports of the identified firms. Descriptive and correlational methods were used in this study. The results of this study identified that inventory has a vital role in increasing liquidity and profitability for listed firms. Descriptive statistics was relevant to this study because secondary data was readily available. Correlation analysis was also applicable to establish an association between management of working capital and profitability of listed companies in the petroleum and energy sectors. Again, similar to other studies, this study focuses on a

particular sector. This leads to a gap in contexts. There was a need for studies in the construction and related sectors.

Muigai and Nasieku (2021) sought to determine the connection between the management of working capital and financial distress among listed non-financial companies. The authors used descriptive statistics and a longitudinal design in which data regarding the chosen firms was collected between 2009 and 2018. The firms were chosen using a census approach. In addition to this, the study utilized inferential analysis that included F-test and a confidence level of 95% to establish a hypothesis concerning the study. The outcome of this study established that a low stock-holding period decreased financial distress among listed non-financial firms in Kenya. Though based in a specific context with a perceived gap in previous literature, this research provides a critical insight regarding the management of inventory and profitability among listed firms in Kenya.

Receivables Management and Profitability

A study was conducted by Githiga and Koori (2023) to examine how working capital management influences agricultural companies' financial performance in the Nairobi Securities Exchange between 2016 and 2022. After using descriptive statistics, regression analysis, and correlation analysis, the two authors were able to determine that for each unit increase in accounts receivables, there was a decrease in return on assets for the identified companies. The application of correlation analysis was appropriate for determining how the management of working capital relates to financial performance. But operational environments and policies for agricultural sectors might be distinct when compared with those in other sectors such as construction. As such, those findings may be considered irrelevant to this study's environment. They are currently dealing with the construction sectors.

The research study conducted by Kangogo and Irungu (2020) primarily emphasized the examination of the contribution of liquidity management to profitability for four listed companies in the manufacturing and construction and allied sectors. The firms were facing problems of liquidity distress. Examination of their financial statements for a period of ten years indicated that current ratio positively influenced the profitability ratio. They recommended a shorter period for collecting receivables to increase liquidity and profitability. But their results might not be a true representation for firms in other sectors such as construction and allied sectors because of major changes that have taken place in the legal-economic environment for a period of five years.

Olaoye et al. (2019) researched on the contribution of management of working capital to the profitability of 10 listed companies in Nigeria Stock Exchange between 2008 and 2017. Olaoye et al. used regression analysis based on data emanating from reports of the identified companies. The finding of this study indicated an inverse relation between cash collection and return on assets by -1.4%. This finding was explained to show that for every 1.4% increase in the time taken to collect cash, return on assets decreased. Although Olaoye et al. (2019) demonstrated how managing working capital and profitability are correlated, the finding of this study may not be valid in a Kenyan setting.

Cash and Cash Equivalents Management and Profitability

Agembe (2024) evaluated how retained earnings, as measured by earnings per share, relate to the profitability of 42 listed non-financial firms. Retained earnings are one of the sources of cash that companies can use to pay off short-term liabilities. The research used a panel vector autoregression (PVAR) model to show how earnings per share affects return on assets, the latter being the selected ratio for measuring profitability. The results obtained in this study clearly establish that with increased profitability comes a positive increment in retained earnings. Additionally, one of the recommendations for this study would be for firms to manage their retained earnings effectively and proceed with investing in opportunities for enhanced profitability. While this research managed to establish a connection between retained and profitability, it does not establish a clear link between money available and profitability.

Agurto Rodriguez, Delgado, Cruz, Ramírez, and Gavidia (2023) undertook a basic study concerning the nexus between cash management and profitability in listed cement firms in Peru. The research entailed a consideration of a review of the accounts of selected firms for the years 2017-2021. The finding indicated that changes made in liquidity ratio and gearing ratio for a firm for a year affect profitability. Besides this, as this study holds, effective management of cash can help firms perform their operations effectively. Nonetheless, a gap appears to exist concerning the study and the Topic due to differing economic factors of Peru.

