



EFFECTS OF CLIENT SELECTION CRITERIA ON SUCCESSFUL COMPLETION OF CONSTRUCTION PROJECTS IN UASIN GISHU COUNTY

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Owiti, J. O.

Jomo Kenyatta University of Agriculture and Technology [JKUAT], Kenya

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ABSTRACT

*The construction industry is an economic backbone of many countries but is encumbered by many challenges which compromises successful completion of its projects. Amongst these challenges are the client selection criteria at the initial phases of construction projects. The purpose of this study therefore was to assess the effects of client selection criteria on successful completion of roads construction projects within Uasin Gishu County. The study adopted a descriptive case study research design with a sample size of 114 respondents. A census survey method was used in selecting the respondents. Data was collected from Contractor managers, procurement officers, Engineers, Quantity surveyors and Site supervisors using questionnaires designed by use of 5 point likert scaling and interviews. From findings of the study correlations between selection criteria, where $r=.738^{**}$ positively and significantly related to successful completion of construction projects where $P<0.05$. R square of 0.545 indicated that the model explained only 54.5% of the variation or change in the dependent variable. The β value for client selection criteria (.738) was positive. In this regard the study provides absolute support to the suggestion that client selection criteria as entrenched in the Kenyan public procurement and disposal act of 2015 be recognized by county governments as a significant precursor for the successful completion of construction projects .*

Keywords: Client selection criteria, Successful completion of projects

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INTRODUCTION

The complexity of construction projects makes it very important for the client to select a construction company that is able to cope with all aspects of the building process, thereby increasing the chance of a successful execution of the project (Vermeulen, 2012). The importance of this selection process is often underestimated (Kumaraswamy, 1995). Appropriate selection process would eventually guarantee satisfaction with results between the contractor and the project

Owner hence perceived project success. Leung et al (2004) confirm this, and argue that participant satisfaction "is more important to project success than meeting any particular project objectives" (Leung & Cheung, 2004). Construction projects and their success are highly dependent on contractors (Banki et al., 2009 ; Ng et al., 2009 ; Yaweli et al., 2005). Appointment of the right contractor will not only ensure the overall quality of the project but also offer the opportunity of saving on costs (Yaweli et al., 2005).

The goal of this selection process is to select a contractor capable of delivering the proposed result within the predefined delivery time, in acceptable quality and within budget (Topcu, 2004). Public organizations have to select contractors within the confines of governmental laws to alleviate the risk of contractor failures, while private organizations have the discretion to outsource projects to a contractor their choice. In Kenya the public procurement act 2015 advocates for public tendering which is argued that comes forth from the idea of free market competition; full price completion should automatically lead to best value for money for the client. On the flipside Vermeulen, (2012) opines that selection on tendering price forces contractors to lower their costs, possibly leading to the usage of inferior construction materials and less skilled employees hence project failure.

Eriksson and Westerberg (2012) study in Sweden, postulates that different procurement factors at the design, bid invitation, bid evaluation and sub-

contractor selections stages can have various influences on successful completion of projects. (Rosli , et al., 2006) and (Ogunsanmi, 2013) in their studies on effect of different procurement process on successful completion of projects in Malaysia and Nigeria respectively, found out that procurement processes had positive impact on successful completion of project.

In Kenya despite efforts by the government to improve construction projects delivery through Public Procurement and Disposal Act 2015, success has been hampered by endemic delays in successful project completion (Nekesa, 2015). According to Road Inventory and Condition (RIC) Survey of 2009, only 19% of the classified road networks are in good maintainable condition while 50% is fair and the remaining 31% is in poor condition requiring improvement through rehabilitation (ROK., 2010). "Although many researchers and construction industry practitioners have been proposing different methods and procedures for contractor selection, most of them have shortcoming in drawing a clear link between the selection criteria and the project success leading to a win-win situation to all parties" (Doloi, 2009). Its therefore valuable to both practitioners and researchers to interrogate the effect of selection criteria on project success which was the main objective of this study in Uasin Gishu county.

