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Contract Management Practices and Performance of Public Water Projects in Nairobi City County, Kenya

[1*]Koech Kiptoo Billy, [2]Dr. Charles Ndeto
[1]Masters Student, Jomo Kenyatta University of Agriculture and Technology
[2]Lecturer, Jomo Kenyatta University of Agriculture and Technology

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ABSTRACT

Purpose: The purpose of the study was to determine the effect of contract management practices and performance of public water projects in Nairobi City County, Kenya. Specifically, the study sought to determine the effect of contract implementation, and contract monitoring the performance of public water projects in Nairobi City County, Kenya.

Methodology: This study adopted a descriptive survey design. The target population of the study was a sample of 51 water projects in Nairobi County. The specific respondents were project managers, project procurement officers, project accountants, project administrators and customers of the projects. Total respondents were 306. The sample size was 98 respondents selected using simple random sampling. This study used primary data which was collected through use of a questionnaire. SPSS was used to produce frequencies, descriptive and inferential statistics which were used to derive conclusions and generalizations regarding the population. The particular descriptive statistics was frequencies, mean scores and standard deviation. The particular inferential statistic was regression and correlation analysis. The results were presented using charts and tables.

Findings: The study found that contract implementation has a positive and significant effect on performance of public water projects in Nairobi City County, Kenya. The study also found that contract monitoring has a positive and significant effect on performance of public water projects in Nairobi City County, Kenya.

Unique Contribution to Theory, Practice and Policy: Form the results, the study recommends that the management of public water projects in Kenya should establish a robust supervision and compliance mechanism throughout the project lifecycle. Effective contract implementation requires continuous oversight to ensure that all contractual obligations such as timelines, resource utilization, quality standards, and safety measures are being met.

Key Words: *Contract Management Practices, Contract Implementation, Contract Monitoring*

Background of the Study

Firm performance includes both the fulfilment of firm objectives through core strategies and the economy and efficacy of resource utilization. The idea that a firm is the collaboration of productive resources with the goal of creating value is the foundation of the concept of firm performance. Therefore, resources will remain to be made accessible, and the business will continue to exist and grow, so long as it produces value that meets or exceeds the value that its providers expect (Kitenga, Kilika, & Muchemi, 2020). In general, a project's performance is based on its budget, deliverables, and budget restrictions (Muithya & Muathe, 2020).

Businesses everywhere, especially water companies, are searching for ways to stay competitive in the ever-changing global market. Many academics and strategic managers now see contract management practices as essential to strategy and business performance as a result of their quest for ways to adapt to changing external conditions (Rugiri, & Njangiru, 2018). Contract management practice comprises of all the activities involved in the drafting, review, revision, and analysis of contracts, and the implementation of systems and use of software that are designed to enhance accurate tracking and keeping of records relating to satisfaction of contractual terms (Willmott, 2019). Nevertheless, contract management is sensible if it makes a positive impact on the government in terms of operational performance (Kipkemoi, & Makori, 2021).

Contracts for water projects are becoming mainstream in all types of organizations. For the past sixty years, organizations have increasingly been using projects and programs to achieve their strategic objectives, while dealing with increasing complexity, uncertainty, and ambiguity affecting organizations and the socio-economic environment within which they operate (Dagba & Dagba, 2019). Through projects, resources and competencies are mobilized to bring about strategic change, and thereby create competitive advantage and other sources of value. The Government has used performance contracting since 2003 as a key accountability framework in its endeavour to improve service delivery in the public service. Performance Contracting is part of the broader public sector reforms aimed at improving efficiency and effectiveness in the management of the public service (Openji, & 2024).

In Kenya, the performance of public water projects faces challenges, with a significant number of projects failing or being abandoned, highlighting the need for improved management, community participation, and monitoring. In most parts of the country substantial percentage of water projects, including dam construction and borehole drilling, have been reported as abandoned or failing (Mutai & Musembi, 2024). According to Openji and Osoro (2024) water projects management in Kenya have failed to sustain their operations because of inadequate capacity during the construction process. It has also been observed that most of the water projects management implementation schedule lag from what was planned in the design/ feasibility studies (Republic of Kenya, 2019).

