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The Strategic JOURNAL of Business & Change MANAGEMENT
ISSN: 2312-9492 www.strategicjournals.com
Vol. 8, Iss. 4, pp 14 – 26. October 1, 2021. www.strategicjournals.com, ©Strategic Journals

EFFECT OF STAKEHOLDER FACTORS ON COMPLETION OF ROAD CONSTRUCTION PROJECTS IN KENYA: A CASE STUDY OF KISII COUNTY

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Accepted: September 29, 2021

ABSTRACT

This study explored the effect of stakeholder factors on completion of road construction projects in Kenya with specific objectives being client related factors, contractor related factors, consultant related factors, and external factors. Contingency theory, Expectancy theory, theory of planned behaviour and stakeholder theory were the anchors of the study. The instruments of data collection were structured questionnaires. The target population consisted of 80 project managers, road engineers, project managers, road supervisors, road inspectors, road surveyors and contractors in Kisii County. The unit of analysis were on-going and completed road projects implemented by Kisii County government. Simple random sampling was used to select 80 of whom 70 respondents returned the questionnaires representing 87% respondents. This study produced both quantitative and qualitative data. Once the questionnaires were received, they were coded and edited for completeness and consistency. Analysis of quantitative data was done by using descriptive statistics and inferential analysis using statistical package for social science (SPSS) version 24. The findings showed that client related factors had a significant positive relationship with project completion. 30.9% of the variation in project completion can be attributed to the factors associated with the client. Contractor related factors had a statistically significant positive relationship with project completion. From regression analysis, 33.4% of the variation in project completion can be attributed to contractor related factors. Consultant related factors had a statistically significant positive relationship with project completion. 14.8% of the variation in project completion can be attributed to consultant related factors. External factors had a statistically significant positive relationship with project completion accounting for 28.9% for its variation. Clients should ensure there are enough funds to finance the project without delaying any payment to the contractor. Contractors selected for any construction project should have enough financial capacity and adequate equipment of the right quality and should have some control over sub-contractors. This would ensure the project is completed within budget, time and meet client specifications. Consultants should be present on site to supervise project activities and also communicate effectively any information including variation orders, design documents, and sample materials to the client and contractor promptly.

Keywords: Client, Contractor, Consultant, Road Construction

CITATION: Ouma, D. O., & Omwenga, J. (2021). Effect of stakeholder factors on completion of road construction projects in Kenya: A case study of Kisii County. *The Strategic Journal of Business & Change Management,* 8 (4), 14 – 26.

INTRODUCTION

The most common criteria for measuring project success are based on the triple constraint model; time cost, the scope with quality being the central theme. Any change in one of the factors affects the other two. For instance, an increase in scope without a corresponding increase in time and cost leads to poor quality of work or decrease in time without a decrease in scope leads to poor quality if cost remains constant. Inability to complete projects in time is among the challenges faced in the course of executing construction projects (Kikwasi, 2012). Choge and Muturi (2014) explained that achieving project completion on time, within budget, at specified quality standards, and most importantly without unprecedented cost escalations is a major criterion of success of a project. This research focused on completion of projects in terms of quality (satisfying client specifications), time and cost. There are many factors that affect project completion. Sambasivan and Soon (2007), studied factors that influenced completion time in Malaysian construction projects and categorized them into four categories as client related, contractor related, contract relationship related and external factors. They also identified major effects of delays in completion of projects as time overrun, cost overrun, dispute, arbitration, litigation, and total abandonment.

Statement of the Problem

In Kenya, construction projects are facing challenges of non-Completion. Many construction projects fail due to factors like time in efficiency, lack of adequate funds and lack of advance working equipment. Nwachukwu et al (2010), termed a road project to be successfully completed if it passed four success test criteria i.e., the time criterion – completed on time; the cost or money criterion – completed within budget; the effectiveness criterion – completed in accordance with the original set performance and quality standards; and clients satisfaction criterion – accepted by the intended users or clients whether the client is internal or from outside the organization.

