



**INFLUENCE OF PROCUREMENT CONSULTANCY SERVICES ON PERFORMANCE OF GOVERNMENT FUNDED INFRASTRUCTURE PROJECTS IN NAIROBI COUNTY, KENYA**

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**ABSTRACT**

The general objective of the study is to examine the influence of procurement consultancy services on performance of government funded construction projects in Nairobi County, Kenya. The specific objectives of this study were: to determine the influence of client-consultant interaction on performance of government funded construction projects in Nairobi County, Kenya and to assess the influence of total quality management on performance of government funded construction projects in Nairobi County, Kenya. This study is anchored on Transaction Cost Theory, Demings' theory. Conceptual framework as a concise description of the phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study is developed. The framework addresses the four main independent variables that are important in this study. This study adopted a descriptive survey. The target population of the study will be 123 procurement managers of the infrastructure projects. A pilot study was conducted to pretest and validate the questionnaire. Quantitative data to be collected was analyzed by the use of descriptive statistics such as mean, standard deviation, frequency and percentage and presented through frequency tables. The information was presented through use of bar charts, graphs and pie charts and in prose-form. Content analysis was used to test data that is qualitative in nature or aspect of the data collected from the open ended questions. In addition, the study conducted a multiple regression analysis at .05 level of significance. The study revealed that client-consultant interaction has a positive and significant influence on the performance of government funded construction projects in Nairobi County, Kenya. The study established that total quality management has a positive and significant influence on the performance of government funded construction projects in Nairobi County, Kenya. From the findings,

**Key Words:** Procurement Consultancy Services, Client-Consultant Interaction And Total Quality Management

## **Background of the Study**

According to Schiele and McCue (2019), consultancy services are provided to organizations by trained individuals who help their client with identifying, analyzing and solving certain problems. In some cases, the service provider can also contribute in the execution of the proposed solution. The governments use consulting services for different types of assignments, such as environmental assessment, engineering and architectural planning. Therefore, the performance of consultants influence the quality and costs of built facilities (Sporrong, 2019).

Government construction projects are created through a procurement process, for which foundations are set in the early phases. It is during the planning stage that expectations regarding the outcome are formed and it is during the formulation of the contract documents that the criteria for achieving the final product are chosen. The government is responsible for the main part of the early phases, including defining the project and formulating its requirements. It is the government who develops the project from concept to delivery while ensuring that all needs of different stakeholders are met (RoK, 2016). A key factor in achieving this is to procure the right resources for the project, including procurement consultancy services.

Procurement consultancy services have a great effect on the outcome of any construction project (Sporrong, 2011). An important and difficult aspect of procuring such services is to identify and select those consultants that have the experience and expertise best suited for a specific project. In addition, the service has to be within a reasonable cost frame. It is the government's responsibility to find the right basis for evaluating tenders, which requires a reasonable balance between price and other award criteria (Day, 2018).

In Kenya, as in most other countries, consulting firms must follow the laws and regulations that govern public procurement. However, sometimes the consulting firms find it difficult to procure consultancy services and at the same time obey these laws (Sporrong, 2011). Statistics show that the number of court appeals made by discontent service providers is increasing (Taro Lennerfors, 2016). As a consequence, the government tends to base the decision on measurable criteria, such as price. By focusing on price, other aspects such as competence and service quality tend to be less important in the procurement process (Sporrong, 2011). This affects performance government funded construction projects (Okwaro, 2016). It is against this background the current study seek to establish the role of procurement consultancy services on the performance of government construction projects in Nairobi County, Kenya.

Consultancy in the current sense of the term emerged with the growth of the modern business corporation in the nineteenth century. Thus one of the first consulting firms in the area of professional business services, Arthur D. Little, Inc., was established in 1886, primarily with the aim of developing new technical solutions to problems experienced by the growing sector of industrial business enterprises in the United States. Accounting was also becoming a specialized activity, as auditing and bookkeeping procedures were standardized for major firms. The expansion of large corporations as part of the rapid industrial growth which took place around the turn of the century called for more specialized management procedures - the "visible hand" explored by Alfred D. Chandler in his classic work (Chandler, 1977). In the early twentieth century, management science pioneers such as Frederick W. Taylor began acting as consultants for major firms, and some of today's major management consultancy firms were established in the early decades of the century.

