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DETERMINANTS OF COMPLETION OF BUILDING CONSTRUCTION PROJECTS IN KENYA: A CASE STUDY OF NAIROBI COUNTY

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ABSTRACT

The study was conducted to evaluate the components prompting the completion of building construction projects in Kenya: a case study of Nairobi County. It had four specific objectives which were; to determine how stakeholders, project financing, project planning and how project supervision impact on the completion of building construction projects in Nairobi County. The study assumed a descriptive survey research design in which 68 randomly selected respondents; Architects, Quantity surveyors, Developers; Project managers and Civil/ Structural engineers to which questionnaires were administered. Data was collected, examined and checked for completeness and clarity, coded and logged in the computer and analyzed using SPSS. Regression and correlations tables were used to present the findings. Results went through a critical assessment of each response and examined using thematic interpretation in accordance with the main objectives of the study and thereafter presented in narrative excerpts within the report. The study established that stakeholder involvement played a critical role in determining the completion of building Construction Projects. Most respondents had a reservation about the Project manager considering stakeholders' interests whereas others disagreeing with the fact that financial disclosure was a common occurrence in projects. It was however recommended that in order to achieve completion of building construction projects, it was important for the project manager to ensure that all stakeholders in the project were involved in the right stages and their views and interests were taken into account. They should be sensitized on the likely delays which could influence the delay and eventually cost of the project.

Key words: *Stake Holder Involvement, Project Financing, Project Planning, Project Supervision Completion of Building Construction Projects.*

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INTRODUCTION

Construction projects are projects that entail building, water and civil works. They begin with identification of the project itself which is supposed to serve a particular need, followed by Planning, Design, Implementation, Closure and finally Handover. The design stage is handled by consultants who include Architects, Engineers, Quantity Surveyors, social and Environmental experts. Some of the factors taken into account during the design stage include but not limited to Existing bylaws, Site constraints, availability of labor and materials, prices of materials and construction timelines (Assaf and Al-Hejji, 2006). Implementation of projects takes different forms which include Design Built Finance Operate (DBFO), Public Private Partnership (PPP), Built Operate Transfer (BOT) or the leasing type of projects may also be considered. Construction projects stalling are some of the most common, costly, complex and risky problems encountered in construction.

Clients finance projects with the sole aim of reaping benefits from the investments. Construction industry is known to be a time-consuming and material depleting industry, due to its complexity and volatility occasioned by varied needs, wants and preferences. Most investors would not invest in a project that seems to last forever, with indefinite cost or budget. There is thus a direct co-relation between time and cost of project. Projects are designed to have definite start and finish time, consume resources and meet certain criterion in satisfaction to the beneficiaries. In a construction project, contracts are based on price or cost and time period needed to finish a project (Zhang and AbouRizk, 2006; Waihenya, 2011).

In a study carried out in Florida State Ahmed*et al.* (2002) identified those delays of construction projects are certainly universal portent. They mostly go together with time and cost overruns. Construction project delays further have a devastating effect on all the stakeholders (contractor, owner, and consultant). It is therefore appropriately inferred that factors affecting construction project completion is a study of interest to all stakeholders. This is in agreement with Ahmed *et al*. (2002) observation that projects delay has been a topic of concern in the construction industry at large.

A study carried out on reclassifying housing delivery delay in Malaysia state that “time is of essence” and “time is revenue” this being a way of capturing the relationship between project delay and revenue loss, Chai and Yusuf (2013). They further state that is an essential benchmark for proprietor and executors as well as house buyers to complete the construction projects on time and within schedule. In conclusion, they state that the sources of delay should be prompted in order to analyze and classify them so that a more open-minded manner is expected.

In a comparable research in Saudi Arabia, 30% of construction projects are accomplished within the scheduled completion dates and that the average overrun is usually between 10% and 30% (Sambasivan and Soon, 2007). Moreover, a similar conclusion was reached on by Chan and Kumaraswamy (1997) in a study carried out in Hong Kong stating that timely delivery of projects to the level of quality standard specified by the client and within budget is an index of successful project delivery (Lam *et al.,* 2008). This however appears to be a conclusion of many studies carried out.

Studies have been carried out in South Africa, Tanzania, Nigeria, Uganda and Mozambique on; causes, procedures, delays, effects of risks, and disruptions in construction projects, managerial and environmental influences resulting to project cost and time overruns to project completion. Kikwasi (2012) and Al-Tabtabai (2002) noted the major causes of disruptions and delays as; delays in payment to contractors, design changes, funding problems, poor project management, information delays, compensation issues and difference on the valuation of work done.

In Nigeria, seven out of ten projects suffer delays of some sort in cause of implementation, Hussein and Omran (2011). The major problem that this

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situation causes to the construction industry is the cost overrun. This makes projects to be completed at costs higher than the initial contract sum, which destabilizes the developer's/client's cash flow. Political instability arising from armed militia is also a key issue in the Nigerian construction industry Ogunsemi and Jagboro, 2006). This leads to slow pace of completion as well as low absorption capacity of the entire country.