However, the road construction industry is full of projects that are completed with significant cost, scope and time deviation (Amhed, Zahara & Juma, 2010). The need for successful completion of road construction projects arises from the desire for the project to start serving its intended use and thus recouping the investment ploughed in. It is postponement of the time from original estimated completion time which might be caused by the contractor, owner or consultant as well as external factors (Koushki and Kartam, 2004). The major impact of delays is increase in project cost, which causes the drain in project contingency fund. Stakeholders' involvement is paramount in development projects. Even though, minor decisions and emergency situations are generally not appropriate for stakeholder participation, a complex situation with far-reaching impacts warrant stakeholder involvement and when done proactively, rather than in response to a problem, helps to avoid problems in the future (Maina, 2013). The focus of public participation is usually to share information with, and gather input.

In Kenya, very limited research if any has been done stakeholder factors on completion of road construction projects with none having been conducted in Kisii County. This study aimed to bridge this gap by looking at stakeholder factors that affect successful completion of rural road construction projects in Kenya, using Kisii County as the case study. Clearly, in construction industry there are factors that have affected successful completion of road construction projects. Many roads construction projects have been affected by various challenges, greatly affecting their completion. It is a major concern for every stakeholder in a road project to understand these factors (Mochal, 2009). This research study therefore looked at the factors that affect or influence successful completion of rural road construction projects that stakeholders need to address. It was hoped that in addressing these

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factors, the success in completion of road construction projects would greatly be enhanced.

Objectives of the Study

The general objective of this study was to determine the effect of stakeholder factors on completion of road construction projects in Kisii County. The study was guided by the following specific objectives;

- To determine the effect of client related factors on completion of road construction projects in Kisii County.
- To examine the effect of contractor related factors on completion of road construction projects in Kisii County.
- To establish the effect of consultant related factors on completion of road construction projects in Kisii County.
- To explore the effect of external factors on completion of road construction projects in Kisii County.

LITERATURE REVIEW

Empirical Review

For a project to be said to be successful, it must fulfil cost, quality and time constraints (Kaliba et al., 2009). Sambasivan and Soon (2007), studied factors responsible for delay in completion time of construction projects in Malaysia and categorized them into eight factors i.e., client related, consultant related factors, contractor related factors, material related factors such as quality of material and shortage in material, Labour and equipment related factors, contract related factors, contract relationship related factors and external factors. In road construction projects in Zambia, Kaliba et al. (2009), found that the major causes of delays, cost escalation and quality shortfalls in road construction projects in Zambia were delayed payments, financial deficiencies on the part of the client or the contractor, contract modifications, economic problems, material procurement problems, changes in design drawings, staffing problems, unavailability of equipment, poor supervision, construction mistakes, poor coordination on site, changes in specifications, labour disputes and strikes. In Egyptian construction projects, Abd El-Razek et al. (2008), found that completion was hampered by slow delivery of payments, coordination problems, and poor communication. Koushki and Kartam (2004), identified the main factors affecting cost and time overrun as inadequate/inefficient equipment, tools, and plants; unreliable sources of materials on the local market and site accidents for construction projects in Kuwait. In Libya, the main causes of delays were improper planning, lack of effective communication, and the shortage of supply of materials i.e. steel, concrete, etc. design errors, slow decision making and financial issues (Tumi, Omran, & Pakir, 2009). Motaleb and Kishk (2010), found that change orders, financial and other client-related factors are the most significant factors that affected completion of projects in the United Arab Emirates. They identified 42 factors and grouped then into five categories which included contractors, consultants, project managers, clients, financial and other unforeseen factors. Time and cost overrun were the two most important effects of untimely completion of projects, ranked first and second respectively by both consultants and project managers. Completion time of groundwater projects in Ghana was negatively affected by poor contractor management, monthly payment difficulties from agencies, material procurement, poor technical performances, escalation of material prices and unexpected events Frimpong, Oluwoye, and Crawford (2003). They suggested that there was the need to improve contractor's managerial skills and the establishment of effective material procurement systems within projects to minimize delays in groundwater projects. In Tanzania, a study by Kikwasi (2012), found the main factors that influenced the completion of construction projects were design changes, delays in payment to contractors, information delays, funding problems, poor project management, compensation issues and disagreement on the valuation of work done and it therefore recommended that adequate

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construction budget, timely issuing of information, finalization of design and project management skills should be the main focus of the parties involved in project management.

