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Influence of Works Definition on Performance of Government Construction Projects in Kenya

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Abstract:
The significant emphasis bestowed on infrastructural development as a catalyst of economic growth and regional integration by the Kenyan government seems to continue for the foreseeable future. Development of comprehensive project's scopes facilitate the alleviation of scope creep and hence promote sound management of project finances and deliverables. The objective of the study was to assess the influence of works definition 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 works definition and performance of government construction projects in Kenya. The study concluded that comprehensive work definition and development of corresponding work breakdown structures, enables project managers to assign duties and plan for allocation of resources and efficiently monitor progress. This greatly enhances the performance of government construction projects in Kenya.

Keywords: *Project, works definition, performance, Kenya*

1. Introduction

Through a well-written project requirement definition (PRD), the project managers provide project team members, corporate sponsors, and other stakeholders with a common understanding of what the project is all about, and is the authoritative reference document that defines the project. (Fleming, 2009).

1.1. Statement of the Problem

According to Hallman, (2011). It is critical to define and agree upon the project scope for a project to succeed. Most government construction projects in Kenya experiences significant scope variations which sometimes lead to delays in completion because of the added financial implications. Government projects in Kenya are funded from national treasury allocations which are aligned with the yearly national budgetary allocations. Extra financial obligations on projects therefore mostly have to be presented to treasury for extra allocations. This can lead to occasional slowdowns in the pace of works or temporary abandonment and in some cases complete stalling of the projects.

1.2. Objective of Study

The purpose of this study was to establish the influence of works definition on performance of government construction projects in Kenya.

1.3. Research Hypothesis

- H0: Works definition has no significant influence on performance of government construction projects in Kenya.

2. Theoretical Review

2.1. Complexity Theory

The theory was originally developed in the context of physical and biological sciences, Butler (1990), Kiel and Elliott (1996), Merry (1995), and Radzicki (1990), among others, have noted that social-ecological, and economic systems also tend to be characterized by nonlinear relationships and complex interactions that evolve dynamically over time.(Levy & Egan, 2003). Complexity is the property of a real-world system that is manifest in the inability of any one formalism being adequate to capture all its properties. This carries major implications in the ability of project managers to follow through on each project parameter. Complexity theory aims to define how order and patterns arise out of seemingly chaotic systems and how complex behavior and structures emerge from simple underlying rules.

A construction project is a complex web of activities involving professionals of diverse specialties and coordinated by project managers to ensure an organized synchronized unit with common unity of purpose. By having a comprehensive work definition and corresponding work breakdown structure, the project manager is able assign plan for allocation of resources and efficiently monitor progress

2.2. Empirical Review

A carefully specified scope statement is a critical enabler of project success and an integral part of the practice of effective project management. A well-defined scope allows the project team and the customer(s) to ensure that they share a common view of the expected features, quality and timing of the project (Reh, 2016).

Scope Management techniques allow project managers and supervisors to allocate just the right amount of work necessary to complete a project successfully. It is primarily concerned with controlling what is and what is not part of the project's scope. One of the project manager's responsibilities is to ensure that only the required work (the scope) will be performed and that each of the deliverables can be completed in the allotted time and within budget (Monnappa, 2017).

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 Nairobi County where the study was focused on for the investigation. A sample size of 251 was utilized for the study by applying n = (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 = (z2pq)/d2

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= (1.962 x 0.5 x 0.5)/0.052 = 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 works definition 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 works definition statistically significantly influences the performance of government construction projects in Kenya. This is shown by the regression analysis value F (1, 209) = 61.263, p< .001, R2= .587. Correlation analysis revealed that there is a statistically significant positive correlation between works definition X3 and the performance of government construction projects in Kenya (r =0.476, p M 0.01).

The descriptive analysis revealed that, in 7% of government construction projects, the project sponsors do not engage at all a competent team of consultants during the project inception. This means that some projects do not have the input of consultants at the preliminary stages. The remaining 26%, 34%, 24% and 9% engaged consultants to a less extent, to a moderate extent, to a large extent and to a very large extent in that order.