According to Kenya National Bureau of statistics (KNBS)report (2017), the construction industry developed by 9.2% in 2016 from an increase of 13.9% recorded in 2015. Improved action in the construction industry for both housing and roads translated in an upsurge in employment in the sector to163.0 thousand jobs in 2016 from 148.6 thousand jobs in 2015. The value of described new buildings completed in Nairobi recorded a progress of 7.6% to kshs76.2 billion in 2016. The worth of approved building plans improved by 43.3% from kshs.215.2 billion in 2015 to Kshs 308.4 billion in 2016.Nairobi being a regional hub, the headquarters of many corporations are located here. These, with the ever increasing population in the city, have necessitated a lot of construction for office blocks as well as houses in order to ensure adequate shelter.

The master plan for Nairobi which was developed in 1973 expired sometime back and the city of Nairobi had not until recently replaced it but with the help of Japanese International cooperation Agency (JICA), the city County of Nairobi recently completed a new master plan as stipulated by the new devolution legislation. The purpose for this master plan is to monitor improvement in Nairobi County for the near future. Among the housing projects envisaged in this master plan include 500 housing units in Garden city estate, 15billion Konza City project, Tatu city in the neighboring Kiambu County but to serve Nairobi County.

In Nairobi, delays in completion of government projects are rampant especially due to endemic corruption and poor reporting structures among the public sector (DFID, 2013). The construction industry contributes up to 5% of the National GDP as reported in the Economic Survey and contributes 10% to employment nationally (Republic of Kenya, 2010a).Performance of these building construction projects can be seen as successful when one is looking at the number of units developers are selling at remarkably short periods (Kihoro and Waiganjo, 2015). However, the sector has recorded dismal performance when it comes to the under lying factors that contribute to successful completion of these projects some of which are very complex in nature. One of these factors is delays in completion of these projects where developers fail to deliver the complete houses as well as the facilities as advertised (Oguoko, 2014).

Statement of the Problem

The construction industry plays a fundamental role in the development of a nation and helps in meeting one of the society's basic needs of shelter. This industry contributes up to 10% to the country's gross national product. Most third world countries are faced with acute endemic construction problems that over the years have raised both national and international concerns (Auma, 2014). However, a growing number of unfinished government construction projects in our country seem to overshadow the efforts and thus pose many questions as to what is behind the failure in providing such a highly needed commodity. One wonders whether such a failure has anything to do with architecture, attitudes and practices of the people or is it just a thing to be pegged on socio-economic platform of the society (Sawhney *et al.,* 2012).

In 2014, 2093 plans were submitted to the City County of Nairobi and the occupation certificates issued were only 297. Whereas in 2015, 2235 plans were approved and the occupation certificates issued were 500 in number. The year 2016, was not any different since 1903 plans were submitted and a paltry 652 occupation certificates issued. The same applied in 2017, when 1946 plans were approved and only 600 certificates of occupation issued. This shows a major problem in project

completion in Nairobi County. In Nairobi, different versions of factors from various researches affecting the completion of building construction projects have alluded to Stakeholder management, Financing, Planning or lack of Supervision etc. This poses a question of concern in a way that one wonders, which factor could be the most causative to completion of building construction projects and thus implying that a critical evaluation of the highlighted factors has to be done. It was therefore the essence of this study to evaluate the factors affecting the completion of building construction projects in Nairobi County.

Objectives of the Study

This study sort to find out the determinants of completion of building construction projects in Kenya: A Case Study of Building Construction Projects in Nairobi County. The specific objectives were:

- To determine how stake holder involvement influences completion of building construction projects in Nairobi County
- To determine how project financing influences completion of building construction projects in Nairobi
- To determine how project planning influences completion of building construction projects in Nairobi?
- To determine how project supervision influences completion of building construction projects in Nairobi.

LITERATURE REVIEW

Theoretical Review

Competency Theory

During project implementation, the people involved may not be aware of their own incompetency. When this comes to the fore, they will try and make every effort to acquire skills or the right technology that can be applied on the project. This is referred to as acquiring unconscious competency. L Flower, G Stack(2017) and Process coaching Centre,(2001) came up with four stages through which an individual may undergo on a project; Unconscious incompetency refers to a scenario where an individual does not understand or know how to do something and is not aware of his or her own inadequacy. The individual may go to the extent of denying the usefulness of the skill or the knowledge he or she is missing. The individual must recognize their own incompetency and how much value the new skill adds before moving to the next stage.