Construction management, as a field of research, has tended to focus on planning and managing the complex array of activities required in delivering a road construction project (Morris 1994). Being able to manage construction stakeholders' expectations and concerns is a crucial skill for managers of construction projects (Vinten 2000), as failure to address these has resulted in countless project failures (Bourne and Walker 2005), primarily because construction stakeholders tend to have the resources and capability to stop construction projects (Lim et al.2005). Successful completion of construction projects is therefore dependant on meeting the expectation of stakeholders (Cleland 1995). Stakeholders, include clients, project managers, designers, subcontractors, suppliers, funding bodies, users, owners, employees and local communities (Newcombe 2003, pp. 842, 847). As a consequence, a robust construction management literature has developed on how to identify and manage stakeholder interests and relationships.

According to Abdalla and Hussein (2001), many projects experience extensive delays and thereby exceed initial time and cost estimates. In addition to impacting economic feasibility of capital projects, extensive delays provide fertile ground for costly disputes and claims. Abdalla and Hussein (2001) present the findings of a survey aimed at identifying the most important causes of delays on road construction project with traditional type contract from the view point projects of construction contractors and consultants. The results of the survey indicate that contractors and consultants agreed that owner interference, inadequate contractor experience, financing and payment, labour productivity, slow decision making, improper planning and subcontractors are among important factors. It is hoped that these findings will guide efforts to improve the performance of the construction industry and will be useful to international engineering and construction firms seeking a share in the Jordan and the regional markets. Based on Abdulla and Hussein (2001) survey findings, there is a need to conduct a research project on factors contributing towards the delaying in completion of road construction projects in different regions in order to establish the relationship between the stakeholder involvement and timely completion of road construction projects in Kenya.

METHODOLOGY

This study used descriptive survey design. The study also adopted a qualitative research design. The target population was 1.6 as per the census 2009 in Kisii County. The sampling frame consisted of 80 employees working in the road construction projects in Kisii County. The sampling frame consisted of all the respondents in the road projects. This study used questionnaires as an instrument of research. The questionnaire contained both closed and open-ended questions. The data collected was both quantitative and qualitative and therefore descriptive and inferential statistics was used to analyze the data. Quantitative data was analyzed using descriptive statistics calculated as proportions, frequencies, and percentages. Correlation analysis was used to obtain the relationships between the variables under study. The Pearson correlation coefficient was used to show the degree of relationship among the variables .Regression analysis was used to analyze the data to show the cause-effect relationship of stakeholder factors. The regression model is of the form given below;

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where, Y = Completion of road construction projects, α = Regression constant, $\beta_1, \beta_2, \beta_3 and\ \beta_4$ = Regression coefficient, ε = Error term while X1, X2, X3 and X4 are client related factors, contractor related factors, consultant related factors and external related factors respectively.

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RESULTS

Client Related Factors Influence on Project Completion

This section sought to find out the influence of client related factors on project completion, the respondents were given different factors and asked to rate using a 5- point Likert scale. Based on this scale a mean score of 1 denotes strongly disagree; 2 denotes disagree; 3 denotes neutral; 4 denotes agree and 5 denotes strongly agree.

Table 1: Client related factors on project completion

Effect	Mean	SD
The client promptly makes payment to the contractor for the work done	4.1	0.67
The client usually inspects work completed before payment	4.3	4.62
The client provides material for the project	4.2	4.61
The client influences the duration of the contract	4.3	0.62
The client is involved in the choice of material to be used in the project	3.6	0.49
The client gets involved in the selection of work force involved in the project	4.4	0.57
The client promptly approves design documents	3.8	0.82
The client usually changes the scope of work during project implementation	3.5	0.43

From the findings presented in Table 1, the respondents agreed that client promptly make payment to the contractor for the work done with a mean was 4.0. The respondents were also asked whether the client usually inspects work completed before payment. The mean of the responses was also 4.3 thus confirming. Asked whether the client provides material for the project, majority agreed with a mean of 4.2. The respondents were also asked whether the client influences the duration of the contract; majority agreed with a mean of 4.3. The respondents were asked as to whether the client is involved in the choice of material to be used in the project, majority agreed with mean of 3.6. Furthermore, the respondents were asked as to whether the client gets involved in the selection of work force involved in the project, majority agreed with mean of 4.4. In response to the question as to if the client promptly approves design documents, majority agreed with mean of 3.8. The respondents agreed that the client usually changes the scope of work during project implementation, with a mean was 3.5.

