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EFFECT OF INVENTORIES ON PROFITABILITY OF CONSTRUCTION AND ALLIED COMPANIES REGISTERED UNDER NAIROBI SECURITIES EXCHANGE, KENYA

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Abstract: **The companies within construction and allied sector listed at Nairobi Securities Exchange are crucial to Kenya's economy, contributing to job creation and infrastructure. However, they face declining profitability, with statistical data showing revenue drops for many firms' financial year. Overall, profitability has decreased, with average margins falling significantly. Additionally, market capitalization has dropped for the last few years, raising investor concerns. In addition, many of these firms are grappling with elevated debt levels. Therefore, this study investigated the effect of inventories on profitability of construction and allied companies listed at Nairobi Securities Exchange, Kenya. The study employed casual research design. A time series model was applied. The 5 companies operating within this sector formed the unit of analysis whereby their profitability was analysed for a period ranging from 2021 to 2025. The collection of data was done using secondary data collection sheet. The analysis of the data was subjected to descriptive analysis using minimum and maximum values, mean and standard deviation. The relationship amongst variables was achieved by using inferential statistical analysis including correlation and regression analyses methods. The diagnostics tests done included; normality test, multicollinearity test and heteroscedasticity test and linearity test. The inventories of these companies were found to be statistically and significantly related with their profitability. The study concludes that proper management of inventories leads to streamlined operations and enhanced general financial strength of construction companies. The study recommends that the companies should embrace technology that can be used in improving the management of inventories through digital tools and software that can streamline the monitoring of materials and equipment.**

Keywords: **Inventories, Working Capital Management, Profitability.**

1. INTRODUCTION

Construction enterprises registered by Nairobi Securities Exchange (NSE) has a fundamental part of resource mobilization for managing bigger projects since they are able in securing cash using public investments which result to substantial progressions in many regions like roads. housing plus extra indispensable infrastructure (Abdifatah, 2020). Mwangi and Jerotich (2023) noted that the extension of construction and allied businesses gives absolutely to government income through improved tax and levy gatherings, which afterward guarantees satisfactory resources for community projects and services. Hence, the construction and allied businesses registered at NSE are vital in generating employment chances, producing revenue, and stimulating sustainable practices.

Le, Vu, Du and Tran (2021) argue that a business demonstrating stronger financial healthiness warranties its maintainability owing to the fact that it can successfully traverse economic variations, carry out innovative savings and safeguard acceptable

payment for its workforce. According to Asare, Owusu-Manu, Ayarkwa, Martek and Edwards (2024), the construction businesses with stronger financial measures are better placed in attracting a bigger number of investors within a competitive market. As a result, these companies that uphold reliable incomes, better cash flow and management of risks are more likely to earn improved stock prices that are of greater advantage to their stakeholders.

The construction industry of United States (US) manages to improve its growth particularly with the residential and commercial businesses due to lower rate of interests, increased demand for housing and considerable investments through federal infrastructure investments (Kangari, Farid & Elgharib, 2022). However, Seo, Kim, Bang, and Kang (2024) indicated that the industry still grapples with matters concerning lack of enough and skilled human resources and consistent increase in cost of materials which makes these companies not to meet their expected profitability levels.

The Germany's construction industry adopted front-line technology and puts a stronger prominence on practices meant for energy-efficient construction which has enabled these companies to raise their profitability levels irrespective of encountering challenges like lack of enough materials and scarce investment chances for innovative construction (Pfnür & Wagner, 2020). According to Johann, Block, and Benz (2022), the Hochtief AG, which is one of the best transnational construction companies within Germany, has been achieving greater improvements in revenue and profitability due to improved expenditure on infrastructure within and outside the country. Moreover, the company has been involved in many highly profiled projects like highway and airports upgrading that support significantly the growth of nation's economy.

The construction industry with African countries has seen a tremendous growth due increasing urbanization rate, focus on improving infrastructure expansion, and government-led projects. Oladimeji and Aina (2021) observe that companies within construction industry of Nigeria plays a significant contribution to the growth of the country's economy through implementing bigger transport and housing projects. According to Echekoba and Ananwude (2023), the construction companies registered under the Nigerian Stock Exchange like the Julius Berger Nigeria Plc, a firm which is better known for its leading implementation in larger scale projects has posted significant profitability results since the years 2023.