Nyaga and Aluoch (2022) also employed descriptive statistics to assess data for 20 listed manufacturing firms between 2016 and 2020. The major focus of the study was establishing the impact of management of working capital, which encompasses management of cash, and its effect on the financial performance of a firm measured using profits. The descriptive statistics showed that management of prediction for a firm's mean and standard deviation had a positive association with profitability. Despite this being a recent study, manufacturing construction and other connected fields have distinct operating processes. Thus, a gap exists because of this.

Munzala and Musiega (2020) used descriptive statistics to determine the significance of liquidity to the levels of profits made by 48 firms listed in the NSE. This study indicates that changes in liquidity have a bearing on company finances. The study also advises that firms should regularly monitor their money for optimal levels of liquidity. Although a research gap exists in this study because firms were selected randomly across various sectors of business, this study forms a basis for this research because of its results.

2.1.1 Payables Management and Profitability

Wanyoike and Omagwa (2024) determined the effect that managing working capital has on profitability in an organization. The role of managing payables and its effect on profitability was also determined. The research applied multiple linear regression, descriptive and correlation analyses. The research had similarities with previous studies in terms of finding a positive effect between payables management and profitability of a firm. Additionally, this research lacked time when considering whether obtaining data was contemporary because data

was used from 2017 to 2021. Also, this research lacked a particular gap because tea processing companies were used without considering whether the firms were listed in the NSE.

Shimenga and Miroga (2019) investigated the effects of borrowings and liquidity on profitability. Borrowings are included in accounts payable in form of long-term loans and interest. The study only considered manufacturing firms that were listed in Kenya as of 2016. In establishing their results, the researchers employed a descriptive methodology where 95 respondents were selected using a census from 10 manufacturing firms that were listed and were randomly selected. The data collection was conducted using descriptive questionnaires with analysis being done using SPSS 24. Among the hypotheses put forward was that borrowings affect a firm's performance; however, firms with appropriate financial leverage policies increase their profitability.

Kinyua & Fredrick (2022), assessed the impacts of liquidity risk on the profitability of publicly listed firms in the manufacturing industry in Kenya. The researchers obtained data from 12 listed firms in the manufacturing sector and descriptive statistics was applied to data analysis. The researchers administered questionnaires to the Chief Executive Officers of the selected firms. The study concluded that adequate tangible asset, financial leverage, and capital significantly influence profitability positively. However, there is a methodological gap between the project and the research since published financial statements are more reliable than random respondents who may be biased or have limited knowledge of the study area. There is also a contextual gap because they focused on a different sector.

Gathara, Kilika, and Maingi (2019) analyzed how debt financing influences the financial health of 30 listed in the NSE from various sectors of the economy. The research was triggered by the declining profits among listed firms between 2007-2015. The authors used an explanatory research approach and used the panel regression model to analyze explanatory and moderating variables. Data was retrieved from annual audited reports and analysis conducted through descriptive techniques and regression analysis with a 5% significance level for the t-statistic used to determine the regression coefficients. The impact of leverage was measured using return on sales (ROS), return on assets (ROA) and return on equity (ROE). The three ratios indicated that debt financing positively affects a company's profits. However, the magnitude of the impact varied among the selected companies. The study sampled across various industries, creating a contextual gap. Therefore, its findings may not reflect the actual status of the construction and allied sectors.

RESEARCH METHODOLOGY

Research Design

The concept refers to the plan for conducting research about the research objectives and hypothesis (Ansari, Rahim, Bhoje, & Bhosale, 2022). The research applied descriptive statistics, which was suitable because it defines the characteristics of a data set. The design was useful in predicting the reaction of the firms' profits as a result of changes in liquidity components. Therefore, the design sought to bridge the gap in the literature review and give more details on the phenomena.