Contractor related factors influence on project completion

This section sought to find out the contractor related factors influence on project completion, the respondents were given different factors and asked to rate using a 5- point Likert scale. Based on this scale a mean score of 1 denotes strongly disagree; 2 denotes disagree; 3 denotes neutral; 4 denotes agree and 5 denotes strongly agree.

Table 2: Contractor related factors on project completion

Effect	Mean	SD
The contractor has enough funds to finance the project without waiting for the client	4.0	0.67
The contractor has the right skilled work force suitable for the project	4.2	0.51
The contractor has adequate equipment for the project	3.6	0.49
In The contractor has quality equipment for the contract work	4.4	0.57
The contractor uses current technology and methods in the construction work	3.4	0.72
The contractor has the capacity to plan and schedule the work as per the contract	3.8	0.82
The contractor has access to the material of right quality and quantity	4.4	0.53
The contractor has the capacity to supervise project activities	4.1	0.69

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From the findings presented in Table 2, the respondents agreed that contractor has enough funds to finance the project without waiting for the client with a mean was 4.0. The respondents were also asked whether the contractor has the right skilled work force suitable for the project and majority agreed at 70.0 %. The mean of the responses was also 4.2 thus confirming. Asked whether the contractor has adequate equipment for the project, majority agreed at 62.9% with a mean of 3.6. The respondents were also asked whether the contractor has quality equipment for the contract work, majority agreed with a mean of 4.4. The respondents were asked as to whether the contractor uses current technology and methods in the construction work, majority agreed with mean of 3.8. Furthermore, the respondents were asked as to whether the contractor has the capacity to plan and schedule the work as per the contract, majority agreed with mean of 3.8. In response to the question if the contractor has access to the material of right quality and quantity, 78.6% agreed with mean of 4.4. The respondents agreed (47.3%) that the contractor has the capacity to supervise project activities, with a mean was 4.1.

Consultant related factors influence on project completion

This section sought to find out the influence of consultant related factors on project completion, the respondents were given different factors and asked to rate using a 5- point Likert scale. Based on this scale a mean score of 1 denotes strongly disagree; 2 denotes disagree; 3 denotes neutral; 4 denotes agree and 5 denotes strongly agree.

Table 3: Consultant related factors on project completion

Effect	Mean	SD
The consultant has the experience required to undertake the project	3.3	1.06
The consultant has qualified personnel to undertake the project work	4.0	0.67
The consultant is usually at the project site to oversee and supervise the project work	4.3	0.62
The consultant understands the design specification of the project	4.2	0.51
The consultant communicates the right/correct information on timely basis to the client and contractor	3.8	0.82
The consultant has the capability to detect mistakes and discrepancies in the design documents	3.2	0.89
The consultant timely approves design drawings and sample materials	4.8	0.59
The consultant has shown good supervisory ability	3.9	0.74

From the findings presented in Table 3, the respondents agreed that consultant has the experience required to undertake the project with a mean was 3.3. The respondents were also asked whether the consultant has qualified personnel to undertake the project work and majority agreed at 68.6 %. The mean of the responses was also 4.0 thus confirming. Asked whether the consultant is usually at the project site to oversee and supervise the project work, majority agreed at 58.6% with a mean of 4.3. The respondents were also asked whether the consultant understands the design specification of the project, majority agreed with a mean of 4.2. The respondents were asked as to whether the consultant communicates the right/correct information on timely basis to the client and contractor, majority agreed with mean of 3.8. Furthermore, the respondents were asked as to whether the consultant has the capability to detect mistakes and discrepancies in the design documents, majority agreed with mean of 3.2. In response to the question if the consultant timely approves design drawings and sample materials, 77.1% agreed with mean of 4.8. The respondents agreed (66.8%) that the consultant has shown good supervisory ability, with a mean was 3.9.