The duration an individual spends in this particular stage depends on the intensity of the stimulus to learn. Conscious incompetency is a scenario where the individual does not even understand or know how to do something and it is still possible that they recognize their own inadequacy and the value of the skill that can address the deficit. They can make mistakes as he or she learns. Conscious competency is where an individual understands and knows how to go about something. This theory applies to various scenarios in the construction industry thus its relevancy. This theory is well pursued through proper project supervision. Good project supervision during the construction of building projects leads to successful project completion.

Total Quality Management Theory

Total Quality Management (TQM) theory has been used across the globe by organizations to improve the performance as well as quality focus (Goldratt and Cox, 1984). In the construction industry hiring the right human resource together with the relevant experience and competencies is the surest way of taking care of quality issues in a project. Many construction companies have adopted Total Quality Management (TQM) principles (Ahmed, 2004). In construction projects, Total Quality Management (TQM) is applied by satisfying the customer requirements and needs (Jaafari, 1996).

Installing or implementing Quality Assurance (QA) system and ensuring Continuous Improvement. The application of Total Quality Management (TQM) systems in the construction industry reduces defects and eventually reworks which could make the cost of projects too high. The efficiency of processes when performing various activities is greatly improved. ISO 9000 series as developed by

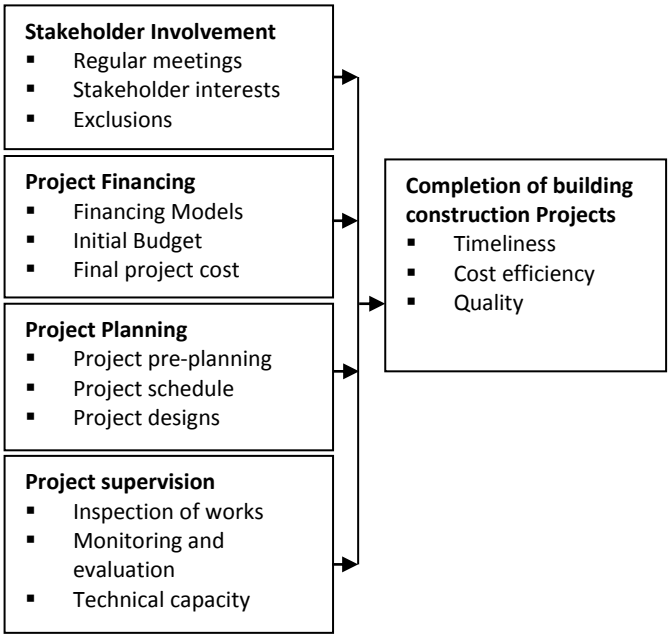
the international standards organization for standardization (ISO) are now accepted internationally as an approach to quality systems.
Construction companies that meet ISO standards are most likely to deliver their projects successfully. When project processes are well planned, the quality of the products churned out is usually up to standard. Therefore project planning may be a good contributor to the completion of building construction projects.

Structural Functionalism Theory

This refers to a framework for building a theory that looks at a society as a complex system whose parts work together to promote stability (Durkhein, 1993). The parts of the society include Government, Education, Family, Healthcare system, Religion and the Economy. Durkhein (1893), believed that to study a society, it is important for sociologists to look beyond individuals and examine social facts such as laws, morals, values religious beliefs, customs, fashion and rituals which all serve to govern social life and therefore the contribution it makes to social stability and continuity (Radcliff-Brown, 1952).

This means that in a construction project, when all parts or all stakeholders work together to maintain stability, then the project will run smoothly to the end. This state is called dynamic equilibrium, parsons (1961). A structural functionalist, Robert Merton pointed out that organizational or company processes often have many functions. Proper organizational processes may not be achieved without sufficient stakeholder involvement, it may lead to dysfunctional consequences like the project not being delivered on time or stalling completely.

Conceptual Framework



Independent Variables **Dependent Variables**

Figure 1: Conceptual framework

Source: Author (2019)

Empirical Review

Stakeholders play key roles on any building construction projects. It is important that all requirements by regulatory authorities are complied with to guarantee the smooth running of any building construction project. On building construction projects in Nairobi County, they include The County government of Nairobi, National Construction Authority (NCA), National Environmental Management Authority, Developers and Consultants. It is a requirement by the Nairobi County government that all proposed projects are submitted to the county planning department for checking before any approval is given. The Nairobi County government planning department checks compliance with development control policies so that every structure whether residential or commercial is placed in its rightful location based on the infrastructure in that particular place. They also ascertain the structural feasibility of the project. National Environmental Management Authority ensures that the project being undertaken does not pose a health hazard to the end user and the general public as well. National

Construction Authority (NCA) makes sure that the contractors undertaking the project are duly registered and Recognized by the government. Consultants have to ensure that the specifications and designs are implemented to the letter in the course of execution of the project. On the other hand, the developers are usually keen to get value for their money which consultants will always strive to achieve.