Statement of the Problem

The construction industry in Kenya has suffered cost escalation, delayed completion, collapse and site abandonment due to lack of adequate coordination of various disciplines including procurement. Uasin Gishu county has not been exception as it has been encumbered with an outcry about slow rate of works which precipitates time and cost overruns hence unsuccessful completion of projects (KeRRA, 2014). These have been corroborated by Eriksson and Westerberg, (2016) who opines that the construction industry frequently receives criticism regarding unsuccessful completion of projects .Despite the efforts by the government of Kenya to improve delivery of public funded construction

projects through Public Procurement and Disposal Act 2015, their successful completion remains in abeyance. From project management perspective, it is all about meeting or exceeding stake holders' needs and expectations from a project. It is therefore important, that time, cost, and quality of constructed facilities are efficiently managed in the entire project life cycle for effective service or product delivery (Kagiri and Wainaina, 2010).

Appropriate procurement processes remains a panacea in the mitigation of the effects of time and cost overruns on construction projects and continue towards success (Okunlola and Johnson, 2013). Procurement process therefore is one key improvement area that can contribute substantially to project success (Cheung, Wong, & Suen, 2003; Eriksson, 2007). Earlier research efforts in this area have been limited to the investigation of how a single or a few specific procurement alternatives affect one or two project objectives (Oloo, 2013). In order to achieve successful construction project a holistic and systemic approach to procurement processes is crucial (Eriksson & Westerberg, 2010). This motivated the need of the current study which assessed the effects of procurement processes on successful completion of construction projects in Uasin Gishu County.

Study Objectives

The study established the effect of client selection criteria on successful completion of construction projects in Uasin Gishu County.

Client Selection Criteria

According to the study of Soyombo & Ogunsanmi, (2011) have demonstrated that procurement selection factors of client characteristics, project requirements and external environment are in use. However, Schweitzer, Ordóñez, & Douma, (2004) re-emphasized the use of the three factors together but expansively considers client requirements to include cost related factors, time related factors and quality related factors

In actuality, contractor evaluation is often performed by industry professionals using their

accumulated experience and judgment. There are variations in the amount of effort expended in the process, often without an understanding of how such variations influence the project outcome. An important step in evaluation is to examine the contractor's system for handling project information regarding work tasks (Bobkova & Egbert, 2013). Only if a soundly based project information management system is employed should the safety record be examined. The contractor's approach to safety and what actions it takes to achieve desired results should be closely scrutinized.

Many factors should be considered during the contractors' qualification screening. The following list includes most of the key components that should be examined when conducting a contractor qualification. (1) Financial standing, such as financial stability, turnover, profit, obligations, amounts due, and owned financial funds. (2) Technical ability, such as experience, plant and equipment, and personnel. (3) Management capability, such as past performance and quality, quality control policy, quality management system, project management system, experience of technical personnel, and management knowledge. (4) Quality, safety, senior management, including experience, tenure with firm, and division of responsibilities. (5) Current projects/backlog, including number, size, and location of projects, percent of capacity being utilized, and status and expected completion, past failures in completed projects, number of years in construction, past client relationships and cooperation with contactors (Cattell, Bowen, & Kaka, 2007).

Ogunsanmi, 2013) says that quality related factors of design reliability, aesthetic appearance of the building, workmanship amongst other variables are considered are to be considered. General needs factors of involvement of parties, their transparency, accountability, safety requirements and flexibility of the procurement process to client charges are also important. Project characteristics factors like project type, size, cost, degree of

flexibility, complexity, time constraints, payment method, finding methods and innovative technology. Moreover, external environment factors should also be considered in addition to nature of the market, government policies, government as major client, regulating feasibility, technology feasibility amongst other variables (Chemoiywo, 2014).

One way to collecting the data necessary to perform contractor evaluations is to conduct questionnaires. But in this way, contractors will be tempted to answer in a way that puts them in the best light. For instance, one commonly used questionnaire asks contractors if safety is a priority in their business. A review of several hundred responses to this question revealed that not a single contractor answered “No”, while actual work performance indicated that for many, “No” would have been the more accurate response (Erickson & Westerberg, 2010). Thus, this type of question is of no value. The key to a successful methodology is to develop an objective form, from which a database can be built that allows for fair comparisons of contractors. The form should be easy to use. Anyone on the bid evaluation team should be able to conduct the assessment and compare the results (Bobkova & Egbert, 2013).