Olarewaju and Ibrahim (2020) show that the construction companies listed at Johannesburg Stock Exchange within South Africa is ranked on of the topmost within Africa being with companies including Wilson Bayly Holmes-Ovcon (WBHO), demonstrating a substantial maintainability irrespective of constant economic variations within the country. Omopariola, Windapo, Edwards and El-Gohary (2021) indicate that the government of South Africa plan for developing its infrastructure is tailored to manage issues concerning delivery of better services to the public which presents better chances for economic growth of the country.

Muli (2023) indicate that the putting into practice towards achievement of Vision 2030 by the Kenyan government aims at changing the nation to the middle level income. Mwangi and Jerotich (2023) observe that the East African Portland Cement Company which is well known producing cement within the country is always faced with significant obstacles related to the environment the company is operating in. This has led to decreased sales volumes mainly attributed to heavy competitive environment and constant changes of consumer needs.

Working capital management is a plan and process employed by a company to efficiently oversee its current assets and liabilities, enabling it to address short-term needs and maintain uninterrupted operations (Almomani, Almomani & Obeidat, 2021). According to Ahmed (2022), working capital management entail process of guaranteeing that the business has adequate flow of cash that meets its short-term commitments and operating expenses. The working capital management is defined by Talonpoika, Karri, Pirttila and Monto (2021), as a procedure of handling a business's present assets and current liabilities within a method that improves its profitability.

Inventory encompasses company's goods and materials such as raw resources, work-in-progress items, and completed products and proper organization of these inventories greatly influences the business's operating efficiency and monetary performance (Kolias, Dimelis & Filios, 2021). According to Rao and Rao (2023), the company's profitability is openly determined through inventory because the longer the products sit in inventory, the more these costs can add up and the faster a company sells its inventory, the faster it can reinvest that capital into business resulting to increased revenues and, ultimately, higher profits.

Construction companies registered under the NSE have encountered a progressive development owing to improved government infrastructural investments, modernization and increasing rate number of people in urban areas. The industry plays a fundamental responsibility in developing the economy of a country in roads constructions, bridges, real estates and

commercial assets. A number of construction and allied firms had chosen listing their shares on NSE because of the good growth achievement enabling them to increase capital for bigger projects and offering investors with better chances in participating within the industry's developments

Major construction companies registered under NSE encompass the East African Portland Cement Company (EAPCC), which deals with a collection of cement products for construction activities; Arm Cement Limited, a manufacturer of numerous cement products and resources; the Kenya Power and Lighting Company (KPLC), which participates in substantial infrastructure expansion projects that enhances energy availability, vital for any construction effort; Bamburi Cement, a upper cement producer within the nation; and Sokoni Retail Kenya PLC, a company linked with assets growths that provide to the growing urban populations within the country (NSE, 2024).

2. STATEMENT OF THE PROBLEM

Construction firms registered under NSE clinch past prominence with the country's economic development resulting in offering job opportunities and infrastructural developments. However, the statistical information shows that such companies encounter a difficulty pattern pertaining their profitability. For instance, the NSE three-monthly results for 2024 exposes that the most of these businesses have conveyed a income weakening of between 15% and 20% throughout the 2023 and 2024 fiscal year. Companies like KPLC, EAPCC and Bamburi Cement faced revenue declines of 22%, 19% and 20% correspondingly in their first two quarters related to the previous economic year. The firms' profitability has expressively reduced through the panel, with regular limits stated at 5%, a reduction of 8% in preceding years. Generally, the marketplace capitalization of these businesses has weakened by about 30% for the previous 18 months, bringing issues amongst investors. Also, majority of companies are tackling with raised debt heights, with debt-to-equity ratios extending between 1.5 and 2.0 (NSE, 2024).

SPECIFIC OBJECTIVE

To examine the effect of inventories on profitability of construction and allied companies registered under Nairobi Securities Exchange, Kenya.

RESEARCH HYPOTHESIS

H_{01}: Inventories do not significantly relate with profitability of construction companies registered under NSE of Kenya

3. LITERATURE REVIEW

Theoretical Literature Review

Profit Maximization Theory

Marshall (1890) formulated this theory who helped define concept of profit maximization as the goal of firms in competitive markets. At its core, profit maximization is the procedure whereby a company controls the price and manufacturing level that gives back the highest profit and it is a guiding principle that assumes businesses strive to achieve the greatest possible financial gain for their shareholders (Marshall, 1890). Smith (2008) indicate that profit maximization through free market competition leads to innovation and efficiency and brought the idea that, when companies maximize their profits, they also maximize societal welfare.