All these need to be brought, in some way or another, into the decision-making mechanism of the construction management process for timely completion and sustainability of the projects (Assaf *et al.*, 2005). However, their involvement can also influence the time a construction project takes before its completion (Talukhaba, 2009). Regular meetings between stakeholders increase the cohesiveness of the building team thus guaranteeing successful completion of construction projects. It would be detrimental to the project team not to factor the interests of the stakeholders into the building construction project.

Financing is a key component of a project without which, implementation would be a nightmare. Most projects run into headwinds because either the financing didn't go through or the funds were inadequate. Different projects require different financing models. There are those which are funded by clients such that the contractor's role is just to implement and eventually handover the final finished product. With tight supervision, projects handled under this kind of arrangement have higher chances of success.

This arrangement works so well such that every party works towards the successful completion of the project since both of them may stand to lose substantially if the project were to stall. The other model is Built Operate and transfer (BOT) where whoever is implementing the project is the one who arranges for the financing of the project up to completion. Eventually, he operates the project to recover the funds invested in before handing over the project back based on the initial agreement. Chances of this project succeeding are high since whoever is implementing cannot afford to let the project to delay or stall since he would be the one to bear very heavy losses. Projects may have higher chances of succeeding when the initial budget takes care of all components in the project.

For any project to succeed, the planning aspect is very crucial. This can only be made possible through proper designs and elaborate specifications. According to ASTM International (2012), specification refers to a set of requirements to be satisfied by a design or a product. Specifications for building construction projects is prepared by Construction professionals usually form part of the contract documents and they do govern the construction of a project. More often than not, the specifications are written by government agencies, standards organizations, trade associations and corporations among others.

When proper planning takes place in a construction project, problems that are attributable to designers and consultants in the preparation, approval of drawings and delays in work approvals are greatly minimized. The general consensus in the building industry is that when designers do not complete their drawings in good time, project completion is normally affected.

Successful implementation of any given project can only be made possible through a supervisory function, Bakari (2009). This happens when skilled staff is deployed, allocated time and resources provided to create a conducive environment for effective implementation.

Project supervision promotes and enhances the use of new skills and methods that change or increase efficiency and confidence in the delivery of the project (Adam, 2003). In this particular case study, the project architect and the engineers must provide effective supervision on the project they are undertaking. Adam (2003) opines that quality of supervision depends on organizational procedures (cultures), infrastructure, policies and human resources provided to the supervisors.

Simon (2005) in his journal article "creating a winning employer reputation" states that to get required output from contractors depends on how the employer's representative supervises the works through the contractor. Some performance hitches may result from the supervisor's knowledge, capabilities, motivation and general personality. Normally, these could be affected by the organizational cultures, processes, procedures and systems which set expectations for any particular supervisor. The study by Simon(2005) further states that a supervisor should have a set of skills which should include technical, administrative and human resource. The senior managers are required to have a lot of human relations, a bit of administrative skills and little of technical skills. Sifa(2009) opines that any close relationship that develops between project supervisors and people with vested interests in the supervision processes create fertile grounds for the development of role conflicts.

RESEARCH METHODOLOGY

This study adopted an explorative design, which is normally used when the factors being investigated are known but little literature or empirical results are available to offer support (Zikmund *et al.,* 2010).

The objective of this research was to be attained when the primary data is collected from stakeholders and professionals selected from within and around Nairobi City County. Out of the many, the researcher narrowed down to Civil/Structural Engineers, Architects, Quantity Surveyors, Project managers and Developer/Clients. The researcher applied a random sampling strategy in order to get 68 respondents as it was the easiest way of assembling the sample. During sampling, the formula by Nachmias and Chava (1996) was adopted to arrive at the sample size.

The primary data was collected from the different stakeholders through structured questionnaires. Collected data was examined and checked for completeness and clarity, entered in the Statistical Package for Social Science (SPSS) to facilitate easy generation of Mean and Standard errors. A multiple regression model was used to establish the nature of relationship between independent and dependent variables (Kothari, 2014).

FINDINGS

Determinants of Completion of Building Construction Projects

Stakeholder Involvement

The respondents were asked to rate on a scale of 1-5, where (1) =Strongly Disagree, (2) = Disagree, (3) = Neutral, (4) = Agree and 5) = Strongly Agree. The mean ratings on statements are as presented in table 1

Table 1: Respondents rating on Stakeholder Involvement

Statements	Mean	Std. Dev.	Std. error of mean	Variance
Project manager considers me as a core/major stakeholder	2.57	1.305	0.238	1.702
Project Manager calls regular meetings in which all stakeholders participate	3.50	1.280	0.234	1.638
Project manager intentionally excludes some stakeholders in given decision making	3.23	1.194	0.242	1.426
Project manager considers stakeholders' interest	3.57	1.357	0.248	1.840