It is important to obtain criteria ranking which clients take into consideration when evaluating a contractor’s competence. Ogunsanmi, (2013) took into account five basic criteria and twenty one sub criteria which further characterized the basic ones. The proposed factors were established on the basis of literature - among others: Zuleha, Musiega, Kibet, & Manase, (2013) conducted a Delphic study investigating the perceived relationship between twenty contractor selection criteria (CSC) currently in use and project success factors (PSFs) in terms of time, cost and quality is described involving a sample of eight experienced construction personnel, including two validators. A consensus of the likely impact of each criterion on time, cost and quality is established in terms of pessimistic, average and optimistic values, which are then

converted into expected means and variances via the PERT approach.

METHODOLOGY

This current study adopted a case study design since it is suitable for studies where data is intended to describe a unit in detail, in context and holistically. It is an intensive descriptive and holistic analysis of a single entity (Willis & David, 2009). The study was conducted at Uasin Gishu County which is one of the 47 counties of Kenya. The target population was 114 including a sample frame of Construction managers, County procurement officers, Quantity surveyors and Ministry of works officers (Uasin Gishu County, 2016). The sample frame included Contractor managers, County assembly procurement officers, Engineers, Quantity surveyors, Site supervisors and Ministry of works officials. Census survey method which is a complete enumeration of the universe (target population) was used. Census survey method is used when the whole target population is taken into account and the units having heterogeneity (Cohen, 2007).

The study used a mixed method approach in data collection which is the use of quantitative methods through administering of the questionnaire, as well as a qualitative approach by interviewing respondents and reviewing existing literature (Bryman, 2006; Easterby-Smith, Thorpe, & Jackson, 2008). Data was analyzed using descriptive and inferential statistics where under inferential statistics Cross tabulations was utilized to make sense of and present relationships between variables (Bryman & Cramer, 2005). In addition, multiple regressions was used to determine the effect of a set of independent variable (procurement procedures) on dependent variable (successful completion of projects), coefficient of correlation using the Statistical Package for Social Sciences (SPSS) version 20.0 package.

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon \dots \dots \dots (1)$$

Where Y is successful completion of construction project, dependent variable; ε is the error term, X is Client selection criteria affecting successful

completion of construction project, β is the standardized regression coefficient β_0 is the constant

X_1 =Client selection criteria

FINDINGS, DISCUSSION AND CONCLUSION

Descriptive Statistics of client selection criteria

The researcher sought to establish the level of agreement to various aspects of selection criteria as per objective one. Five questionnaire items were used to examine the prevailing status of selection criteria in the county. According to the findings presented in Table 1 the respondents agreed that risk posed by the contractor terms of finishing the project is always looked (M=4.31 SD=0.794). Besides, a majority of the employees also tended to strongly agree that technical expertise of a client is

a major basis of awarding the contract (M=4.55 SD=0.801).Some respondents feel certification of contractors by relevant bodies is considered (M=4.65 SD=0.545).Some respondents were in agreement that past performance of the contractor is a basis of awarding a contract (M=4.43 SD=.865). Lastly the respondents also agreed that reputation and knowledge of contractor on construction regulations is considered (M=4.29 SD=0.760).The implications of these results is that the county may continuously acquire succesfull completion of construction project increasing through strict observation of selection criteria of contractors as this will increase the contractors obligation level for quality work.

Table 1: Client selection criteria

Response items	Mean	Std. Deviation
Risk posed by the contractor in terms of finishing the project is always looked at	4.31	.794
Technical expertise of a client is a major basis of awarding the contracts	4.55	.801
Certification of contractors by relevant bodies is considered	4.65	.545
Past performance of the contractor is a basis of awarding a contract	4.43	.865
Reputation and knowledge of contractor on construction regulations is considered	4.29	.760

Source Authors computation 2017

Correlation

The purpose of using correlation was to identify procurement processes that provide best predictions for conducting regression analysis. Correlations between selection criteria, where $r=.738^{**}$ positively and significantly related to succesfull completion of construction projects where $P<0.05$. This implied that selection criteria

part of procurement proceses under study have a positive and significant impact on successful completion of projects in uasin gishu county it therefore behooves the management of the county to pay high premiums on selection criteria among others proceses to secure successful completion of construction projects.