Kenya's growth is expected to average 6.5% over the next three years. The growth rate is anchored on the Government Transformative Agenda which is captured in 5( five) broad policies and strategies; creating a conducive business environment for job creation; investing in sectoral transformation to ensure broad based and sustainable economic growth; investing in infrastructure;

investing in quality and accessible healthcare services and quality education as well as strengthening the social safety net; and consolidating gains made in devolution for better services and enhanced economic development (National Treasury, 2016).

According to the National Treasury, (Kenya PPPU, 2015), the provision of public infrastructure (including power, roads, rail, sea and airports) and services (including water, health and sanitation) is a key mandate of governments the world over. These public goods are a fundamental prerequisite for economic growth and development. A significant share of the investment is expected from the private sector. PPPs present the most suitable option of meeting these targets, not only in attracting private capital in creation of infrastructure but also in enhancing the standards of delivery of services through greater efficiency.

Kenya's infrastructure funding gap is estimated at approximately KES.178.5 Billion (\$2.1 billion) per year. Responding to this challenge, the GOK, through the National Treasury, has made infrastructure development and public service provision through PPP a priority mechanism that can help it address this major infrastructure funding gap and achieve the benefits of successful procurement consultancy services investments including: substantial private investment; transfer of significant risk to the private sector; improving access to infrastructure; creating higher quality assets with better operation and maintenance; and helping achieve better value for money (National Treasury, 2016).

### **Statement of the Problem**

The implementation of procurement consultancy services is evolving every day, the urge to keep up with the upcoming market trends has given many public infrastructure projects performance challenges which has necessitated project managers and governments figuring out the best practices to adopt to improve efficiency and effectiveness (Sert, 2015). According to Agaba and Shipman (2008) Sub-Sahara Africa channels between U\$ 30-43 billion to the procurement market in the region for procurement consultancy services. This demand for procurement consultancy services particularly for the developing countries where infrastructure usually accounts for high proportion of total expenditure at 40% against the global average of 18.42%.

Kenya is one country with multitude of government funded infrastructure projects. UNCC (2013) found out that the Kenyan government has not keenly embraced the recommended and acceptable procurement consultancy services. This has resulted in the declining performance of infrastructure projects by more than 40% according to the global governance indices (UNESCAP, 2013). The enactment of legislations by the Kenyan government which conflict with the global procurement consultancy measures has marked the high tide relationship of increasingly latent hostility and mistrust between the government and public due completion of infrastructure projects (UNESCAP, 2015).

Nevertheless UNESCAP (2016) established that in Kenya, infrastructure projects are not explicitly linked to their impact or outcomes. According to the Institute of Economic Affairs (2017), the procurement consultancy measures developed by the Kenyan government to measure performance of infrastructure projects was either objectively or subjectively based on the impact of welfare of local government policies, programs and projects which accommodates the government interests. It is interesting to note that there are contradicting empirical evidence between the appraisal of infrastructure projects based on procurement consultancy services and the enactment of legislations by the Kenyan government which conflict with the global standard performance thus the need arises for this study to examine the influence of procurement consultancy services on performance of government funded construction projects in Nairobi County, Kenya.

## **General Objective**

The general objective of the study was to examine the influence of procurement consultancy services on performance of government funded construction projects in Nairobi County, Kenya.

## **Specific Objectives**

The specific objectives of this study were:

- i. To determine the influence of client-consultant interaction on performance of government funded construction projects in Nairobi County, Kenya.
- ii. To assess the influence of total quality management on performance of government funded construction projects in Nairobi County, Kenya.

## **Theoretical Review**

### **Transaction Cost Theory (TCE)**

The TCE attempts to bring out the concept of cost of doing business in a very wide perspective and looks at how to monitor them. One of the ways proposed by this theory for monitoring internal costs of doing business is use of internal monitoring. The objective of TCE is to explain different forms of organization based on the differences in transaction costs. Firm is seen as a governance structure, rather than as a production function, Williamson, (1996). In addition, TCE tries to identify and mitigate contractual hazards, Williamson, (1996) and links the possible hazards to behavioral assumptions. The first assumption relates to bounded rationality, Simon, (1976), the notion that decision makers' capabilities are bounded in terms of formulating and solving problems and processing all information during the decision-making process. The second assumption deals with opportunism or possible conflicts because individuals are promoting their own self-interest. Opportunism is a variety of self-interest seeking, but extends simple self-interest seeking to include self-interest seeking with guile. It is not necessary that all agents be regarded as opportunistic in identical degree. It suffices that those who are less opportunistic than others are difficult to ascertain and that, even among the less opportunistic, most have their price, Williamson, (1979). These behavioral assumptions lead to incomplete contracting and as a consequence, monitoring of the contract is required to prevent or to handle conflicts. Governance is the economizing response to infuse order and to realize mutual gains, Williamson, (1999).