According to Nyakwaka and Benard (2019), Nairobi's water demand has increased to more than 810, 000 cubic meters per day, compared to 525, 600 cubic meters per day installed output, resulting in a demand gap of 284, 400 cubic meters. Public water projects in Nairobi County have stopped working due to lack of proper contract management. Additionally, the illegal connections and poor project management practices have also been attributed to water shortage in Nairobi County (World Bank, 2020). Some of the water projects that supply water to Nairobi residents include: Thika Dam project, Northern Collector Tunnel project, Kabete Treatment Plant, Sasumua Treatment Works, Ruiru Dam project, Kikuyu Spring water project and several boreholes drilled in the informal settlements. However, despite the amount of Water supplied by Nairobi Water, there is still a water shortage in many areas within the Nairobi region (World Bank, 2020).

Problem Statement

There is no denying that water has an impact on every facet of development. Millions of lives can be changed by a clean and safe water supply, improved water productivity, resource management, and hygienic practices. Under the Vision 2030 Development Agenda, Kenya hopes to reach an average annual GDP growth rate of 10% and become a middle-income country (Muema, & Ngugi, 2021). Reducing poverty requires adequate water supplies (WS) since inadequate WS raises public health concerns that harm residents' health, reduce productivity, and raise living expenses (WASREB, 2019). When properly managed, WS can make a substantial contribution to the socioeconomic development of the nation. Water projects performance is crucial in this situation.

In Kenya, Nyaga (2019) indicated that in 2019, 60 percent of all water projects implemented were fully functional and 40 percent were either partly successful or not working at all. Among the projects that were partly successful (15 percent) were partly successful while 25% were not working at all. Further, of all the water projects implemented in 2021, 17% of the water projects expressed concerns over the quality of their water source. In the year 2022, of all the boreholes that were supposed to be completed by 2022, 52 boreholes were incomplete (Koehler et al., 2022).

Ling, Ke, Kumaraswamy and Wang (2019) focused on key relational contracting practices affecting performance of public construction projects in China. This study investigates project management (PM) practices adopted by Singaporean AEC firms in China. It determines the performance level of their projects in China; identifies PM practices that led to better performance; and recommends key PM practices that could be adopted by foreign AEC firms in China to achieve project success thus showing a contextual gap. Dagba and Dagba (2019) focused on effects of procurement strategies and contract management practices on the performance of road construction projects in Ghana. The study was done in Ghana while the current study was done in Kenya. Kipkemoi and Makori (2021) focused on the influence of

contract management practices on operational performance of state corporations in Kenya. The study adopted an explanatory research design while the current study adopted a descriptive research design. The current study focused on contract management practices and performance of public water projects in Nairobi City County, Kenya

Objectives of the study

The study sought to determine the effect of contract management practices on the performance of public water projects in Nairobi City County, Kenya.

Specific Objectives

i. To ascertain the effect of contract implementation on performance of public water projects in Nairobi City County, Kenya
ii. To examine the effect of contract monitoring on performance of public water projects in Nairobi City County, Kenya.

LITERATURE REVIEW

Theoretical Review

Contingency Theory

The theory was developed by Fiedler (1965). Warren (2005) improved contingency theory. This theory opposes the theory of Fredrick Taylor's scientific management, who came up with the standard principles of management and alluded that for a firm to advance in terms of its objectives and goals, it must apply the principles of management regardless of the type, the size, and environment it operates. Warren (2015) indicated that organizations are separately diverse, face different situations, and need different ways of managing. Therefore, contingency theory postulates that it is a class of behavioral theory that claims there is no best way to organize a corporation, lead a company, or make decisions.

Kinnie, Hutchinson and Cross (2017) indicated that contingency theory is about the need to achieve a fit between what the enterprise is and wants to become and what it does; how it is structured, and the processes, procedures, and principles it puts into effect. Hence, organizations are supposed to establish diverse strategies in order to realize their objectives and goals. This is because a single strategy may not be suitable due to the environmental influences in the market. Rue and Byars (2014) allude that contingency theory is an extension of humanistic theories, whereas classical theories assumed a universal view in managing enterprises; whatever worked for one enterprise could work for another.

