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ABSTRACT

This study examined the influence of project parameters on performance of county funded construction projects in Mombasa, Kenya. Project parameters are certain characteristics and features that can define a project or its aspects in terms of the scope, budget, schedule, and quality of the project. The study was based on the complexity theory, scheduling theory, ABJ's sticky theory, goal setting theory and triple constraints theory. The study used correlational research design to examine the relationship between project parameters and performance of county-funded construction projects in Mombasa, Kenya. From the 280 county-funded construction projects in Mombasa County, a sample size of 165 projects was used. The study unit of observation was project managers. The study used a stratified sampling technique. A pilot study was undertaken for the data collection tool (questionnaire). The study collected both qualitative and quantitative data to determine the relationship between project parameters and performance of county-funded construction projects in Mombasa, Kenya. SPSS was used to analyze the quantitative data. Quantitative data was analyzed descriptively and inferential statistics were used to validate the association among the study variables. The hypotheses were tested at 5% level of significance. The study results were presented by the use of tables and graphs. Results revealed that all the four-project parameter variables had a positive and significant association with performance of county-funded construction projects in Mombasa, Kenya.Though, the magnitude of the influence was different for every specific project parameter variable under study. Time management had the largest effect followed by cost management, then scope management, and finally the quality management. The study recommended county government need to manage project parameters in the projects to improve performance of county funded construction projects. The study suggested further studies to be conducted with other variables that affect the project parameters and the performance of the other projects in different sectors in other areas of the country.

Key Words: *Scope Management, Time Management, Cost Management, Project Quality*

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INTRODUCTION

Project performance is based on a set-criterion anchored on the standards or principles from which stakeholders are able to judge the project success (Nibiyza, 2015; Rugenyi & Bwisa, 2016). These are the key predictors which are very crucial for every successful project in terms of the achievement of the goals and objectives. Many authors though have argued that performance of a project is more or less based on the client's satisfaction as prerequisite; a project success is controlled by time, cost and scope, commonly referred to as the Project Triple Constraint (Baymount, 2015; Akinyde, 2014; Wanjau, 2015).

Globally, performance of construction projects has been indicating lack of adherence to project parameters which yields to underperformance of the projects and failing to meet the stakeholder's expectations. For example; according to a 2018 IBM survey on project management change, it was established that about 40% of the projects were able to be accomplished within time, scope and cost. In another report, it was found out that one in six of the 1,471 projects carried out had an average of time plus cost overrun that is 200% and 70% respectively (Flyvbjerg & Budzier, 2018).

In the regional arena, researchers have indicated different magnitude and frequency of cost overruns, especially for the county-funded construction projects in the country. For example, in one study the average cost overrun for large scale projects was estimated to range between 20.4 to 44.7 % (Chantal, Cantarelli, Flyvbjerg, Molin & Van Wee, 2018). Further, Price Waterhouse Coopers (PwC) (2014), based on the survey on several construction projects in 34 industries in 38 countries, established that 86% failure of projects being delivered within time, cost and budget.

In Kenya, the focus has been mainly on construction projects undertaken by the national government and parastatals. Time and cost performance of projects in Kenya is unacceptable with over 70% of established projects likely to reach time overruns of over 50%. Furthermore, it is reported that 50% of the projects are likely to have a cost overrun of over 20% (Rugenyi, 2016). For example, Thika Road (KARA, 2016), and Langata Road projects finished late and over budget, just to mention a few. These reports contradict the inverse proportionality between time and cost as envisioned by the 'parameters and the direct proportionality between scope, time and cost. From the past studies, it has been reported that time plus cost overruns is common in most projects (Omondi, 2017; Sterman, 2015).