Transaction cost economics provides a basis for describing a contractual or transactional relationship between parties, in which each party expects something from the other Speklé, (2001). This can be a relationship within the organization, but also between organizations. The choice of mechanism depends on a comparative analysis of the transaction costs characteristics like asset specificity, uncertainty and frequency, Williamson, (1996). The key characteristic asset relates to opportunity losses due to investments in alternative sources. Asset characteristics may take the form of physical, human, site-specific, dedicated assets or investments and brand name capital. Uncertainty or risk indicates the predictability of the environment and sight on possible disturbances to which transactions are subject. Uncertainty also has a behavioral component, in the sense of potential nondisclosure, manipulation of information. Frequency denotes the recurrence of transactions. Depending on these characteristics, TCE analyses the most economic, value preserving governance structure to infuse order, thereby to mitigate conflict and realize mutual gain, Williamson, (2002).

The theory is relevant to the study as it hinges on the two independent variables of the study which are disposal audit and valuation methods. Within a firm there is more administrative control to govern transactions than within a market. Also, within a firm the disputes about incomplete

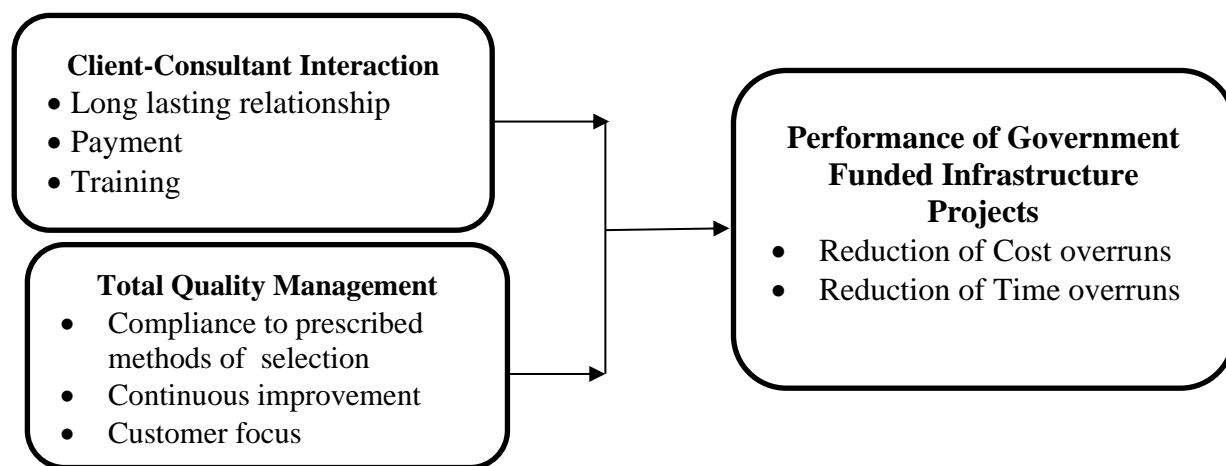
contracts will first be solved within a firm, while in the market any disputes need to be taken to court. Williamson argues that an internal monitor has an advantage over external monitors, as he has greater freedom of action, a wider scope, understands the language of the firm and can rely on less formal evidence, Williamson, (1975). The theory is hence relevant to the study as it helps link disposal audit and valuation methods to the performance of state owned enterprises.

### Deming’s Theory

William Edwards Deming is well known for founding the Deming's theory of Total Quality Management, which rests upon fourteen points of management. He also identified the system of profound knowledge; the Shewart Cycle (Plan-Do-Check-Act), the ratio of Quality is equal to the result of work efforts over the total costs. This ratio explains that if a company is to focus on costs, the problem is that costs rise while quality deteriorates (Brighthub, 2013). Edwards emphasized on the management as a key player in proper delivery of quality. He made it clear that poor management leads to a quality crisis. This also focuses more on the human resource capacity in the organization. If the management has poor quality skills, there will be a quality crisis. In a bid to eliminate some of these managerial mistakes, he came up with Fourteen Points that are applicable in any organization regardless of the type or the size. Therefore, these points are very applicable even in the construction industry (Deming, 1986).