Kahneman and Tversky (1990) view on profit maximization theory through behavioral economics perspective by emphasizing that human emotions and cognitive biases often influence economic behavior. For example, companies can mark illogical choices that result to lesser profits, deviating from the actual profit maximization model owing to elements such as being over confident or loss aversion. According to Laibson and Zeckhauser (1998), who applies game theory viewpoint in the analysis of competitive connections concerning firms and proposes that within a market that is oligopolistic, a company can opt for making strategic choices that aim at maximizing profitability instead of concentrating distinctively on particular profit maximization. According to Rabin (2003), the theory does not factor profit which might result to dangers on companies operating in a certain market, unprincipled labor practices, and additional societal subjects. In reaction, numerous companies are accepting wider structures that integrate corporate social accountability, maintainability and stakeholder viewpoints.

The profit maximization theory encompasses vigilant organization of expenditures. In this case, the companies that usually engage major investments ought to effectively handle resources in ensuring that they stand still as per their budget whereas

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attaining higher quality results. The proper streamlining of companies' operations can make them save cash and time permitting extra space for making more profits. Therefore, those companies that properly incorporate proper handling of costs, adopts advanced technologies, market strategies and sound ethical standards acquire a higher likelihood of achieving sustainable profits.

Empirical Literature Review

Bah, Duramany-Lakkoh, and Daboh (2023) applied empirical proof to assess the management of inventories by manufacturing companies towards enhancing their profitability. The study applied case research method. The data was gathered from secondary sources of these firms fiscal reports from 2015 to 2020. The analysis of data was subjected to linear regressions model. The study discovered that cost of raw material and storage had presented insignificant effect on manufacturing firms' profitability.

Orechi and Ondara (2022) examined the influence of practices in managing inventories implemented by construction companies on their profitability. Population consisted of 3 construction companies. The respondents were 206 who were determined through stratified random sampling technique. The gathering of data was prepared employing questionnaire. Analyses of data were made possible through use of multiple regression analyses accompanied by inferential analyses. The study observed that these companies had properly managed their inventories resulting to improved profitability margins.

Ndirangu (2021) examined how inventory management impacts industrial and related companies' profitability within Kenya. A correlational research design was utilized. Two categories of information were gathered. A questionnaire was applied in gathering data. Population was composed of 71 companies which was determined through stratified sampling procedure reaching a sample of 399 respondents. This research undertook descriptive analysis and inferential techniques in analyzing data. The analysis results showed a strong link of practices of inventory controls with profitability.

Anisere-Hameed and Bodunde (2021) evaluated how manufacturing firms in Nigeria were managing their inventories to improve their profitability. This research utilized the ex-post facto methodology and spanned a duration of 5 years from 2015 to 2019. It was indicated that inventory management greatly influences ROA, investments, net operating margins, and net income for these companies. The subsequent recommendations were advocated: management should refrain from immobilizing capital in inventory by utilizing JIT inventory scheme; they should too minimize credit sales or the average collection period to facilitate the swift conversion of inventory into cash.

4. RESEARCH METHODOLOGY

The study employed casual research design. A time series model was applied. The 5 companies operating within this sector formed the unit of analysis whereby their profitability was analyzed for a period ranging from 2021 to 2025. The collection of data was done using secondary data collection sheet. The analysis of the data was subjected to descriptive analysis using minimum and maximum values, mean and standard deviation. The relationship amongst variables was achieved by using inferential statistical analysis including correlation and regression analyses methods. The diagnostics tests done included; normality test, multicollinearity test and heteroscedasticity test and linearity test. The finding was presented in tables.

5. FINDINGS

The analysis was done based on minimum and maximum values to determine how data is spread, mean and standard deviation to determine the variability of data points. The descriptive analysis results for inventories are as presented in Table 1 below;

Table 1: Inventories

Variable	Minimum value	Maximum value	Mean	Standard deviation
Inventories	8.512	16.451	10.954	6.456

(Source: Survey Data, 2026)

The inventories which were measured using the cost of goods sold and net purchases on profitability of these companies had a minimum value of 8.512 which implies there were some companies that are certainly struggling with less profit margins while the maximum value at 16.451 indicates that there are other companies with effective navigation of the prevailing market. The mean score value of 10.954 which is the average profitability among these companies signify that

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there was presence of certain companies performing better above average which is a good pointer for possible investors seeking to enter into such market. The standard deviation of 6.456 which indicates how profitability of the companies vary is higher signifying that there were3 greater deviations on profitability of these companies with ones with higher profitability while others with lower profitability. Orechi and Ondara (2022) research observed that construction companies operating within Nairobi City County, Kenya had properly managed their inventories resulting to improved profitability margins.