Kenya's devolution is an ambitious form of decentralization involving large-scale political and administrative governance (Kenya, 2013). Unlike other countries where the devolution process of the three powers has been sequentially attained, in Kenya the experience has been a 'big bang' where the three types of governance was achieved at once with the ratification of the constitution (Apiyo & Mburu, 2014; Kobia & Bagaka, 2014). Devolution in Kenya is also based on the constitution supremacy, people sovereignty and public participation principle of the people (ICJ Kenya, 2013). The constitution fourth schedule has set out the powers and functions for both the national and county governments. The Kenya Constitution (2010) articulates the rationale behind devolution among other reasons such as self-governance, economic development and equitable sharing of national and local resources as enhanced through governance determined by aspects of fiscal, administrative and political governance.

The county government of Mombasa has established various projects to enhance development in the county. These are projects with high impact in terms of increasing county competitiveness, generation of revenue, creation of employment among others. The construction projects are anchored on the County Transformative Agenda and Kenya Vision 2030 agenda. These construction projects are funded as per CADP sectors anchored on the MTEF Sectors which include the Infrastructure and ICT, Culture and Recreation, Social Protection, Health;

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Education; General Economic, and Commercial Affairs Agriculture, Environmental protection, Water and Natural Resources; Public Administration & International (or inter-government) Relations Rural and Urban Development (ARUD) and Energy.

Statement of the Problem

Most of the county funded construction projects in the country have failed since they have shown to have time and cost overruns of over 50% (Baymount, 2015; Akinyde, 2014; Wanjau, 2015). The construction projects fail to meet the project parameters consideration which are very crucial in projects' decision making in the county. The failure to understand, interpret and apply this criterion is regarded as one of the factors which had led to underperformance of the projects being funded by the county governments in the country. (Omondi, 2017; Chin & Hamadi, 2015; Kiarie & Wanyoike, 2016; Kariungi, 2014; Leong *et al.* 2014). Lukale (2018) found out that project triple constraints management significantly improves performance of projects by more than 70%.

Despite the guidelines set out by county governments of Kenya on the implementation of various projects, the projects' performance is still wanting (Osedo, 2015; Sikudi & Otieno, 2017; Mwangi, 2018). Moreover, according to Osedo (2015) the county funded projects have shown puzzling statistics which presently indicates that underperforming as between 60 and 82 percent of projects have failed or are completely abandoned by the county governments. The Auditor General report (2017) indicated that 75% of the county funded construction projects had time plus cost overruns. The question now remains; is project parameters management the actual missing factor on performance of county funded construction projects in Kenya, has it been implemented? How has it improved the performance of projects?

Similar studies include those done by Omondi (2017) who focused on the triple constraint management and WASH projects completion in Nakuru County, Kenya. Rugenyi and Bwisa (2016) study was on project triple constraint and project manager's perspective on management of projects in Nairobi. Further, Sikudi and Otieno (2017) sought to examine factors affecting the implementation of development projects funded by Kilifi County government. From the past studies, no study has focused on the relationship between project parameters and county funded construction projects performance in Mombasa, Kenya. A gap this study sought to fill. Moreover, due to the sectorial, contextual, and managerial differences among the sectors, the influence of project parameters on performance of county funded construction projects and their application would not be assumed to be similar, unless empirical findings reveal so. It is on this premise that this study therefore, examined the influence of project parameters (cost, time, scope and quality) on construction projects performance in Mombasa, Kenya.

Objectives of the Study

The aim of the study was to examine the influence of project parameters on performance of county funded construction projects in Mombasa, Kenya. The specific objectives were;

- To examine the influence of scope management on performance of county funded construction projects in Mombasa, Kenya.
- To establish the influence of time management on performance of county funded construction projects in Mombasa, Kenya.
- To determine the influence of cost management on performance of county funded construction projects in Mombasa, Kenya.
- To assess the influence of quality management on performance of county funded construction projects in Mombasa, Kenya.