Preparation of a project requirement definition is in Kenyan government construction projects is done moderately. In these projects 34% is undertaken to a moderate extent while 26% and 24% are undertaken to a less extent and large extent respectively. Only 7% is undertaken to a very large extent. The review and approval of the project requirement definition is mainly done to a less extent at 39% and to a moderate extent at 29%.

4.1. Results of Correlation Analysis

The Pearson correlation coefficient was used to analyse the relationship between works definition and performance of government construction projects in Kenya. The results indicate that works definition 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. 476. The number of respondents considered was 211.This relates with the findings of Babalola et al, (2015) who found that some of the key factors affecting project performance include; untimely honoring of payment certificates and change orders during the construction process.

4.2. Results of Regression Analysis

The coefficient of determination R-Square is 0.587 at 0.05 significance level. The coefficient of determination indicates that 58.7% of the changes in the performance of government construction projects can be explained by changes in the predictor variable (works definition), while 41.3% 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 works definition and performance of government construction projects in Kenya. The fitted model is Y =2.538+0.454X3+ Ɛ. This implies than there is a linear relationship between works definition and performance of government construction projects in Kenya. A unit change in works definition will increase the performance of government construction projects in Kenya by the rate of. 0.454. When X3 is =0 then Y= 2.538

4.3. Hypothesis Testing

The hypothesis of the study stated that Works definition has no significant influence on performance of government construction projects in Kenya. The findings of the study showed a significant and positive relationship between works definition and performance of government construction projects in Kenya

5. Discussions

The Cronbach's alpha was 0.709, which indicates a high level of internal consistency of the study instrument and data. The statistical analysis and findings showed a linear relationship between works definition and performance of government construction projects in Kenya.

The objective of the study was to establish the influence of works definition on performance of government construction projects in Kenya and to test the hypothesis that works definition has no significant influence on performance of government construction projects in Kenya. According to the study results, Kenya government construction projects only moderately develops projects requirement definition. This can be an explanation on the performance of these projects in terms of completion within time which shows that half of the projects are never completed on time.

6. Conclusions

From the findings of the study, it can be concluded that works definition had significant and positive influence on the performance of government construction projects in Kenya. The regression results reveal statistically significant positive linear relationship between works definition and performance of government construction projects in Kenya. Works definition therefore greatly influences the performance of government construction projects in Kenya. The findings support the complexity theory.

7. Recommendations

It was concluded that Works definition greatly influences the performance of government construction projects in Kenya. The study recommends for the adoption of a detailed works requirement definition as part of the mandatory

project documents to be prepared and also kept on site during project execution. This will enhance tracking of project deliverables and encourage comprehensive scope definition

8. Areas of Further Research

Further studies can be undertaken on the effectiveness of project planning and monitoring modules such as oracle and others in contributing to construction project success.

9. References

i. Babalola, H. et al. (2015) Factors Influencing the Performance of Construction Projects in Akure, Nigeria: Journal of Civil and Environmental Research.8, (1), 72-79
ii. Fleming, G. (2009). Construction Project Management Handbook. Washington DC: Federal transit office of research, demonstration and innovation.US department of transportation. Retrieved from. https://books.google.co.ke/books?id=3DlfDwAAQBAJ
iii. Hallman,B. (2011).10 Key Success Factors for Application Implementation Projects. Retrieved from https://www.projecttimes.com/articles/10-key-success-factors-for-application-implementation-projects.html
iv. Levy & Egan, D (2003). A Neo-Gramscian Approach to Corporate Political Strategy: Conflict and Accommodation in the Climate Change Negotiations. Journal of Management Studies.4, 804-829.
v. Monnappa, A. (2017). Project Scope Management and its importance. Project Management Institute. Available from: https://www.simplilearn.com/project-scope-management- importance-rar89-article.
vi. Mugenda, O and Mugenda, A (2003). Research Methods. Nairobi: Acts Press.
vii. Reh, J. (2016). The Power of a Carefully Constructed Project Scope. Management and leadership. Retrieved from: https://www.thebalance.com/project-scope-2275691.
viii. Starnes, D. (2010). Simple random sample: Saarbrucken, Germany: Beta script publishing.