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Influence of Competence of Contractor on Performance of Government Construction Projects in Kenya

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Abstract:
The government of Kenya is putting great emphasis on infrastructural development as one of the key pillars to anchor ambitious plan of attaining rapid economic growth. Construction companies play a crucial role in the implementation of government construction projects. It is therefore essential that these contractors have the right competencies to enable them successfully undertake government construction projects. The Kenyan government continues to really on foreign companies to execute major construction projects in the country. The objective of the study was to assess the influence of contractor's competence on performance of government construction projects in Kenya. The study adopted a descriptive research design and used simple random sampling to select a sample from the registered Architects/projects managers practicing in Nairobi Kenya and involved with government projects. The unit of analysis therefore was government construction projects while unit of observation was 728 Registered Architects/projects managers within Nairobi. A sample size of 251 was used. The study generated both qualitative and quantitative data. Data was collected using questionnaires and analysed using SPSS. The findings of the study showed a significant and positive relationship between contractor's competence and performance of government construction projects in Kenya. The study concluded that contractor's competence enhances the performance of government construction projects in Kenya.

Keywords: *Project, contractor, competence, performance, Kenya*

1. Introduction

According to Lee et al., (2014) Contractor's performance can be defined by the level and quality of projects delivered to clients. Predicting the performance of construction firms is indispensable in order to ensure quality and guarantee international standards. Factors that enhances contractor's performance in Kenya include; availability of skilled manpower, sufficient working capital, a flexible organizational structure and client support (Mwangi, 2016).

1.1. Statement of the Problem

According to Butcher and Sheehan (2010) a number of key behaviours determine excellent contractor performance. These include: being open about their business strengths and weaknesses against their peer group; demonstrating desire to learn and share learning as part of a community; consistency of message from employees at all levels; keeping business promises; aligning with the customer's culture; transferring individual knowledge to the collective; and demonstrating a keen understanding of the customer's business. Government construction projects in Kenya are implemented through independent contractors some of which are international. The construction projects are key stimulants to the economic growth aspired by the Kenyan Government. Currently, some projects are abandoned because contractors could not raise the mobilization fees necessary for big projects. Local construction firms also struggle to compete with foreign established firms mostly because of their underdeveloped capacity.in most cases local Kenyan construction firms are run by businessmen who are not necessarily equipped with construction knowledge. The firm's sole purpose therefore is to make profit and not any other contribution to the construction industry.To ensure success of these government projects. Local firms should enhance their competencies to be able to deliver successful projects and be competitive on the global arena.

1.2. Objective of Study

The purpose of this study was to assess the influence of contractor's competence on performance of government construction projects in Kenya.

1.2. Research Hypothesis

- $H_{0:}$ Contractor's competence has no significant influence on performance of government construction projects in Kenya.

2. Theoretical Review

2.1. Theory of Critical Success Factors

Exposited by Klaus and Charlotte, (2001) key success factors are regarded as those skills and resources which have the highest leverage on value and costs. Competitive advantage, and indirectly business performance, can therefore be related to how the business scores with regard to these skills and resources, which can be regarded as the actual determinants of differences in performance. Key success factors can be distinguished on two dimensions which have implications for the attainment of competitive advantage. These are their changeability and whether they are con-junctive or compensatory. Conjunctive key success factors refer to skills and resources which are necessary conditions for superior performance in a market. The performance of a business will always be related to the degree to which it has these skills and resources, and a lack of skills and resources here cannot be compensated for by superior skills and resources in other areas. Compensatory key success factors refer to a set of skills and resources, where businesses can choose to emphasize one or several of these. Lower scores with regard to some of these factors can be compensated for by higher scores on other factors. Critical success factors in projects failure are; budget, time, specification and client satisfaction. (Chan et al., 2004).