According to Waren (2005), contingency theory explains that there is no universal principle to be found in the management of enterprises. However, one learns about management by experiencing many case problem situations and determining what will work for every situation. This is true because different water projects management have a different unique challenges from

one another. For example, a water projects management may be experiencing a shortage of materials, and another one may be experiencing go slow or boycotts of workers. The approach to solving these challenges may be quite different.

The theory also informs the independent variable of the study which is contract management. Contingency theory in contract management suggests that there's no one-size-fits-all approach to managing contracts, and instead, the best strategy depends on the unique circumstances of each project, requiring flexibility and adaptability

Principle Agent Theory

The principal-agent theory was conceptualized by American economists, Meckling, and Jensen (1976). According to Cheung and Suen, (2002) an agency relationship is defined as one in which one or more persons (the principal) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent (Ross, 1973). The cornerstone of agency theory is the assumption that the interests of principals and agents diverge. According to agency theory, the principal can limit divergence from his interests by establishing appropriate incentives for the agent, and by incurring monitoring costs designed to limit opportunistic action by the agent. This study therefore adopts the view that it is prudent to monitor and control the critical factors of project performance (as defined in the Success Factors Model) within a contracting arrangement (as defined in the Agency Theory) to ensure the success of outsourced projects in the organization.

According to the principal-agent theory, the relationship between the two parties also involves self-interest of each party. It is commonly assumed that all participants in the project will work together in order to achieve the same goal (Coletta, 2013). However, there is a potential conflict of interests between the participants because they all have their self-interests too. According to Braun and Guston (2003) the underlying principle of the contract administration is that there should be a clear understanding of the needs of the principal and ability of the agent to meet these needs competently.

The theory informs one of the independent variables. The theory becomes significant to the study as it highlights the need for proper contract administration practices. When a project contract is well defined and planned, the principal and agents will find it easy to meet needs of each other in an efficient way resulting into timely execution of the projects in predetermined service level.

Conceptual Framework

A conceptual framework, according to Daub et al. (2021), is a collection of broad concepts and theories that aid in the formulation of research questions and objectives as well as the identification of pertinent evidence to support the framework's assertion.

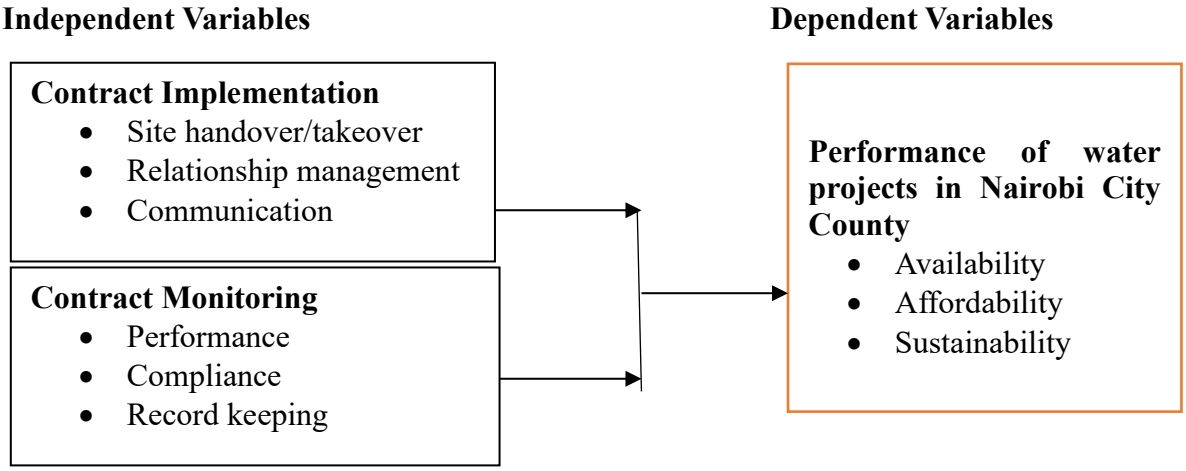

Figure 2. 1: Conceptual Framework

Empirical Review

Contract Implementation and Performance of Public Water Projects

Barati, Sadeghi and Bahrami (2019) focused on the effect of management contract implementation on public hospitals' performance: A case study in Iran. A longitudinal comparative study was done in 4 educational hospitals affiliated to Iran University of Medical Sciences, Tehran, Iran. The related data to 17 performance indicators (including 4 financial, 6 facility utilization, 2 customers, 3 human resources, and 2 quality indicators) of the studied hospitals were collected for two years before management contract implementation and two years after its implementation using hospital information system (HIS). The results showed the positive effects of contract management implementation on some financial, facility, customer, human resources and quality indicators. Hospital income, patients' satisfaction, staff satisfaction and the number of inpatients and outpatients of studied hospitals improved significantly after contracting.