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External related factors influence on project completion

This section sought to find out the influence of external related factors on project completion, the respondents were given different factors and asked to rate using a 5- point Likert scale. Based on this scale a mean score of 1 denotes strongly disagree; 2 denotes disagree; 3 denotes neutral; 4 denotes agree and 5 denotes strongly agree.

Table 4: External related factors on project completion

Effect	Mean	SD
There is usually political interference in the project	4.7	0.63
The local leaders have developed interest in the project	3.7	0.83
The employees involved in the project are satisfied in terms of working conditions and remuneration	4.3	0.65
The contractor has easy access to materials outside the country	3.9	0.61
The taxation measures by the government is favourable for the project work	4.8	0.78
There are no bureaucratic licensing procedures for the contractor to undertake the project work	4.1	0.72
There has not been industrial strike and unrest from employees of the project	4.0	0.69

From the findings presented in Table 4, the respondents agreed that there is usually political interference in the project with a mean was 4.7. The respondents were also asked whether the local leaders have developed interest in the project and majority agreed at 58.6%. The mean of the responses was also 3.7 thus confirming. Asked whether the employees involved in the project are satisfied in terms of working conditions and remuneration, majority agreed at 51.7% with a mean of 4.3. The respondents were also asked whether the contractor has easy access to materials outside the country, majority agreed with a mean of 3.9. The respondents were asked as to whether the taxation measures by the government were favourable for the project work, majority agreed with mean of 4.8. Furthermore, the respondents were asked as to whether the there are no bureaucratic licensing procedures for the contractor to undertake the project work, majority agreed with mean of 4.1. In response to the question if there has not been industrial strike and unrest from employees of the project, 78.3% agreed with mean of 4.0.

Stakeholder factors on completion of road construction projects

This section sought to find out stakeholder factors on road construction projects, the respondents were given different factors and asked to rate using a 5- point Likert scale. Based on this scale a mean score of 1 denotes strongly agree; 2 denotes agree; 3 denotes neutral; 4 denotes disagree and 5 denotes strongly disagree.

Table 5: Project completion of road construction projects

Effect	**Mean**	**SD**
The client is satisfied with the quality of work done by the contractor	3.9	0.64
The construction is completed as per the client's expected duration within scheduled time	4.5	0.50
The employees of the contractor, consultant, client are satisfied with the quality of work	4.3	0.71
On completion the project cost is within budget or is within the planned budget	4.4	0.49
There have been no delays in the completion of the project	4.3	0.63
The payments for the contract have been prompt	4.0	0.69
The time allocation for the completion of the project has always been adequate	4.5	0.50
Dispute resolution meetings were often held during project execution	4.7	0.59

From the findings presented in Table 5, the respondents agreed that client is satisfied with the quality of work done by the contractor with a mean was 3.9. The respondents were also asked whether construction is completed as per the client's expected duration or within scheduled time and majority agreed at 54.3%. The mean of the responses was also 4.5 thus confirming. Asked whether the employees of the contractor, consultant and client are satisfied with the quality of work, majority agreed at 51.4% with a mean of 4.3. The respondents were also asked whether during completion the project cost is within budget or is within the planned budget, majority agreed with a mean of 4.4. The respondents were asked as to whether there are no delays in the completion of the project, majority agreed with mean of 4.3. Furthermore, the respondents were asked as to whether the payments for contract have been paid promptly, and dispute resolution meetings are often held during project execution majority agreed with mean of 4.0 and 4.5 respectively. In response to the question if the time allocation for the completion of the project has always been adequate, 70.4% agreed with mean of 4.7.

Correlation Analysis

Correlation analysis is carried out in research to ascertain the level to which two factors converge or diverge together depending on the case so as to establish the significance of the relationship. A positive value of the correlation coefficient shows that the two variables move together in the same trend, and when there is a negative value, it shows that the variables move in opposite direction or trend. Essentially, correlation analysis depicts to a given degree, the aspect of how one factor influences another although correlations do not imply a cause-effect relationship. The study thus carried out correlation analysis of the independent factors and the dependent factor and the findings were summarized and presented the correlation matrix in Table 6. client related factors, contractor related factors, consultant related factors and external related factors.