These Deming’s Fourteen Points of Quality were: creation of constancy of purpose geared towards improvement of products and services, adoption of the new philosophy that does not condone commonly accepted mistakes or defective workmanship, ceasing dependence on mass inspection to emphasize on required statistical evidence, end the practice of awarding business on the basis of price only, constantly identify problems and continually improve on the system, make training on the job compulsory, use modern supervisory methods and demonstrate leadership, eliminate fear to foster worker effectiveness, emphasize on freedom between departments, eliminate targets and slogans for the workers, remove any working standards that describe numerical quotas, dispose of barriers denying workers the right of pride of workmanship, invest in a vigorous educational and retraining programs and develop a structure and culture in the company that will enable achievement of quality(Deming, 1986).

### Conceptual Framework



**Independent Variables**

**Dependent Variable**

**Figure 2.1: Conceptual Framework**

## **Client-Consultant Interaction**

Client-consultant interaction and relationship is, according to Nikolova et al. (2009), the most important factor for the success of consulting projects. There are three different models of client-consultant interaction, The expert model express that the consultant has the dominating role in the relationship and possess knowledge that is superior to the client's specific knowledge. The critical model is based on a belief that knowledge is socially constructed and not based on scientific objectivity. In this model, clients are described as passive actors that focus on managing their insecurities and fears. The social learning model claims that both clients and consultants are active players in the process of identifying and solving problems. Nikolova and her fellow authors describe the interaction as a participative learning process, in which both clients and consultants contribute valuable knowledge and ideas to the project. A successful interaction between client and consultants requires that clients and consultants work collaboratively in identifying the problem and developing its necessary solution. Thereby, it is important with a balanced relationship where neither party is dominating.

## **Total Quality Management**

TQM has been widely implemented throughout the world. Many consulting firms have arrived at the conclusion that effective quality management can improve their competitive abilities and provide strategic advantages in the marketplace (Hackman&Wageman, 2015). TQM has been widely recognized and successfully implemented in many consulting firms, giving them the edge in both international and local competitiveness through superior procurement performance and the production of high quality products that not only meet customers' needs, but also delight them (Goh & Ridgway, 2013).

The main focus of total quality management philosophy is to achieve a comprehensive integration among organizational staff and their functions in order to gain better enhancement, progress and preservation of products and services quality to achieve customer satisfaction (Talib, 2013). This managerial philosophy is directly focuses on improving business quality and satisfaction of managers through enhancing the employee's involvement in decision making processes by utilizing teams of quality improvements and quality circle strategies (Yusuf et al., 2007). Furthermore, one of the most important elements that ensure the success of TQM practices is the management commitment. Therefore, total quality management is a managerial strategy that aims to enhance organizational performance and efficiency through enhancing the quality of services and products in the organizations (Arumugam et al., 2008).

Radnor and Mahoney (2013) study reflected on the growing trend of engaging management consultancies in implementing operations management innovations in the public sector. Whilst the differences between public and private sector operations have been documented, there is a dearth of material detailing the impact of public sector engagements on the consultancies themselves and the operations management products and services they develop. Drawing on qualitative data, the paper aimed to identify both the impact of operations management in the public sector and the impact of this engagement on the consultancies that are involved.

This study drew on rich, qualitative data from six large management consultancies, amounting to over 48 interviews. An inductive methodology sought to identify both how consultancies have adapted their operations management products and services, and why. The study found out that the different context of the public sector provides consultants with considerable challenges when implementing operations management projects. The study showed that public services are often hampered by different cultures, structures, and managerial knowledge and investment patterns.

Such constraints have an impact on both the projects being implemented and the relationship between consultants and clients

## **Empirical Review**

Roodhooft (2016) study shed light on the procurement process of consulting services within the public sector and to benchmark the obtained results with practices in the private sector. A two-stage research design was used. First, in-depth personal interviews were conducted with six users of consulting services. The second stage involved a cross-sectional survey of purchasers of a broad range of business advisory services. This included private as well as public purchasers. It was found that the procurement process of consulting services in the public sector differs significantly from that of private companies. Further analyses indicate that purchasers from public and private organizations are equally satisfied with the results of consulting services.