Chong and Cheng (2023) focused on smart contract implementation in building information modeling–enabled projects: Approach to contract administration. A mixed-methods approach was adopted based on an exploratory case study and a questionnaire survey. The qualitative findings were used to initially identify the core criteria of the contractual aspects associated with smart contracts. Quantitative analysis was then applied to determine the critical contract provisions. This research provides new insights and practical knowledge toward implementing legally sound smart contracts in BIM-enabled projects through the contractual aspects of (1) contractual relationships and obligations, (2) security and privacy, and (3) other specific terms and overall contract structure.

Mgabo (2020) focused on effect of procurement contract management on project performance in the Road Sector. Particularly, the consider looked for to examine the effect of especially, the consider looked for contractual terms, monitoring of procurement contracts, contract documentation and technical capabilities of contractors on project performance in the road sector. The study employed a quantitative approach whereby 70 respondents from TANROADS were involved. The results showed that the majority of respondents showed that the award of the tender was award process is not undertaken within reasonable time, implying that there are unnecessary delays, from the time of tender announcement to award. It was also indicated that the majority of the respondents highlighted the fact that disappointment to get it the contract documentation leads to misinterpretation of contractual terms, with 75% of the respondents showing that the experience of the contractor in the construction industry is very critical to project performance. The study found that all the four independent variables, which are compliance, monitoring, documentation and technical capacity, all have statistically significant effects on project performance.

Twizere and Dieu Dushimimana (2024) focused on effect of contract management on performance of roads projects: A Case of Nyabihu District, Rwanda (2019-2022). The study was descriptive designed, correlative designed, qualitative designed, quantitative designed, and primary and secondary data-based designed. The findings on multiple regression coefficient show that contract planning has statistically significant influence on the performance of the roads projects in Nyabihu District. On contract negotiation, indicates that there is statistically significant influence of contract negotiation on the performance of the construction project in Nyabihu District. Also, for contract Execution, indicates that there is statistically significant influence of contract execution on the performance of roads projects in Nyabihu District. Lastly, for contract monitoring and evaluation, indicates that there is statistically significant influence of contract Monitoring and Evaluation on the performance of roads projects in Nyabihu District.

Muriithi (2019) focused on factors influencing implementation of performance contract in public secondary schools: A case of Igembe South Sub County, Meru County, Kenya. The study was guided by the following objectives; to determine the influence of availability of resources, level of awareness, teacher's attitude, training and communication from the principals/county directors on implementation of performance contract in public secondary schools in Igembe South Sub County, Meru County, Kenya. For the purpose of this study, the researcher used a semi structured questionnaire as the primary data collection tool. The study deduced that transport infrastructure, consistency of funds, information communication and technology and that budget allocation greatly influence implementation of performance contract in public secondary schools in Igembe South Sub County, Meru County, Kenya. Moreover, it was revealed that stationery have a moderate influence on implementation of performance contract in public secondary schools in Igembe South Sub County, Meru County, Kenya.

Contract Monitoring and Performance of Public Water Projects

Dieu Dieu and Nnamdi (2024) focused the effect of procurement contract monitoring on performance of Gicumbi District, Rwanda. The researcher conducted both descriptive and correlational studies. Model Summary indicates a robust positive relationship, where effective contract monitoring is likely to enhance overall performance outcomes. More crucially, the coefficient for procurement contract monitoring is 0.849, indicating a strong effect every one-unit increase in contract monitoring is associated with an increase of 0.849 units in performance. The t-value of 15.804 with a p-value of .000 further establishes the significance of this predictor, indicating clear evidence that enhanced contract monitoring is essential for improving performance of Gicumbi District. The significance level (Sig.) of 0.000 confirms that the procurement contract monitoring on performance of Gicumbi District in Rwanda is statistically significant.