Table 6: Correlation matrix

		Client related factors	**Contractor related factors**	**Consultant related factors**	**External related factors**
Client related factors	Pearson Correlation	0.068			
	Sig. (2-tailed)	0.423			
Contractor related factors	Pearson Correlation	0.120	0.082		
	Sig. (2-tailed)	0.322	0.320		
Consultant related factors	Pearson Correlation	0.118**	0.363*	0.025	
	Sig. (2-tailed)	0.330	0.002	0.728	
External related factors	Pearson Correlation	0.302*	0.668*	0.664*	0.513**
	Sig. (2-tailed)	0.009	0.001	0.028	0.000
** Correlation is significant at the 0.01 level (2-tailed).					
* Correlation is significant at the 0.05 level (2-tailed).					

The findings in Table 6, client related factors have a positive and significant relationship with project completion (r = 0.302, p-value = 0.009) at 0.05 level of significance. This implies that there is a probability of 0.302 that project completion will increase with increase in client related factors. The findings also showed that contractor related factors have a positive and significant relationship with project completion (r = 0.668, p-value = 0.001) meaning that there is a 0. 668 probabilities that

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project completion will increase with increase in contractor related factors. The findings also revealed that there is a positive and significant relationship between consultant related factors and project completion (r = 0.664, p-value = 0.028) at 0.05 level of significance and this implies that there would be a probability of 0.664 that the project completion will increase with increase in consultant related factors. Finally, the findings showed that there is a positive and significant relationship between the external related factors and project completion (r = 0.513, p-value = 0.000) at 0.01 level of significance. This implies that there is a probability of 0.513 that project completion will increase with the increase in external related factors.

Regression Analysis

According to Table 7, the R value indicates a relatively strong correlation between predictor variables and the response variable (Project completion). This is because the R value is positive (0.614). This means that the variation in the growth was attributed by 61.4% change in the predictor variables. According to the value of the R-Square, 57.1% of the project completion could be explained by independent variables of client related factors, contractor related factors, consultant related factors and external related factors. Therefore, independent variables would have a 57.1% influence on project completion while the remaining 42.9% could be attributed to other factors other than predictor variables

Table 7: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.614a	0.571	0.520	0.495
a Predictors: (Constant), Client related factors, Contractor related factors, Consultant related factors and External related factors				

The analysis of variance is important in assessing the significance of the variation contributed by the explanatory variables on the response variable compared to the variation contributed by the residuals. The study thus carried out the analysis of variance and the findings were summarized and presented in Table 8.

Table 8: Analysis of variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.203	5	3.618	33.742	0.000b
	Residual	31.370	65	0.483		
	Total	67.573	70			
a Dependent Variable: Project Completion						
b Predictors: (Constant), Client related factors, Contractor related factors, Consultant related factors and External related factors						

The findings in Table 8 showed that the total sum of squares for the regression model was 36.203 while that of the residuals was 31.370. This means that the mean sum of squares for the regression model (total sum of squares for the regression model divided by the degree of freedom (5) was 3.618 while the total residual sum of squares was 0.483 which clearly indicated that the regression model accounted for more than 33 times the variation of the project sustainability compared to the residuals, F-value = 33.742, p-value = 0.000.

A regression model is generally used to assess and depict a cause-effect relationship that has been, to a certain degree, been depicted by the correlation analysis. The regression model gives the magnitude of the cause-effect relationship as well as the direction of the relationship. This is achieved through the estimation of the coefficients of

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estimations attributed to the explanatory variables. This means that a negative coefficient of estimation would often imply a decrease by the magnitude of the estimated coefficient in the response variable. In order to increase the accuracy of the estimated model, the standardized coefficients of estimation are utilized. Table 9 gives a summary of the predicted model related to the given independent variables.