Empirical Model

An empirical model was established to evaluate the link between the variables. The model was based on the data collected and analyzed using a multiple regression model, which was represented as;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 T_4 + \epsilon$$

Y = Profitability in terms of ROI, β_0 = Y-intercept, β_1 , β_2 , β_3 , β_4 , β_5 = regressions coefficients, X_1 = Cash Management, X_2 = Inventory Management, X_3 = Receivables Management, X_4 = Account Payables Management, T_5 = Time in years, ϵ = error term,

Target Population

Defined as all the members and entities that meet the criteria of the research topic, a target population provides the relevant details required for investigation (Willie, 2022). In research, a target population may be defined by geographical location, sector, or economic class. For this study, focus was on businesses in the construction and allied sectors listed in the NSE, which include Bamburi Cement, Crown Paint, East African Cables, and East African Portland Cement. The inclusion criteria that was used to determine the sample population include companies operating within the construction and allied sector in Kenya, the companies have to be listed in the NSE, the firms must have been operational within the last selected period (five years), and must have published financial statements for the period. Therefore, the sample excluded firms that have been liquidated and with no financial statements published for the selected period.

Sampling Technique

Refers to the method of choosing the participants from the identified population (Cash, Isaksson, Maier, & Summers, 2022). Information that represents the entire population is then collected from the identified sample. The research used census method because the sample size is small (Nyaga & Aluoch, 2022). Data on the selected companies in the construction and allied sectors was obtained from the NSE annual reports. Additionally, this study considered a period of 2019-2023. This period is also short. Thus, this study employed a census sampling methodology. This was because the firms identified had variations in profitability levels during this time.

Data Collection Procedure

The data involved profitability levels among listed firms in the construction and allied sectors. The secondary data gathers information based on published financial reports. This data was obtained using the NSE data base. Published financial reports are a valid source of data because a mandatory government agency always examines these reports (Kelly, Martin-Peters, & Farber, 2024). Financial reports for this study were obtained based on net profits, current assets (receivables and payables), and closing cash values for each end of a respective financial year. The data was applicable for obtaining liquidity and profitability ratios such as a cash ratio, return on investment ratio, current receivables ratio, and current payables ratio. But this data-gathering process had to wait for acquisition of a university approval letter.

Data Collection Instrument

The Study employed secondary data to establish the association between liquidity management and profitability of firms in the construction and allied fields. The prepared financials provide

sufficient data for this analysis. This data includes profit & loss accounts, inventory, receivables, payables, and cash & cash equivalents. The data used in the research was collected from the NSE. The annual audited financials of the shortlisted platforms were considered for this study. The period of focus for this study was 2019-2024.

RESULTS AND DISCUSSIONS

Descriptive Analysis

Descriptive statistics were used in this study to establish the parameters of the data. This was based on various aspects of data shown in Table 1 below.

Table 1: Descriptive Analysis

	N	Min	Maximum	Mean	Std. Deviation
ROI	20	-0.18	0.25	0.022	0.136
Inventory Turnover	20	2.022	7.474	3.667	1.323
Cash Ratio	20	0.002	1.246	0.285	0.413
Payables Turnover	20	0.305	4.804	1.802	1.604
Receivables Turnover	20	1.394	11.674	6.102	3.242

Source: Researcher (2026)

As indicated in Table 1 above, ROI for the chosen firms ranged between -0.18 and 0.25. The mean ROI was 0.022 and the standard deviation was 0.136. This indicates low profitability with moderate variability in profitability among the firms. The firms took between 2 and 7 cycles to turn their inventory to cash with a deviation of 1 cycle among the firms. This indicates moderate variability among the firms concerning efficiency in managing their inventory. A wide variability was displayed in managing the cash and cash equivalents. This ranged between 0.002 and 1.246, where the standard deviation was 0.413 and the mean was 0.285. This indicates a great degree of short-term liquidity variability among the firms. This information describes variations among firms concerning fastness in converting cash and cash equivalents. While this took less than 1 cycle for the fast firm and up to 4 cycles for the slowest firm. The average time taken was twice as much. Also, this took twice as much deviation among firms. This indicates a great degree of variability among firms concerning payments made to suppliers. This data describes variations among firms concerning fastness in collecting money received. While this took 11 cycles for the most efficient firm among them and 1 cycle for the least efficient one. Also, this took 6 cycles among them with a deviation of 3 cycles. This indicates a great degree of variability among firms concerning collecting money received. ROI had low variability. This was followed by efficiency in payables. The largest measures of variability were exhibited by receivables and payables turnover.