Chelliah (2010) has studied the psychodynamics of the client-consultant relationship and states that clients often have unspoken expectations of the consultants. If these expectations can be identified and managed by the consultant, successful outcomes can be gained for both clients and consultants. It is also important that the different actors understand each other. As an example, clients must know their consultants' preferences to be able to motivate them. Chelliah and Davis (referred in Chelliah, 2010) stated the consultants will put extra effort in their work if they can, secure additional future work from the client; gain a competitive advantage over other consultants in future projects; or achieve self-satisfaction as an indicator of a job well done.

In their study, Nikolova et al. (2009) express that clients and consultants speak different languages and have difficulties in communicating with each other. Therefore, it is important to set as mutual language and a common set of expectations. They also claim that clients and consultants can only make sense of each other's actions and work successfully together if they have similar expectations of the outcome. Bruhn, Karlan and Schoar (2018) sought to examine the impact of consulting services on Small and Medium Enterprises: Evidence from a Randomized Trial in Mexico. A randomized control trial with 432 small and medium enterprises in Mexico showed a positive impact of access to 1 year of management consulting services on total factor productivity and return on assets.

Willoughby, Carmona and Momparler (2011) examined whether the provision of consulting services undermines audit reporting quality by testing for an association between advisory services and audit reporting. A cross-sectional logistic regression is estimated to test the relationship between consulting fees and the audit outcome. The evidence suggested that there is no statistically significant association between non-audit fees and audit outcome. This finding was consistent with the idea that audit reporting quality is not impaired by the provision of consulting services.

Mian (2013) addressed the question of the effectiveness of business consultants in operations development projects. It does this by analyzing the results of collaboration between a multinational firm and business consultants who applied the theory of constraints to a series of development projects. Following the presentation of an overview of business consultants and the need to measure the effectiveness of business consulting practices, the paper presents empirical data on the return on investment achieved from 20 development projects in the multinational company under study. The findings indicate that the involvement of business consultants in development projects has a positive impact on outcomes and can be justified in financial terms.

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## **RESEARCH METHODOLOGY**

### **Research Design**

The study adopted a descriptive survey design. A descriptive survey design as described by Mugenda and Mugenda (2012) is an attempt to collect data from members of a population in order to determine the current status of that population with respect to one or more variables. The research design constitutes the blue print for the collection, measurement and analysis of data, (Kothari, 2011). The study adopted this design since it is an efficient method of collecting descriptive data regarding characteristic of a sample of a population, current practices, conditions or needs.

### **Target Population**

According to Gall and Borg, (2007) population refers to the entire spectrum of a system of interest. Kerlinger (2016) defined population as the universe of units from which the sample is to be selected. The target population comprise of all the 123 government funded infrastructure projects in Nairobi County, Kenya.

### **Sampling Frame, Sample Size and Sampling Technique**

The study adopted a census technique and therefore this ruled out application of specific sampling technique. The study used a census since the population of 123 is small and the study aims to reach all the targeted respondents. The study collected views from the targeted respondents because they are the decision makers in supply chain in the projects and are actively involved in their day to day operations. They are also information rich for the purpose of this study and therefore targeted as respondents for the study. Census provides a true measure of the population since there is no sampling error and more detailed information about the study problem within the population is likely to be gathered (Saunders, 2011). The census approach is justified since according to Orodho (2009), data gathered using census contributes towards gathering of unbiased data representing all individual's opinions on a study problem (Field, 2006).

### **Data Collection Instruments**

The study collected data from the respondents by the use of the questionnaire. The questionnaire was structured and divided into sections covering each of the objectives of the study. According to Nichols, Mitchell, Nichols, Chalmers, and Begley (2013) they observed that, a questionnaire is simply a tool for collecting and recording information about a particular issue of interest to an



individual. It is mainly made up of a list of questions, having clear instructions and space for answering the questions. The structured questions were used in an effort to conserve time and to facilitate easier analysis as they are in immediate usable form. This would help in easy data analysis. The study utilized quantitative and qualitative questionnaire that is developed for generating information on key variables of interest from the targeted respondents in this study. The study also undertook desk review of existing information about the study areas and collect qualitative data through in-depth interview from respondents who are conversant with the subject through various interactions or experiences. These respondents were specifically targeted for their ability to provide pertinent information to the study.