Onyango and Juma (2020) focused on the role of contract monitoring on performance of construction contracts in county government of Busia. Census research design was used in the study. The targeted population was 50 drawn from administrators, engineers, quantity surveyors, finance procurement and contractors. For data collection, this study used both questionnaire and face to face interview to collect data. This research demonstrated that there is a huge relationship between performance of construction projects and monitoring of these contracts. This was found out through correlation analysis and regression analysis of both variables under the study. From the study, it indicated that there is a strong relationship between monitoring of compliance since donor funded projects in Busia County required strict adherence to the donor requirements for them to continue funding this project. The study also revealed that its key to streamline the project processes from the beginning to the end just to ensure systems are working towards better performance. Beneficiary who are the major stakeholders in the project need to be actively involved in project implementation for its acceptance and success

Lagat, Noor, Omwenga and Namusonge (2024) focused post-award contract monitoring and evaluation and performance of National Government Road Projects in Kenya. Cross-sectional survey research design was adopted. The research paradigm for this study was positivist. The target population for the research was all 255 on-going road projects by road agencies in Kenya which are Kenya National Highway Authority (KeNHA), Kenya Rural Roads Authority (KeRRA) and Kenya Urban Roads (KURA). The findings were presented in Tables and figures. The study found that a unit increase in post-award contract monitoring and evaluation leads to improvement in project performance. Finally, it was found that regulatory framework moderates the relationship between post-award contract monitoring and evaluation and performance, signifying that an improvement in regulatory frameworks positively influences the impact of Post-award contract monitoring and evaluation on performance.

Mwai and Ndungu (2024) focused on monitoring of project contract and completion of road projects in Kenya: A Case of Kenya Rural Roads Authority in Embu County. Descriptive survey was used. Pearson`s Correlation analysis was used to determine linear relationships between variables. It implied a very strong positive relationship between monitoring of the project contract and completion of road construction projects.

RESEARCH METHODOLOGY

This study adopted a descriptive survey design. Descriptive survey is appropriate for this study whose intention is to present a situation, what people currently believe in, what people are doing at the moment and so forth with no control of the variables under investigation which is a limitation. The target population of the study was a sample of 51 water projects in Nairobi City County. The specific respondents were, customers, project managers, project procurement officers, project accountants, and project administrators involved in the implementation of the projects. A representative from each project was picked making up total of 306 respondents. The sample size was 98 officers involved in the implementation of the projects in Nairobi County who were selected using simple random sampling as per the table below:

This study used primary data which was collected through use of a questionnaire. Lowe (2019) recognized pilot study as the first step towards conducting a fully pledged study as it helps the researcher to formulate a clear road map to follow for the rest of the research. A sample size of 9 which is deemed to actually representing 10% of the sample size was selected for the pilot. In this case management managers of water projects in Nairobi city county, Kenya. The water projects managers that were piloted were not included in the final study.

Qualitative data was analyzed using content analysis. Quantitative data analysis was done using both descriptive statistics and inferential statistics, where descriptive statistics included mean, standard deviation, percentages, and frequencies. Inferential statistics was used to show the relationship between variables included regression analysis and correlation analysis. The statistical package for social sciences (SPSS version 22) was used to compute and analyze research findings. The use of multiple linear regression model helped in determining whether independent variables predict the given dependent variable and thereby increasing the accuracy of estimate. The results were presented using charts and tables.

Multiple regression models were:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$

Where; Y = performance of water projects

β_0 = Constant (coefficient of intercept)

$B_1 \ldots B_2$ = Regression coefficient of two variables.

X_1= contract administration

X_2= contract negotiation

ε = Error term

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Descriptive Statistics

Contract Implementation and Project Performance

The first specific objective of the study was to ascertain the effect of contract implementation on performance of public water projects in Nairobi City County, Kenya. The respondents were requested to indicate their level of agreement on various statements related to contract implementation on performance of public water projects in Nairobi City County, Kenya. The results were as shown Table 1

From the results, the respondents agreed that project Kick-off meetings are conducted before site handover (M=3.788, SD= 0.631). In addition, the respondents agreed that there are proper processes for site handover and takeover of projects before commencement of projects in Nairobi City County (M=3.769, SD= 0. 823). Further, the respondents agreed that supplier relationship management has enhanced performance of projects in Nairobi City County (M=3.742, SD= 0.811).