2.2. Empirical Review

According to Alzahrani and Emsley, (2012) there are critical success factors related to contractors' attributes that affects the success of a construction project. These attributes are critical during selection of contractors for works. Their study assessed the attributes against project success factors; time, cost and quality and the corresponding importance criteria were found. The criteria that were highlighted to be commonly important for all three success factors were financial status, financial stability, credit rating, experience, ability, management personnel and management knowledge.

According toDoloi, (2009) a contractor's experience in similar projects is one of the most important factors for ensuring a contractor's success in projects. Qualification and experience level of project managers and other management staff and their track records of working capital were reported to be significant in assessing the capabilities of the candidate contractors.

Aqeel et al., (2015) further used structural equation modelling technique to study 29 contractors' qualification criteria and their links to contractors' performance on a project. Based on the survey data collected across medium size construction projects in Australia, the results of the model showed that technical planning and controlling expertise of contractor is key in achieving success on projects.

3. Methodology

The study adopted a descriptive research design and used simple random sampling to select a sample from the registered Architects/projects managers practicing in Nairobi Kenya and involved with government projects. The unit of analysis therefore was government construction projects while unit of observation was 728 Registered Architects/projects managers within Nairobi. A sample size of 251 was used. The study generated both qualitative and quantitative data. Data was collected using questionnaires and analysed using SPSS. Analysed data was presented using tables and charts.

3.1. Sampling Techniques and Sample Size

The study was limited to an industry expert survey group consisting of Architects/Construction projects managers. There are 728 registered Architects in NairobiCounty where the study was focused on for the investigation. A sample size of 251 was utilized for the study by applyingn = (z2pq)/d2 and an adjusting formula, nf = n/(1+n/N) by Mugenda and Mugenda, (2003).The study adopted a simple random sampling technique. According to, Starnes (2008) a simple random sample is a subset of individuals (a sample) chosen from a larger set (a population). Each individual is chosen randomly and entirely by chance, such that each individual has the same probability of being chosen at any stage during the sampling process, and each subset of k individuals has the same probability of being chosen for the sample as any other subset of k individuals. A simple random sample is an unbiased surveying technique. This technique is free of classification error, and requires minimum advance knowledge of the population other than the frame. Its simplicity also makes it relatively easy to interpret data collected in this manner.

Sample calculation formula:

$n = (z^2pq)/d^2$

Where:

n = the desired sample size when the target population is greater than 10,000

z = standardized normal deviations at a chosen confidence level, for this study, confidence level is 95%, and z =1.96.

p = the proportion in the target population that assumes the characteristics being sought.

q = The balance from p to add up to 100%. That is 1- p, which in this case yield 1- 50% (0.5)

d = Appropriate significance level, for this study at 95%, the significance level is 0.05.

Using this procedure, the sample size is found to be n= $(1.96^2 \times 0.5 \times 0.5)/0.05^2$ = 384. Since the population is less than 10,000, an adjusting formula, nf = n/(1+n/N) is used where: nf = the desired sample size after adjustment.
n = the desired sample size
N = an estimate of the population size
The adjusted sample size is therefore nf = 384/ (1+384/728) = 250.9, taken as 251

3.2. Measurement of the Variables

The study conducted a statistical analysis of the variables to establish the influence of contractor's competence on performance of government construction projects in Kenya

3.3. Sample Description

The study adopted a simple random sampling technique for the unit of observation since the population drawn from the construction industry was homogenous.

4. Findings

The study results show that contractor's competence statistically significantly influences the performance of government construction projects in Kenya. This is shown by the regression analysis value F (1, 209) = 47.766, p< .01, R^2= .486. Correlation analysis revealed that there is a statistically significant positive correlation between contractor's competence X_1 and the performance of government construction projects in Kenya (r =0.431, p < 0.01).

The descriptive analysis revealed that majority of contractors undertaking Kenyan government construction projects have moderate abilities to identify and solve problems at 39%. These contractors have moderate technical credibility at 34% and to a less extent is accountable at 49%.