### **Pilot Study**

A pilot study is a small or trial run done in preparation for a proper major study (Polit & Hunglar 2015). This aims to obtain information in order to assess the feasibility of the study and also to identify unclear or ambiguously formulated items. A pilot test is conducted to at least 10% of the population to detect weaknesses in design and instrumentation and to provide proxy data for selection of a probability sample Cooper & Schindler, 2010). A pilot study was conducted and 12 questionnaires distributed to procurement managers of the projects in Nairobi County.

### **Data Analysis and Presentation**

The research perused completed questionnaires and document analysis recording sheets. Quantitative data collected was analyzed using SPSS and presented through percentages, means, standard deviations and frequencies. The information was displayed by use of bar charts, graphs and pie charts and in prose-form. This generated quantitative reports through tabulations, percentages, and measures of central tendency. This involved tallying up responses, computing percentages of variations in response as well as describing and interpreting the data in line with the study objectives and assumptions through use of SPSS.

Content analysis was used to test data that is qualitative nature or aspect of the data collected from the open ended questions. According to Baulcomb, (2013), content analysis uses a set of categorization for making valid and replicable inferences from data to their context. a correlation matrix was developed to analyze the relationships between the independent variables as this would assist in developing a prediction multiple model. In addition, the study conducted a multiple regression analysis to establish the relationship between the dependent variable and independent variable at .05 level of significance. The multiple regression equation was as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \varepsilon$$

Whereby

**Y** = Performance of Government Funded Construction Projects (Dependent variable)

**X<sub>1</sub>**= Client-consultant integration (Independent variable),

**X<sub>2</sub>**= Total quality management (Independent variable),

**β<sub>1</sub>** and **β<sub>2</sub>** are coefficients of determination

**ε** is the error term.

## RESEARCH FINDINGS AND DISCUSSIONS

### Descriptive Statistics Analysis

#### Client-Consultant Interaction

The first specific objective of the study was to establish the influence client-consultant interaction on performance of government funded construction projects in Nairobi County, Kenya. The respondents were requested to rate various statements relating to client-consultant interaction and performance of government funded construction projects in Nairobi County, Kenya. A five likert scale was used where 5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree and 1=strongly disagree. The results were as shown Table 4.1.

From the results, the participants agreed with a mean of 4.463 (std. dv = 0.106) that clients and consultants contribute valuable knowledge and ideas to the project. Further, the respondents agreed that am satisfied with the level of client consultant interaction. This is shown by a mean of 4.370 (std. dv = 0.882). In addition, the respondents agreed that their team members have enough skills to carry out their duties. This is shown by a mean of 4.315 (std. dv = 0.590).

With a mean of 4.241 (std. dv = 0.695), the respondents agreed that a successful interaction between client and consultants facilitates project performance. In addition, the participants agreed that employee training is adopted to facilitate performance. This is shown by a mean of 4.259 (std. dv = 0.931). Further, the respondents agreed that they are satisfied with the level of training offered to the organization employees. This is shown by a mean of 4.148 (std. dv = 0.873). As shown by a mean of 3.722 (std. dv = 0.874), the participants agreed that long term relationships with clients is ensured. Nevertheless, the participants disagreed with the statement indicating that the payment plan is on the basis of payment after delivery. This is shown by a mean of 2.241 (std. dv = 0.110).

**Table 4. 1: client-consultant interaction**

	1	2	3	4	5	Mean	Std. Deviation
long term relationships with clients is ensured	0.0	7.4	33.3	38.9	20.4	3.722	0.874
The payment plan is on the basis of payment after delivery	25.9	44.4	14.8	9.3	5.6	2.241	0.110
employee training is adopted to facilitate performance	3.7	1.9	5.6	42.6	46.3	4.259	0.931
Am satisfied with the level of client consultant interaction	1.9	3.7	5.6	38.9	50.0	4.370	0.882
Am satisfied with the level of training offered to the organization employees	0.0	5.6	14.8	38.9	40.7	4.148	0.873
Our team members have enough skills to carry out their duties	0.0	0.0	5.6	51.9	42.6	4.315	0.590
clients and consultants contribute valuable knowledge and ideas to the project	1.1	9.3	11.1	19.3	59.3	4.463	0.106
A successful interaction between client and consultants facilitates project performance	0.0	0.0	14.8	46.3	38.9	4.241	0.695

#### Total Quality Management

The fourth specific objective of the study was to establish the influence of total quality management on performance of government funded construction projects in Nairobi County, Kenya. The respondents were requested to rate various statements relating to total quality

management and performance of government funded construction projects in Nairobi County, Kenya. A five likert scale was used where 5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree and 1=strongly disagree. The results were as shown Table 4.2.