Correlational Analysis.

Correlation analysis measures the linearity of the relationship among the study variables. The outcome of the statistical analysis is as shown below.

Table 4.2: Correlation Matrix

	Profitability	Receivables Management	Inventory Management	Cash Management	Payables Management
Profitability	1				
Receivables Management	0.3095	1			
Inventory Management	-0.3724	0.4775	1		
Cash Management	0.1548	0.7838	0.4972	1	
Payables Management	0.4666	0.8677	0.2905	0.8453	1

Source: Researcher (2026)

The table 2 measures of degree of correlation, 0-0.19 is viewed as having very low correlation, 0.2-0.39 low correlation, 0.4-0.59 moderate correlation, 0.6-0.79 high correlation, and 0.8-1 for very high correlation (Selvanathan, Jayabalan, Saini, Supramaniam, & Hussin, 2020). The results of the regression analysis run using a 5% significance level showed a moderate positive correlation of 0.3095 and 0.4666 between receivables management and payables management and profitability. This means that better payables management and receivables management affect profitability moderately. Additionally, a low positive correlation of 0.1548 was observed between cash management and profitability. This means a slight effect of this variable on the dependent variable. Inventory management had a moderate negative correlation with profitability. This means that a high level of inventory negatively affects profitability. Again, payables management had a strong positive correlation with profitability among all variables considered.

Regression Analysis

The above table shows the coefficients for the model. The coefficients emphasize how much each variable can affect changes in other variables.

Table 3: Model Coefficients

	Coefficients	Standard Error	t Stat	P-value	Lower 95%
Intercept (Y)	0.04975	0.08898	0.55908	0.58494	-0.14109
Cash & Cash Equivalents Management(X1)	-0.17628	0.12668	-1.39157	0.18577	-0.44797
Inventory Management(X2)	-0.04612	0.02399	-1.92295	0.07507	-0.09757
Receivables Management(X3)	0.00960	0.01734	0.55388	0.58840	-0.02759
Payables Management(X4)	0.07681	0.04041	1.90069	0.07813	-0.00986

Predictor: (Constant) Inventories, cash & cash equivalents, receivables, and payables management

Dependent Variable: Profitability

Source: Researcher (2026)

The table 3, the Y-intercept of 0.04975 is an indication that without the predictor components, the increase in profitability for the selected firms would be 4.98%. Payables management has the highest positive relationship with profitability at 0.07681. Therefore, a unit change of payables management would affect profitability (ROI) by 0.07681 units. Similarly, a unit increase in receivables management would increase profitability by 0.0096 units. However,

receivables management has a weak effect on profitability, as $p = 0.5885 > 0.05$. On the other hand, a unit increase in cash and inventory management reduces profitability by 0.17628 and 0.04612 units, respectively. Although $p = 0.18577$ and $0.07507 > 0.05$, the influence of inventory management on profitability is more significant compared to cash management.

Hypothesis Testing and Discussion of Findings

H₀₁: Inventory Management and Profitability

The statistical analysis outcome was used to test the hypothesis based on the predictor variables. The null hypothesis for inventory management was that a significant relationship does not exist between inventory management and profitability in construction and allied firms listed on the Nairobi Securities Exchange. The coefficient of inventory management and p-value for regression analysis was -0.04612 and $p = 0.07507 > 0.05$. This indicates that inventory management moderately negatively influences profitability of the selected companies. Thus, this null hypothesis was rejected. This finding appears to support Olambo and Aluoch (2022), who indicated that inventory management vital for increasing profitability.