The following table lists study recommendations on how contractors' competencies can be improved in Kenya.

Response	n	%
Regular training of contactors and their staff	49	36.3
Ensure contractors have engaged sufficiently qualified staff before contracts award	19	14.1
Vetting of all contractors and their workers	18	13.3
Enforce strict supervision by project team	7	5.2
Strict enforcement of regulations by bodies such as national construction authority	9	6.7
Enforce requirement to register with regulatory authorities such as National Construction Authority	9	6.7
Regulate work threshold that can be performed by foreign firms.	4	3.0
Encourage collaboration with foreign firms on complex projects	7	5.2
Investing in research by the government	2	1.5
Curbing corruption	4	3.0
Undertaking of Proper budgeting by contractors and project consultants	5	3.7
Availing Affordable loans to local contractors	1	1.4

Table 1

4.1. Results of Correlation Analysis

The Pearson correlation coefficient was used to analyse the relationship between contractor's competence and performance of government construction projects in Kenya. The results indicate that contractor's competence has a positive significant relationship with performance of government construction projects in Kenya at a ά =0.01. The relationship was represented by a correlation coefficient of 0.431. The number of respondents considered was 211.This concurs with the findings of Jafari, (2013) who found that contractors play a significant role in construction projects and selection of the most appropriate contractor for the project is a critical decision for clients.

4.2. Results of Regression Analysis

The coefficient of determination R-Square is 0.486 at 0.05 significance level. The coefficient of determination indicates that 48.6% of the changes in the performance of government construction projects can be explained by changes in the predictor variable (Contractors' Competence), while 51.4% of the changes in the model can be explained by other factors. The analysis of variance (ANOVA) results also confirms the appropriateness of the model fit at p-value of 0.000 which is less than 0.05 the significance level. The degree of freedom is 209.This implies that there is a significant positive relationship between Contractors' Competence and performance of government construction projects in Kenya.
The fitted model is $Y = 2.646 + 0.451X_1 + Ɛ$.This implies than there is a linear relationship between Contractors' Competence and performance of government construction projects in Kenya. A unit change in Contractors' Competencewill increase the performance of government construction projects in Kenya by the rate of. 0.451. When X_4 is =0 then Y= 2.646.

4.3. Hypothesis Testing

The hypothesis of the study stated that Contractor's competence has no significant influence on performance of government construction projects in Kenya. The findings of the study showed a significant and positive relationship between contractor's competence and performance of government construction projects in Kenya.

5. Discussions

The Cronbach's alpha was 0.723, which indicates a high level of internal consistency of the study instrument and data. The statistical analysis and findings showed a linear relationship between contractor's competence and performance of government construction projects in Kenya.

The objective of the study was to examine the influence of contractor's competence on the performance of government construction projects in Kenya and to test the hypothesis that Contractor's competence has no significant influence on performance of government construction projects in Kenya. The study found that factors such as; the contractors' ability to identify and solve problems, technical credibility and resilience as well as accountability based on their professional analysis and interaction greatly influences a contractor's competence and the overall ability to successfully deliver a functional project within cost, time and specifications

6. Conclusions

From the findings of the study, it can be concluded that contractor's competence enhances the performance of government construction projects in Kenya.

The findings of the study support the theory of critical success factors which states that competitive advantage and business performance can be related to how the business scores with regards to the skills and resources which have the highest leverage on value and cost. The study findings show that largely, contractors undertaking Kenyan government construction projects are still lacking on the technical skills and conceptualization skills. This can be an explanation on the performances of the contractors.

7. Recommendations

The study recommends continuous training of contractors and their workers on evolving principles and technologies in the market as well as periodic training on the prevailing government regulations that govern the construction industry in Kenya.

8. Areas of Further Research

It is therefore recommended from this research that further studies can be conducted to identify technologies that can enhance contractor's effectiveness and efficiency in handling government construction projects in Kenya.

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