Ascribing to the findings presented in table 1,the respondents moderately agreed that Project managers of Construction Projects In Nairobi County intentionally excluded some stakeholders in given decision making (mean of 3.23, SEM 0.242, SD 1.174) and they also ascetically agreed that project managers considered all stakeholders' interest (mean of 3.57). On the other hand, the respondents had lower reservation/disagreed that project managers at Construction Projects in Nairobi County consider them as a core/major stakeholders

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(mean of 2.57, SD1.301, SEM0.238). The respondents also agreed with the statement that project managers of Construction Projects in Nairobi County call regular meetings in which all stakeholders participate (mean of 3.57 SD1.357, SEM 0.248). These findings indicated the need for high levels of stakeholder's involvement in Construction Projects in Nairobi County activities. Many projects lacked public engagements/public consultations and therefore do not take care of the needs of the public domain. Based on the finding of Murithi and Makokha (2017), these should be adequately addressed at the planning stage and through effective leadership to reduce their effects on the project before they affect its timely completion.

Project Financing

Table 2: Respondents rating on project financing

Statements	Mean	Std. Dev	Variance	SE of mean
Financial disclosure by project managers a common occurrence in projects	3.20	1.349	1.821	0.246
The project manager has a policy to disclose major financial transactions to all stakeholders	3.07	3.723	13.857	0.680
All project stakeholders take part in project budgeting	3.10	1.213	1.478	0.222
Initial project budget always agrees with final project budget	2.17	1.17	1.247	0.204
Government agencies and regulators are more interested in kickbacks than evaluation of actual project specifications.	3.00	1.083	1.172	0.198

In terms of financial management and regulations in construction projects in Nairobi County, the respondents agreed that financial disclosure by project managers highlights the remuneration of senior key executives (mean of 3.20). On the other hand few respondents had reservation on the initial budget agreeing with final budget (mean 2.17). It was observed that from the respondents point of view in terms of stakeholder involvement in project budgeting being an average occurrence (mean 3.10).

When asked to state how financial management and regulations at Construction Projects in Nairobi County could be improved, the respondents proposed that construction clients should be sensitized on the existing policies so that they could hold offices accountable.

Sensitization on the construction related laws would help enhance transparency leading to greater accountability among stakeholders. Some respondents suggested that clients and project managers of Construction Projects in Nairobi County ought to work closely with regulatory agencies. The County government ought to involve all stakeholders in all steps of policy making for greater ownership of policy especially by consultants in the industry and the clients (Murithi and Makokha, 2017). The study looked at payment models in terms of frequency of updates, timeliness, reimbursement and payments of genuine claims.

Based on the findings of Munyoli (2015) and Nyambura (2015), visualized financing being a vital aspect in construction projects and it should guarantee the timely completion of any given building construction project. Financial disclosure is the heart of every project. As such, issues concerning finances may cause delays. Omran*et al.,* (2012) visualizes that every abandoned project has a lot of financing issues which may tie it down and cause it to lose other business opportunities.

Project Planning

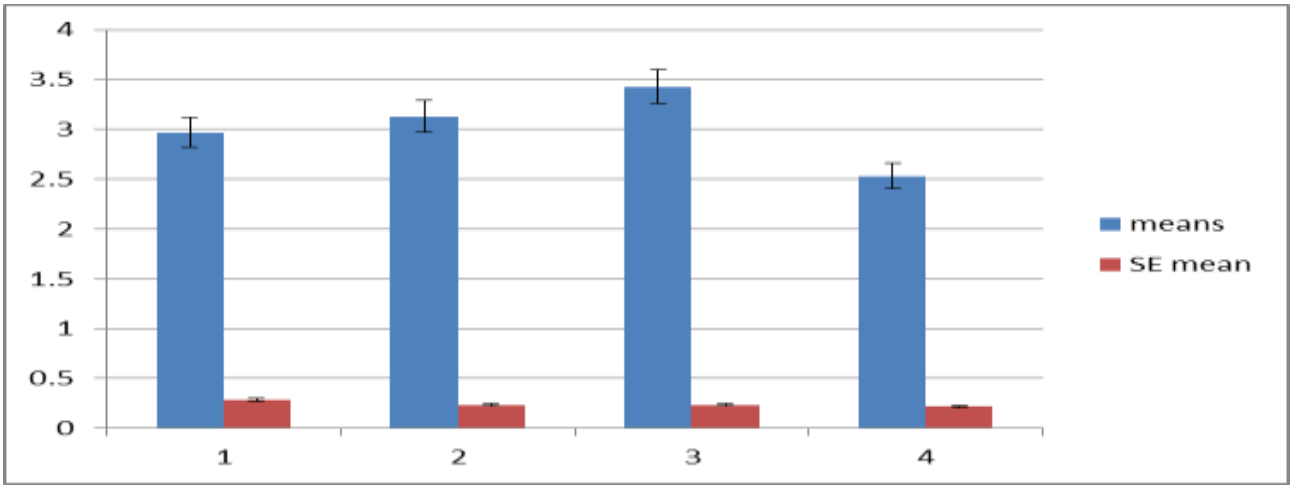

Figure 2: Rating on project planning questions

Statements: 1**;** The project planning process is usually all-inclusive 2**;** Information on contractors and developers is updated and circulated by project managers to all stakeholders 3;Every project has a well prepared schedule that is agreeable to the project team 4;Majority of the projects in Nairobi County are completed on schedule.