From the results, the participants agreed with a mean of 4.463 (std. dv = 0.662) that they are satisfied with the level of quality ensured in projects funded by the government. Further, the respondents agreed that effective quality management can improve their competitive abilities. This is shown by a mean of 4.426 (std. dv = 0.567). In addition, the respondents agreed that quality management aims at achieving a comprehensive integration among organizational staff. This is shown by a mean of 4.315 (std. dv = 0.636).

With a mean of 4.056 (std. dv = 0.852), the respondents agreed that compliance to prescribed methods of contract selection is always adhered to. In addition, the participants agreed that total quality management is a managerial strategy. This is shown by a mean of 3.907 (std. dv = 0.938). Further, the respondents agreed that total quality management enhances the quality of services delivered. This is shown by a mean of 3.870 (std. dv = 0.301). Nevertheless, the participants disagreed with the statement indicating that there has been continuous improvement in terms of project quality. This is shown by a mean of 2.222 (std. dv = 1.105).

**Table 4. 2: Total Quality Management**

	1	2	3	4	5	Mean	Std. Deviation
Compliance to prescribed methods of contract selection is always adhered to	0.0	3.7	22.2	38.9	35.2	4.056	0.852
There has been continuous improvement in terms of project quality	27.8	40.7	18.5	7.4	5.6	2.222	1.105
Am satisfied with the level of quality ensured in projects funded by the government	0.0	0.0	9.3	35.2	55.6	4.463	0.662
Effective quality management can improve their competitive abilities	0.0	0.0	3.7	50.0	46.3	4.426	0.567
Quality management aims at achieving a comprehensive integration among organizational staff	0.0	0.0	9.3	50.0	40.7	4.315	0.636
Total quality management is a managerial strategy	7.4	3.0	6.7	57.4	25.6	3.907	0.938
Total quality management enhances the quality of services delivered	9.6	7.0	9.3	34.8	39.3	3.870	0.301

### Inferential Statistics

In this study, both correlation and regression analysis were used to establish the relationship between the independent variables (client-consultant interaction and total quality management) and the dependent variable (performance of government funded construction projects in Nairobi County, Kenya).

### Correlation Analysis

Pearson correlation analysis was used to establish the relationship between client-consultant interaction and total quality management and performance of government funded construction projects in Nairobi County, Kenya. The results were as depicted in Table 4.3.

As illustrated in table 4.3, there is a positive and significant association between client-consultant interaction and the performance of government funded construction projects in Nairobi County, Kenya ( $r=0.906$ ,  $p$  value  $=0.000$ ). The  $p$ -value ( $0.000$ ) was less than the significant level  $0.05$  hence making the association significant. The results concur with the findings of Nikolova *et al.* (2009) who revealed that client-consultant interaction significantly influence project performance.

In addition, there is a positive and significant association between total quality management and the performance of government funded construction projects in Nairobi County, Kenya ( $r=0.877$ ,  $p$  value  $=0.000$ ). The  $p$ -value ( $0.000$ ) was less than the significant level  $0.05$  hence making the association significant. These findings are in line with the results of Hackman and Wageman, (2015) who revealed a positive and significant association between total quality management and project performance.

**Table 4. 3: Correlations Coefficients**

		<b>Project Performance</b>	<b>Client-Consultant Interaction</b>	<b>Total Quality Management</b>
<b>Project Performance</b>	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	108		
<b>Client-Consultant Interaction</b>	Pearson Correlation	.906	1	
	Sig. (2-tailed)	.000		
	N	108	108	
<b>Total Quality Management</b>	Pearson Correlation	.877	.332	1
	Sig. (2-tailed)	.000	.065	
	N	108	108	108

**Regression Analysis**

Multivariate regression analysis was adopted to establish the relationship between the independent variables (client-consultant interaction and total quality management) and the dependent variable (performance of government funded construction projects in Nairobi County, Kenya).