Table 2: Test for Linearity

	Selection criteria	Successful completion of projects
Selection criteria	1	
Successful completion of projects	.738**	1

** . Correlation is significant at the 0.05 level (2-tailed).

Source Authors computation (2017)

Effects of Client selection criteria on successful completion of projects

The model summary presented involves client selection criteria as the only independent variable. The coefficient of determination (R square) of 0.545

indicated that the model explained only 54.5% of the variation or change in the dependent variable with the remainder of 45.50 % explained by other factors other than client selection criteria.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.738 ^a	.545	.540	.430	1.638

- a. Predictors: (Constant), client selection criteria
- b. Dependent Variable: successful completion of projects

Second, the ANOVA output was examined to check whether the proposed model was viable. Results shown in Table 4 reveal that the F-statistic was

highly significant (F= 108.964 p<0.05), this shows that the model was valid.

Table 4: ANOVA

Sum of Squares	Df	Mean Square	F	Sig.
20.166	1	20.166	108.964	.000 ^a
16.841	91	.185		
37.007	92			

- a. Predictors: (Constant), client selection criteria
- b. Dependent Variable: successful completion of projects

The model significantly improved the ability to predict successful completion of construction projects. Thus, the model was significant.

outcome. From the results (Table 5) the model was then specified as:-

$$y = \beta_1 X_1 + \epsilon \dots\dots\dots$$

Regression Coefficients of Organization Performance

Results of the regression coefficients presented in Table 5 showed that the estimates of β values and give an individual contribution of a predictor to the model. The β value tells us about the relationship between successful completions of construction projects with client selection criteria as the predictor. The positive β values indicate the positive relationship between the predictors and the outcome. The β value for client selection criteria (.738) was positive. The positive β values indicate the direction of relationship between predictor and

Successful completion of projects = .738 client selection criteria + ϵ

The coefficient of the variable indicates the amount of change one could expect in successful completion of construction projects given a one-unit change in the value of that variable, given that all the variable in the model is standardized basing on the standardized coefficients. Results reveal standardized regression coefficient for client selection criteria ($\beta=0.738$), implies that an increase of 1 standard deviation in client selection criteria is likely to result in a 0.738 standard deviations increase in successful completion of

construction projects . T-test was used to identify whether the predictor was making a significant contribution to the model. When the t-test associated with β value is significant then the

predictor is making a significant contribution to the model. The results show that client selection criteria ($t = 10.439, P < .05$).

Table 5: Regression Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	β			Tolerance	VIF
(Constant)	.810	.337		2.404	.018		
Client selection	.784	.075	.738	10.439	.000	1.000	1.000

a. Dependent Variable: Successful completion of construction projects

Discussion of Results

The main purpose of the study was to assess the effects of procurement process on successful completion of construction projects. From the results, there is no second opinion to the fact that procurement process has an effect on successful completion of construction projects. In fine public organizations in undertaking construction projects can only attain competitive position during this era of globalization, competition, and rising cost of production by strict adherence of procurement process, which can guarantee successful completion of construction projects. This fact is underpinned by the findings of this study.

The specific objective was to examine the effect of client selection criteria on successful completion of construction projects. Moore (1985) cited in (Xiaohong, 2011) Argues that the screening of construction contractors by project owners or their representatives according to a predetermined set of criteria deemed necessary for successful completion projects which translates to successful project performance .Multiple regression analysis showed that a significant relationship exists between dependent variable and independent variables. From the regression analysis table t value is = 10.439 Similarly, P value is equal to 0.000 that is less than 0.05 that is sufficient to show relative importance $r = .738^{**}$. Therefore, it is evident from

the results that selection criteria was found to be a positive and a significant predictor successful completion of construction projects in Uasin Gishu County.

CONCLUSIONS AND RECOMMENDATIONS

Counties and other public organizations may acquire successful completion of construction projects by embracing better selection criteria of contractors before awarding tenders. The Strict implementation of selection criteria would ingrain integrity in the management and operations of procurement process. Client selection factors for example cost related factors, Projects, time related factors, quality related factors, and Project characteristics should be taken into consideration in order to engender successful completion of road construction projects. The counties should have a well enunciated and effectively communicated goals, build a strong, imaginative and effective design team which seeks and positively responds to build ability advice, ensure that project risks are mitigated to ensure successful completion of road construction projects .Thus the current study provides absolute support to the suggestion that client selection criteria as entrenched in the public procurement and disposal act of 2015 be recognized as a significant precursor for the successful completion of construction projects.

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