As shown in the above figure 2, the interviewed stakeholders, it was evident that majority of the construction projects in Nairobi county are never completed on time (mean 2.53), as such followed by very few respondents having a reserved opinion on the project planning process being an inclusive process(mean 2.97). On the other hand, majority of the respondents hinted at every project having a well prepared schedule that is agreeable with the project team (mean 3.33). Negligible information on contractors and developers being updated and circulated to project managers and other stake holders (mean 3.13).

Following the above data, it can be deduced that successful completion of construction projects is hindered by inclusion or maximum stakeholder participation. This has eminently come out in areas exhibited by a sacred cow model in project management. These findings go hand in hand withVidhayasi and Sivagamasundari (2018) citing a case in India recommending the importance of developing a statistical model when it comes to the assessment of factors affecting the successful completion of construction projects which can be relayed to Nairobi County. From this point of view, the planning process should aim at ensuring that the outcomes of the project will achieved in terms of doing what it is designed to do. Therefore, one must include specification for the quality and type of material to use in construction projects as well as performance standards to be met and the means of verifying quality, as such testing and inspection will envisage successful completion of projects in Nairobi County.

Project Supervision

Table 3: Respondents' ratings on project supervision

Statements	Means	SD	SE Mean
All projects in Nairobi County have adequate number of supervising technical staff.	2.30	1.236	0.226
All technical staff engaged on projects in Nairobi County concentrate on key functions of project supervision.	3.13	1.106	0.202
Project Managers and all staff adhere to organizational procedures	3.37	1.159	0.212

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All members of the project team have necessary capabilities, knowledge, motivation and personality to successfully handle the projects in Nairobi County	3.62	1.265	0.235

Most of the respondents agreed that in the course of supervision, the project team has all that it takes to guarantee nitty appropriate results being the highest (mean 3.62, SE 0.235), however a moderate number of respondents (mean 3.37) agreed that there is strict adherence to organizational rules whereas limited feedback was on the concentration of project technical staff in supervision (mean 3.13, SE 0.202). A few respondents agreed on project time completion as far as the technical staff is concerned (mean 2.30). Notably inadequacy of supervising staff may be am major drawback in achieving proper project supervision.

Supervision plays a major role in ensuring quality standards are attained in project management. These results collate with Sambasivan and Soon, (2007) who postulated that supervision with inadequate number of supervising staff contributes highly to the delay in completion of construction projects. They also identify contractors' inexperience and incompetence as affecting the timely project completion. When there is good supervision, projects are done to the design specifications and therefore work is not repeated due to incorrect installations which have to be re-done. Doing the works afresh means delay and increased expenses. These tallies with Wideman, (1986) on supervising building construction projects implying that supervision requires knowledge of modern management as well as a proper understanding of the design and the construction process.

Building Construction Projects Outcomes in Nairobi County

Table 4: General stakeholder's response to construction projects outcomes

Statements	Mean	Std. Dev.
Construction Projects In Nairobi County satisfactorily meet legal obligations and specifications	3.26	.85
The cost Management in Construction Projects In Nairobi County is satisfactory	2.70	.03
Construction Projects In Nairobi County are completed within satisfactory timelines	2.62	.96
Construction quality specifications are well understood by all stakeholders in construction projects in Nairobi	2.38	.85
All stakeholders of Construction Projects In Nairobi County are Satisfied with project management practices	1.81	.91

As the responses in table 4 demonstrated, the respondents agreed to a moderate extent that Construction Projects In Nairobi County meet legal and quality requirements (mean of 3.26), the cost management in Construction Projects In Nairobi County is satisfactory (mean of 2.70) and Construction Projects In Nairobi County are completed within satisfactory timelines (mean of 2.62). On the other hand the respondents agreed to a low extent to, the statement that construction quality specification and regulations are properly understood by all stakeholders (mean of 2.38) and all Construction Projects in Nairobi County have satisfactory stakeholder management practices (mean of 1.81) This corresponds with Seddon, (2008) that success of any project is highly dependent on its completion time from start to delivery of results.