The multivariate regression model was as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \varepsilon$$

Where;  $Y$  = is the dependent variable (Performance of government funded construction projects),  $\beta_0$  = Constant Term;  $\beta_1$ - $\beta_4$  = regression coefficients;  $X_1$ = Client-Consultant Interaction;  $X_2$ = Total Quality Management; and  $\varepsilon$  = error term.

The research used R-squared to show the variation in dependent variable (performance of government funded construction projects in Nairobi County, Kenya) that could be explained by (service pricing and purchasing, client-consultant interaction, contract management and total quality management). The R squared was  $0.734$  and this implied that  $73.4\%$  of the dependent variable (performance of government funded construction projects in Nairobi County, Kenya) could be explained by independent variables (service pricing and purchasing, client-consultant interaction, contract management and total quality management).

**Table 4. 4: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.857 <sup>a</sup>	.734	.735	.17693

a. Predictors: (Constant), client-consultant interaction and total quality management

The research used analysis of variance to determine if the model was good fit for the data. As depicted in Table 4.5, the F calculated was 345.1064 which is higher than the F critical value 2.7318. Besides, the p value was 0.000 which is less than the significant level of 0.05. This implies that the model was a good fit for the data hence can be used to show the influence of independent variables (client-consultant interaction and total quality management) on the dependent variable (performance of government funded construction projects in Nairobi County, Kenya).

**Table 4. 5: Analysis of Variance**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	97.321	2	48.66	345.1064	.000 <sup>b</sup>
Residual	9.786	104	.094		
Total	117.058	107			

a. Dependent Variable: Project Performance

b. Predictors: (Constant), client-consultant interaction and total quality management

The regression equation was;

$$Y = 0.531 + 0.522X_1 + 0.645X_2$$

The results revealed that client-consultant interaction has a positive and significant influence on the performance of government funded construction projects in Nairobi County, Kenya ( $\beta_1=0.522$ , p value= 0.000). The p-value (0.000) was less than the significant level 0.05 hence making the relationship significant. This implies that ensuring client-consultant interaction leads to improvement in the performance of government funded construction projects in Nairobi County, Kenya. The results concur with the findings of Nikolova *et al.* (2009) who revealed that client-consultant interaction significantly influence project performance.

Further, the results revealed that total quality management has a positive and significant influence on the performance of government funded construction projects in Nairobi County, Kenya ( $\beta_1=0.645$ , p value= 0.000). The p-value (0.000) was less than the significant level 0.05 hence making the relationship significant. This implies that improving total quality management leads to improvement in performance of government funded construction projects in Nairobi County, Kenya. These findings are in line with the results of Hackman and Wageman, (2015) who revealed a positive and significant association between total quality management and project performance.

**Table 4. 6: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	0.531	0.095		5.589474	0.000
<b>Client-Consultant Interaction</b>	0.522	0.107	0.521	4.878505	0.000
<b>Total Quality Management</b>	0.645	0.138	0.643	4.673913	0.000

a Dependent Variable: Project Performance

## Conclusions

The study concludes that client-consultant interaction has a positive and significant influence on the performance of government funded construction projects in Nairobi County, Kenya. Findings revealed long lasting relationship, payment and training influence the performance of government funded construction projects in Nairobi County, Kenya. This implies that improvement in client-consultant interaction (long lasting relationship, payment and training) leads to improvement in the performance of government funded construction projects in Nairobi County, Kenya.

The study concludes that total quality management has a positive and significant influence on the performance of government funded construction projects in Nairobi County, Kenya. Findings revealed that compliance to prescribed methods of selection, continuous improvement and customer focus influence the performance of government funded construction projects in Nairobi County, Kenya. This implies that improvement in total quality management (compliance to prescribed methods of selection, continuous improvement and customer focus) leads to improvement in the performance of government funded construction projects in Nairobi County, Kenya.

## Recommendations

The study findings revealed that a successful interaction between client and consultants facilitates project performance. This study therefore recommends long term interaction between clients and consultants so as to facilitate performance of government funded construction projects. The study also found that team training improves the productivity of team members; this study therefore recommends that project leaders should organize training sessions which will enhance the skills of the team members hence improving their productivity.

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