From the results, the respondents agreed that the stakeholders' feedback is considered during project implementation in Nairobi City County (M=3.725, SD= 0.538). In addition, the respondents agreed proper communication is practiced during project implementation in Nairobi City County (M=3.708, SD= 0.758). Further, the respondents agreed that proper communication channels are established during project implementation in Nairobi City County (M=3.681, SD= 0.573).

Table 1: Contract Implementation and Project Performance

	Mean	Std. Deviation
Project Kick-off meetings are conducted before site handover	3.788	0.631
There are proper processes for site handover and takeover of projects before commencement of projects in Nairobi City County	3.769	0.823
Supplier relationship management has enhanced performance of projects in Nairobi City County	3.742	0.811
The stakeholders' feedback is considered during project implementation in Nairobi City County	3.725	0.538
Proper communication is practiced during project implementation in Nairobi City County	3.708	0.758
Proper Communication channels are established during project implementation in Nairobi City County	3.681	0.573
Aggregate	**3.736**	**0.689**

Contract Monitoring and Project Performance

The second specific objective of the study was to examine the effect of contract monitoring on performance of public water projects in Nairobi City County, Kenya. The respondents were requested to indicate their level of agreement on various statements related to contract monitoring on performance of public water projects in Nairobi City County, Kenya. The results were as shown Table 4.2.

From the results, the respondents agreed that performance monitoring is well practiced during the project implementation (M=3.904, SD= 0.754). In addition, the respondents agreed that contract implementation teams are established for monitoring the performance of contracts (M=3.878, SD= 0.664). Further, the respondents agreed that risk identification and compliance is well assessed during projects implementation (M=3.840, SD= 0.539).

From the results, the respondents agreed that a management system is in place to aid project monitoring to avoid deviation from the original contract terms (M=3.816, SD= 0.728). In addition, the respondents agreed that proper record keeping is practiced in the project to aid in monitoring payments (M=3.801, SD= 0.863). Further, the respondents agreed that records from the project are archived for future reference (M=3.777, SD= 0.591).

Table 2: Contract Monitoring and Project Performance

	Mean	Std. Deviation
Performance monitoring is well practiced during the project implementation	3.904	0.754
Contract implementation teams are established for monitoring the performance of contracts	3.878	0.664
Risk identification and compliance is well assessed during projects implementation	3.840	0.539
A management system is in place to aid project monitoring to avoid deviation from the original contract terms	3.816	0.728
Proper record keeping is practiced in the project to aid in monitoring payments	3.801	0.863
Records from the project are archived for future reference	3.777	0.591
Aggregate	**3.836**	**0.690**

Project Performance

The respondents were requested to indicate their level of agreement on various statements related to performance of public water projects in Nairobi City County, Kenya. The results were as shown Table 3.

From the results, the respondents agreed that the projects implemented have met the objectives of provision of sufficient water for all (M=3.836, SD= 0.794). In addition, the respondents

agreed that the project has resulted in ease of accessibility of water to most residents of Nairobi City County, Kenya (M=3.819, SD= 0.682). Further, the respondents agreed that as proposed, the funds set aside at the beginning of project implementation was utilized as planned (M=3.794, SD= 0.759).

From the results, the respondents agreed that all the projects were completed by the deadline and within the contract price (M=3.776, SD= 0.876). In addition, the respondents agreed that the project operation and maintenance costs run are manageable (M=3.732, SD= 0.692). Further, the respondents agreed that records documenting each lesson learnt while implementing projects are available (M=3.701, SD= 0.764).

Table 3: Project Performance

	Mean	Std. Deviation
The projects implemented have met the objectives of provision of sufficient water for all.	3.836	0.794
The project has resulted in ease of accessibility of water to most residents of Nairobi City County, Kenya.	3.819	0.682
As proposed, the funds set aside at the beginning of project implementation was utilized as planned.	3.794	0.759
All the projects were completed by the deadline and within the contract price	3.776	0.876
The project operation and maintenance costs run are manageable	3.732	0.692
Records documenting each lesson learnt while implementing projects are available.	3.701	0.764
Aggregate	**3.776**	**0.761**

Correlation Analysis

This research adopted Pearson correlation analysis determine how the dependent variable (performance of public water projects in Nairobi City County, Kenya) relates with the independent variables (contract implementation and contract monitoring).