Correlation Analysis

Table 5: Pearson's correlation among the factors affecting the successful completion of construction projects

Completion of Construction Projects	Stakeholder involvement	financing	project planning	project supervision
Stakeholder involvement	**1.000**	0.655	0.916	0.840
Financing	0.381	**1.000**	0.395	0.380
Project planning	0.407	0.335	**1.000**	0.337
Project Supervision	0.282	0.566	0.684	**1.000**

The table above indicated a correlation matrix among the factors affecting the timely completion of building and construction projects (stakeholder involvement, project financing, planning and supervision). Based on the Pearson's correlation, it is evident that when all stakeholders are involved, a positive correlation is evident in all aspects of financing, planning and supervision. It guarantees the successful completion of building construction projects (correlation 0.80), followed by proper supervision (correlation 0.511) then financing with a correlation of 0.38 and planning with the least impact (correlation 0.359). Correlation has a higher impact when its more than 0.5 hence stakeholder involvement takes the lead. This is a clear indicator that in order to achieve the success of any construction project, proper supervision and stakeholder engagement will enhance the success of a project (El-Gohary *et al.,* 2006).

Multiple Regression Analysis

Table 6: Regression Model summary

					Change Statistics				
Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	F Change	df1	df2	Sig. F Change	Cronbach's Alpha
	.785[a]	.616	.598	.494	7.058	4	54	.004	0.687

a. Predictors: (Constant), That stakeholder involvement influences the successful completion of construction Projects in Nairobi County, Project financing influences Completion of construction Projects, Project planning influences the Completion of construction projects in Nairobi county and Project supervision influences successful completion of building construction projects in Nairobi County, Kenya

b. Dependent Variable: Successful completion of construction projects in Nairobi county

Analysis in the above table indicates that the coefficient of determination (which indicates the percentage variation in the dependent variable being explained by the changes in the independent variables) R^2 equals 0.616. The P- value of 0.004 (less than 0.05) infers that Completion of Construction Projects is significant at 5 % and at 95% confidence interval. Further, from the above table, the relatively strong positive correlation (0.785) indicates that these variables are very significant therefore need to be considered in any effort to boost completion of construction projects in Nairobi county. These findings go hand in hand with those of (Owuor, 2016).

Table 7: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	22.046	4	5.512	7.058	.004[b]
Residual	42.188	54	0.781		
Total	**64.324**	**58**			

a. Dependent variable; project completion

b. Predictors: (constant), stakeholder involvement, project financing, project planning and project supervision)

The purpose of the analysis of the variance is to test differences in means (for groups or variables) basically aimed at achieving statistical significance. This was accomplished through the analysis of variance, by separating the total variance the true random error and the components that are due to differences between means. These were in line with the findings of Kamau and Mohamed (2018) whereby the ANOVA analysis intended to investigate whether the variation in the independent variables explains the observed variance in the outcome on successful completion of building construction projects in Nairobi County.

Table 8: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	1.963	1.426		1.376	.000
Stakeholder involvement	.424	.292	.333	1.452	.042
Project financing	.061	.179	.079	.343	.012
Project planning	.079	.248	.091	.319	.039
Project supervision	.057	.205	.059	.278	.011

a. Dependent Variable: what is your general view on successful completion of construction projects in Nairobi County?

b. b.The multiple linear regression equation established here in as follows:

$Y = 1.963 + 0.424X1 + 0.061X2 + 0.079X3 + 0.057X4 + \varepsilon$

Where

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1.936 was the constant which indicated that without Stakeholder involvement, Project financing, Project planning and Project supervision, completion of building construction projects in Nairobi County Kenya would be 1.936

X1= 0.424, demonstrated that a unit change in stakeholder involvement will influence completion of building construction projects with0.424 units increase.

X2= 0.061on the other hand demonstrates that a unit change in the financing of construction projects will have an impact by 0.061 units increase

X3= 0.079, demonstrations that a unit change the planning will influence the successful completion of construction project will domino effect to 0.079 units increase

X4= 0. 057 indicates that a unit change in supervision will influence completion of building construction projects with units increase of 0.057

These results match with those of Owuor (2016)on how economic factors and timeliness of payment of contracts influence the completion of building and construction in government

CONCLUSION

The study concluded that; it was important for the project manager to ensure that all stakeholders in the project are involved in the right stages and their views and interests are taken into account. They should be sensitized on the likely delays which could impact on the cost of the project. Sufficient project finances should be set aside before any project commences. Lack of finance will always cause projects to delay or stall. It is important that a contingency sum of 15% of the total cost of the project is included to take care of any variations in the course of project implementation. Project planning as well as supervision must take place at all stages of the project to ensure optimum efficiency. The study findings revealed that Majority of the respondents not only hypothesized independent variables but were statistically significant. Generally, there are gaps in the management of stakeholders by project managers in Construction Projects in Nairobi County that limit the capacity of the project in meeting its mandate. Such limitation arise due to limited involvement of stakeholders in the activities of the project, poor communication and even meetings not being fully and regularly attended by all stakeholders. The study established that processes are marred by favors and corrupt practices. Greater transparency in the management of building construction projects in Nairobi County is highly encouraged.

RECOMMENDATIONS

All stakeholders should be engaged at the right time by the project managers so that they don't delay the project by introducing their input late in the course of the project. The project manager should have the right skills to navigate the implementation of the project to avoid interfering with the project schedule.