Table 9: Estimated Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-2.992	0.380		-2.987	0.004
Client related factors	0.129	0.076	0.309	6.763	0.031
Contractor related factors	0.204	0.072	0.334	5.474	0.001
Consultant related factors	0.305	0.112	0.148	2.524	0.000
External related factors	0.245	0.218	0.289	4.564	0.013

a Dependent Variable: Project completion

From Table 9, all the factors are significant.

The regression model of the study is of the form

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where, y = project completion, α = regression coefficient, β = regression coefficient, x1 = Client related factors, x2 = Contractor related factors, x3 = Consultant related factors, x4 = External related factors and ε = error term.

Ignoring the error term, the equation of the model would be:

Project completion =-2.992+ 0.309 client related factors + 0.334 contractor related factors + 0.148 consultant related factors + 0.289 external related factors.

This means that all the factors considered in the study had a positive relationship with project completion. When all the factors (client related factors, contractor related factors, consultant related factors and external related factors.) are zero, influence on project completion will be -2.992. A unit increase in client related factors leads to a 0.309 increase in project completion while a unit increase in contractor related factors led to a 0.334 project completion. Similarly, a unit increase in consultant related factors led to a 0.148 increase in project completion while a unit increase in external related factors led to a 0.289 increase in project completion. It can be deduced that the most important factors influencing project completion are those related to client related factors followed by contractor related factors and consultant related factors respectively. External related factors had the least influence on project completion.

CONCLUSION AND RECOMMENDATIONS

The main factors that were associated with client included financial capacity, owner interference, and the imposition of contract duration, decision-making ability and change in project scope. Correlation analysis indicated that these factors had a weak but significant positive relationship with project completion ($r = 0.302$, $p < 0.05$). Regression analysis gave a coefficient of determination ($R2 = 0.309$) which imply that client related factors contribute to 30.9% of the variation in completion of road projects. The contractor related factors studied were financial capacity, equipment availability, and quality, skilled workforce, site management ability, material availability and control over sub-contractors. These factors had a strong and significant positive relationship with project completion ($r = 0.668$, $p < 0.01$). Regression of contractor related factors gave $R2 = 0.334$ which showed that 33.4% of the variation in project completion is associated with

The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

contractor related factors. The study sought to determine the effect of consultant related factors on project completion. The factors considered included experience, skilled personnel, co-ordination, site supervision and decision-making ability. These factors had a significantly strong positive relationship with project completion ($r = 0.664$, $p < 0.028$). Regression of consultant related factors gave $R2 = 0.148$ which showed that 14.8% of the variation in project completion is associated with consultant related factors. External factors studied were political interference, industrial action, regulation, taxation, and material unavailability in the market. These factors had a weak but significant positive relationship ($r = 0.513$, $p < 0.01$) with project completion. Regression of external factors gave $R2 = 0.289$ which showed that 28.9 % of the variation in project completion. The overall regression model gave R2 of 0.571. This showed that that the variations around the means in client factors, consultant factors, contractor factors and the external factors is about 57.1%. The most important factors influencing project completion were the contractor, consultant, external and client related factors respectively.

The following conclusion can be drawn from the study. Client related factors had a significant positive relationship with project completion. 30.9% of the variation in project completion can be attributed to the factors associated with the client. Contractor related factors had a statistically significant positive relationship with project completion. From regression analysis, 33.4% of the variation in project completion can be attributed to contractor related factors. Consultant related factors had a statistically significant positive relationship with project completion. 14.8% of the variation in project completion can be attributed to consultant related factors. External factors had a statistically significant positive relationship with project completion accounting for 28.9% for its variation.

The following recommendations can be made from the findings of the study. Clients should ensure there are enough funds to finance the project without delaying any payment to the contractor. Contractors selected for any construction project should have enough financial capacity and adequate equipment of the right quality and should have some control over sub-contractors. This would ensure the project is completed within budget, time and meet client specifications. Consultants should be present on site to supervise project activities an also communicate effectively any information including variation orders, design documents, and sample materials to the client and contractor promptly.

Recommendations for further Research

The following are the suggestions for further research.There is a need to have more studies in relation to project completion not only on road construction projects but also all construction projects in Kisii County. Furthermore, there is need to carry out further research in other counties to enrich the literature and findings in order to refine the recommendations and suggestions to improve the aspect of project completion.

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