Diagnostic Test Results

The tests assessed were normality test, multicollinearity test and heteroscedasticity test, model specification test, linearity test and stationarity tests.

Table 2: Diagnostic Test Results

Normality test (Shapiro-Wilk test)		
Variable	**Statistics**	**Sig.**
Inventories	0.515	0.201
Multicollinearity test (VIF values)		
Variable	**Tolerance**	**VIF**
Inventories	0.712	1.405
Heteroscedasticity test (Lavene test)		
Variables	**Statistics**	**Sig. Value**
Inventories	0.574	0.112
Stationary test (Augmented Dickey-Fuller test)		
Test	**Statistic value**	**Sig.**
Augmented Dickey-Fuller test	0.628	0.003
Linearity test (Pearson r correlation coefficient)		
		Inventories
Profitability	Pearson correlation	0.779
	Sig. (2-tailed)	0.003
	N	5

(Source: Survey Data, 2026)

The results in table 2 shows that data was normally distributed since the significance level was greater than 0.05 at 0.201. None of the independent variables were significantly affected by multicollinearity, as all VIF values were below 5. Data was not constant across all levels which led to accepting null hypotheses as it satisfied the homogeneity of variance a signal of absence of homoscedasticity since the significance level (0.112) was more than 0.05. The data sequence was stationary since the significance value (0.003) was below 0.05. The value indicate that inventories had a positive significant linear relationship with the dependent variable ($r=0.779$; $p<0.05$). Therefore, the collective evaluation of study assumptions using these tests confirmed that the regression analysis results could be statistically significant.

Panel Regression Analysis Results

This analysis was conducted to analyse data gathered from the companies' financial reports over several time periods.

Table 3: Panel Regression Analysis Results

Profitability (P)	**Coef**	**Std.Er**	**Z.**	**P.>IzI**	**95 %**	**Interval.**
Inventories (I)	-12.061	4.105	0.264	0.002	3.604	15.612
Wald $\lambda^2(4) = 15.012$; Prob > $\lambda^2 = 0.003$; Pseudo R-sq. = 0.802						

(Source: Survey Data, 2026)

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The regression model outlined below was created;

$P_{it}= 10.051 – 12.061I_{it} + ε$

Whereby:

P_{it} = Profitability

I_{it} = Inventories

ε =Error term

The Wald Chi-Square test had a value of $\lambda^2(1) = 15.012$, which proves that the inventories strongly linked with profitability of construction and allied companies registered under Nairobi Securities Exchange, Kenya. The corresponding p-value, Prob > λ^2 = 0.003 which is an evidence of statistical significant relationship between inventories and profitability of these companies. The Pseudo R-squared value of 0.802 was observed which suggested that the model explained a considerable share of variance in profitability of these companies associated with the inventories. Basically, the results indicate that the inventories indeed presented a stronger prediction of the companies' level of profitability. Therefore, the difference of 19.2% represents the other aspects not studied

Hypotheses Testing

The following are hypotheses to be tested;

H_{01}: Inventories have no significant relationship with profitability of construction companies registered under NSE, Kenya

The hypothesis that inventories had no significant relationship with profitability of construction companies registered under NSE, Kenya was tested. The inventories (p=.002) suggested that inventories of these companies was statistically and significantly related with their profitability. The null hypothesis was thus rejected. The finding agrees with Ndirangu (2021) who examined how inventory management impacts industrial and related companies' profitability within Kenya. The analysis results showed a strong link of practices of inventory controls with profitability.

6. CONCLUSIONS

Proper management of inventories leads to streamlined operations and enhanced general financial strength of construction companies. The companies with a proper strategic method to inventory earn significant profitability benefits. The effective implementation of inventory management practices enables a company to reduce waste, cost of handling and ensures that materials are readily available as when required contributing to smoother implementation of projects and eventually improved profitability.

7. RECOMMENDATIONS

The study recommends that the companies should embrace technology that can be used in improving the management of inventories through digital tools and software that can streamline the monitoring of materials and equipment. The companies should improve on their Just-in-Time (JIT) method to reduce extra inventory and lessen waste for creation of more storage space. The companies should increase their investments on staff training programs that can prepare them with the present skills for proper handling of inventories.

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