Table 4: Correlation Coefficients

		Project Performance	Contract Implementation	Contract Monitoring
Project Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	87		
Contract Implementation	Pearson Correlation	.877**	1	
	Sig. (2-tailed)	.000		
	N	87	87	
Contract Monitoring	Pearson Correlation	.864**	.330	1
	Sig. (2-tailed)	.001	.031	
	N	87	87	87

Further, the results revealed that there is a very strong relationship between contract implementation and performance of public water projects in Nairobi City County, Kenya (r = 0.877, p value =0.000). The relationship was significant since the p value 0.000 was less than 0.05 (significant level). The findings are in line with the findings of Chong and Cheng (2023) that there is a very strong relationship between contract implementation and project performance

The results also revealed that there was a very strong relationship between contract monitoring and performance of public water projects in Nairobi City County, Kenya (r = 0.864, p value =0.001). The relationship was significant since the p value 0.001 was less than 0.05 (significant level). The findings are in line with the results of Mwai and Ndungu (2024) who revealed that there is a very strong relationship between contract monitoring and project performance

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (contract implementation and contract monitoring) and the dependent variable (performance of public water projects in Nairobi City County, Kenya).

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.887	.787	.786	.10120

a. Predictors: (Constant), contract implementation and contract monitoring

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.787. This implied that 78.7% of the variation in the dependent variable (performance of public water projects in Nairobi City County,

Kenya) could be explained by independent variables (contract implementation and contract monitoring).

Table 6: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.384	2	43.602	155.16	.000[b]
	Residual	23.619	84	.281		
	Total	111.003	86			

a. Dependent Variable: performance of public water projects in Nairobi City County, Kenya
b. Predictors: (Constant), contract administration, contract negotiation, contract implementation and contract monitoring

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 155.16 while the F critical was 2.483. The p value was 0.000. Since the F-calculated was greater than the F-critical and the p value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of contract administration, contract negotiation, contract implementation and contract monitoring on performance of public water projects in Nairobi City County, Kenya.

Table 7: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.286	0.074		3.865	0.000
	contract implementation	0.374	0.098	0.375	3.816	0.000
	contract monitoring	0.361	0.094	0.360	3.840	0.001

a Dependent Variable: performance of public water projects in Nairobi City County, Kenya

The regression model was as follows:

$$Y = 0.286 + 0.374X_1 + 0.361X_2 + \varepsilon$$

Furthermore, the results revealed that contract implementation has significant effect on performance of public water projects in Nairobi City County, Kenya $\beta 1=0.374$, p value= 0.000). The relationship was considered significant since the p value 0.000 was less than the significant level of 0.05. The findings are in line with the findings of Chong and Cheng (2023) that there is a very strong relationship between contract implementation and project performance.

In addition, the results revealed that contract monitoring has significant effect on performance of public water projects in Nairobi City County, Kenya β1=0.361, p value= 0.001). The relationship was considered significant since the p value 0.001 was less than the significant level of 0.05. The findings are in line with the results of Mwai and Ndungu (2024) who revealed that there is a very strong relationship between contract monitoring and project performance.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Further, the study concludes that contract implementation has a positive and significant effect on performance of public water projects in Nairobi City County, Kenya. Findings revealed that site handover/takeover, relationship management and communication influences performance of public water projects in Nairobi City County, Kenya. The study also concludes that contract monitoring has a positive and significant effect on performance of public water projects in Nairobi City County, Kenya. Findings revealed that performance, compliance and record keeping influence performance of public water projects in Nairobi City County, Kenya.

Recommendations

Further, the study recommends that the management of public water projects in Kenya should establish a robust supervision and compliance mechanism throughout the project lifecycle. Effective contract implementation requires continuous oversight to ensure that all contractual obligations such as timelines, resource utilization, quality standards, and safety measures are being met. The study also recommends that the management of public water projects in Kenya should adopt a digital project monitoring and reporting system. Utilizing technology to track project milestones, financial expenditures, contractor performance, and compliance with contract terms allows for real-time data collection and analysis.

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