H₀₂: Receivables Management and Profitability

For receivables management, the null hypothesis was: There is no significant relationship between receivables management and profitability of construction and allied companies listed in Nairobi Securities Exchange. The regression coefficient and p-value for this variable were 0.00960. The p-value was 0.58840. This exceeds 0.05; therefore, the null hypothesis was rejected. The p-value calculated for this variable indicates slight deviation from the recommended standards. This indicates that while this variable does not play a significant role in influencing profitability levels, it variable may have a slight influence. Consequently, firms must pay more attention to managing receivables in order to increase profitability.

H₀₃: Cash Management and Profitability

For the study of cash management, the null hypothesis was: There is no significant relationship between cash and cash equivalents management and the profitability of construction and allied firms listed on the Nairobi Stock Exchange. The p-value obtained for the regression test was $P = 0.18577 > 0.05$. Based on the outcome, the null hypothesis was found to be invalid.

H₀₄: Payables Management and Profitability

In regard to payables management, the statistical data showed that $p = 0.07813 > 0.05$; therefore, the null hypothesis was disproven. Additionally, a positive correlation between payables management and profitability corresponds with other studies conducted (Wanyoike & Omagwa, 2024; Gathara, Kilika, & Maingi, 2019). However, the p-value was marginally above 0.05, which tends to indicate that payables management has a potential effect on profitability.

CONCLUSION AND RECOMMENDATIONS.

Conclusions

The results obtained in this study indicate that a negative association does exist between inventory management and profitability. The outcome shows that with a unit increase in

inventory management, a negative effect occurs in profitability. This means that this study supports the fact that companies must to sell their end products in order to obtain revenue. Additionally, changes in the cost of inventory due to changes in industries may also have a potential effect on profitability. For example, when a firm experiences a rise in the current cost of raw material used in producing commodities, a resulting decline in the profit margin may be anticipated. The results can be explained using a dynamic theory that recognizes the effect of risks in a business environment. From the results, a unit increase in accounts receivable only causes a small increase in profitability. This indicates that providing credit terms for goods and services leads to enhanced revenue. But for companies, a limit needs to be placed on accounts receivable to prevent a situation where money for paying ongoing expenses is exhausted. Not settling short-term liabilities may be interpreted as a signal of a company experiencing financial difficulties. The connection between cash management and profitability can be traced back to the liquidity preference theory. This theory explains that when a company prefers liquid assets like cash, this particular preference generates a reduction in investments made for the long-term. In turn, the reduced investments for the long-term generates lower profits. The results are connected to pecking order theory. This theory explains that investment generated from internal sources should be considered for investment purposes prior to venturing into other means of investment. This theory is aligned with results that indicate a rise in cash and cash equivalents leads to a decline in profitability. The management of payables has a strong positive correlation, signifying that for these firms, efficient payables management strategies should be employed to better their profitability. This research indicates that a rise in accounts payable leads to a decrease in profitability.

Recommendations

The results indicate that management of inventory & accounts payable has a borderline significance effect on profitability. Thus, firms listed on the NSE should develop effective policies for managing their inventory & accounts payable in order to better their profitability. Additionally, firms can also work to optimize their current methods of managing inventory & accounts payable to maximize their inventory & accounts payable turnover. This would be a strategy towards better management. Additionally, since a relationship exists between management of receivables & cash & cash equivalents and profitability, firms listed on the NSE should further measure their effect on profitability. As such, firms may employ other variables in order to better their financial management. Besides the management, policymakers in the business environment need to focus on discovering possible effects of independent variables on profitability, especially with a larger dataset for better results. The construction and related fields have fewer listed companies. Thus, the sample used was smaller. Choosing a different sector with several listed companies would aid policymakers in making informed decisions and policies that can be implemented by NSE for enhanced profitability for listed firms.

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