The clients/developers should always ensure that the funds for the project are availed in advance and should be sufficient so that projects do not run into financial headwinds.

The County government of Nairobi has to rethink its construction industry regulations by putting in place policy frameworks to ensure management of Construction Projects in Nairobi County is free of corrupt dealings especially where regulatory agencies take bribes to approve plans. Policy frameworks are required to ensure meaningful engagement between construction project stakeholders and regulatory agencies.

All project players must be trained and sensitized on factors that influence successful completion of construction projects so that they always work focused on the delivery of the project.

It would be important to establish the contractor's competency in terms of management and financial capability before a project is awarded. To this end, there should be an investigation to determine the effect of the contractor's competency on successful completion of construction projects in Nairobi County.

Suggestions for future Research

Future researches can study other determinants beyond this study's scope. A consideration of other

researches methodological procedures such as a different design and sampling procedure to enable generation of findings may also be appropriate.

REFERENCES

Ahmed, S. M., Azhar, S., Castillo, M., Kappagantulla, P.(2002).*Construction delays in Florida: An Empirical Study.* Florida: State of Florida Department of Community Affairs.

Auma, E. (2014). Factors affecting the performance of construction projects in Kenya: a survey of low-rise buildings in Nairobi Central Business District. *The International Journal of Business & Management,* 2(12), 115.

Assaf, S. A. and Al-Hejji, S. (2006). Causes of delay in large construction projects. *International journal of project management,* 24(4), 349-357.

Chan, M.M. and Kumaraswamy, D.W.M. (2002)*Compressing construction durations: Lessons learned from Hong Kong building projects* Int.J Proj. Manage. 20 (1) (2002), pp. 23–35.

Chai, A. H. R. (2016).Competencies of Construction Manager (*Doctoral dissertation*, UTAR).

El-Gohary, N. M., Osman, H., and El-Diraby, T. E. (2006).Stakeholder management for public private partnerships. International Journal of Project Management, 24(7), 595-604.

Gaba, G. (2013). The impact of project delivery systems, cost minimizations and project control on construction project success. Evidence from Ghana (Master's thesis). University College London, London, United Kingdom.

Goldratt, E. M. and Cox, J. (2016). The goal: a process of ongoing improvement. Routledge.

Government of Kenya (2008).*Kenya Poverty Integrated Assessment Report*. Nairobi: Government Printer.

Government of Kenya, (2010*).*The 2009 Kenya Population and Housing Census: Counting Our People for the Implementation of Vision 2030*.* Government Printer: Nairobi

Hill, R. (1998). What sample size is "enough" in internet survey research. Interpersonal Computing and Technology: An electronic journal for the 21st century, 6(3-4), 1-10.

Iyer, K. C. and Jha, K. N. (2005). Factors affecting cost performance: evidence from Indian construction projects. *International journal of project management,* 23(4), 283-295.

TalukhabaA, A, (2009),An Investigation into Factors Causing Project Delays in Kenya. Case Study of High-Rise Buildings in Nairobi, unpublished PHD Thesis, University of Nairobi.

Kamau, C. G., and Mohamed, H. B. (2018). Efficacy of Monitoring and Evaluation Function in Achieving Project Success in Kenya: A Survey of County Government's Projects. IJAME.

Kikwasi, G.J. (2012) 'Causes and effects of delays and disruptions in construction projects in Tanzania', Australasian Journal of Construction Economics and Building, Conference Series, 1 (2) 52-59.

Lam, E. W., Chan, A. P. and Chan, D. W. (2008). Determinants of successful design-build projects. *Journal of Construction Engineering and management*, *134*(5), 333-341.

Mugenda A. and Mugenda, O., (2008).*Research Methods: Quantitative and Qualitative Approaches*. Acts Press, Nairobi.

Nyambura, W. B., PROJECTPLANNING, I. (2015). Factors Influencing Completion Of Building Projects In Kenya, Ministry Of Land, Housing And Urban Development, Nairobi County.

Ogunsemi, D. R., and Jagboro, G. O. (2006). Time-cost model for building projects in Nigeria. Construction Management and Economics, 24(3), 253-258

Rosazuwad, M., (2010).The Factors and Effects of Delay InGovernment Construction Project (Case Study InUganda)-Retrievedon6.01.2

Waihenya J., (2011).*Identifying Causes of Cost Overruns in Traditional Contracts in Kenya*, MA Thesis, University of Nairobi

Wideman R. M. (1986). "The PMBOK Report -- PMI Body of Knowledge Standard," *Project Management Journal*, Vol. 17, No. 3, August 1986.

Zhang, X. and AbouRizk, S. M. (2006). Determining a reasonable concession period for private sector provision of public works and service. Canadian Journal of Civil Engineering, 33(5), 622-631.