The hypotheses that guided the above objectives included;

- **Ho_1:** Scope management does not significantly influence performance of county funded construction projects in Mombasa, Kenya
- **Ho_2:** Time management does not significantly influence performance of county funded construction projects in Mombasa, Kenya

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- **Ho_3:** Cost management does not significantly influence performance of county funded construction projects in Mombasa, Kenya
- **Ho_4:** Quality management does not significantly influence performance of county funded construction projects in Mombasa, Kenya

LITERATURE REVIEW

The study was based on the following theories;

Complexity Theory

The complexity theory is grounded on the performance of projects (Koskcla, 2000) and based on the citation by Richards (2010) and as discussed by Curlee and Gordon (2011) is anchored on management rarely belief that order is not based on the adequate flexibility to solve problems in many situations. Always there are complexities in every possible situation, thus complexities do exist in construction projects, especially the county-funded ones. In other words, this theory recognizes that county-funded construction projects by nature have different situations or parts that must work together to enhance the system. Based on this, the complexities may bring several changes in the projects which the stakeholders may have not been prepared for. This will require changes in regard to the procedures and process for effective implementation.

Scheduling Theory

Scheduling theory was introduced by Richard Ernest Bellman in 1954. According to this theory, a scheduling problem is defined by three components: a description of a set of resources, a description of a set of tasks and a description of a desired objective (Abeyasinghe, Greenwood & Johansen, 2017). Antill and Woodhead (2019) assert that scheduling theory dictates that schedule planners should always consider the following when undertaking project scheduling; divisible load scheduling, scheduling checkpoints for fault-tolerance, resource allocation in virtualized environments, scheduling mixed parallel applications, scheduling applications on volatile resources and scheduling for energy savings.

ABJ's Sticky Theory

Traditional models of cost behavior usually posit a linear relation between activities and costs where in the short run, total costs equal fixed costs plus unit variable costs × activity volume. This model implies a mechanical relation between changes in costs and contemporaneous changes in sale activity. According to Müller and Jugdev (2012) recent research has begun to focus on how managerial incentives affect the trade-off between fixed and variable costs.

The starting point of the sticky costs theory is that many (but, not necessarily, all) costs arise as a result of deliberate resource commitment decisions made by managers (Shahu, Pundir and Ganapathy, 2012). Lugusa and Moronge (2016) opined that the concept of cost stickiness is consistent with the thought that costs arise as a result of deliberate resource commitment decisions made by managers. This means that the absolute change in selling, general cost, and administrative cost associated with decreased sales activity is systematically less than those associated with increased sales activity and they interpret this as evidence of overt cost management (Tabish & Jha, 2012). Lugusa and Moronge (2016) argue that when sales decrease, managers choose to retain slack resources to avoid resource adjustment costs such as severance payments to dismissed workers or disposal losses on equipment. When demand increases beyond available resource capacity, managers can meet the demand only if they add the required resources.

Theory of Triple Constraints

The theory of triple constraints is examined from project definition that it's a temporary group of activities which are designed to produce a desired service or unique product (PMI, 2015). The theory of the triple constraint depicts that the project triple constraint management (cost, scope, quality and time) which bounds the project universe which must be achieved (Dobson, 2004). Construction projects bring complications in project management, needs and constraints, and therefore, for effective project management, constraints have

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to be managed. Projects take place inside organizations where there is a finite-number of resources with which to accomplish infinite tasks. This results in scarcity and the triple constraints; a deadline, a budget, and a minimum acceptable level of performance (Dobson, 2004).

Goal Setting Theory

Goal-setting theory was developed by Latham and Locke (1994), it is basically about motivation and states that individuals are able to deliver certain tasks when they feel recognized by the employer or supervisor. The projects fail to achieve project parameters since the project team feels is not motivated. The challenges in regard to the implementation of construction projects are due to various issues concerning team members not appreciated in terms of monetary and non-monetary. This has a serious impact on the achievement of project objectives in the long run. The goals are achievable when the project team is given the appropriate support to enhance performance (Armstrong, 2005). Goal setting is understood to mean the identification process in the stages of performance to achieve the desirable outcomes. The basic tenets of goal setting theory in projects are to look for means to achieve the project parameters (time, scope, quality and cost) without compromising quality (PSU WC, 2015). It is understood that if the project team finds that the project performance is not achievable to the desired goals, they will find a new strategy not to compromise the project constraints (goals) (Locke & Latham, 2006).

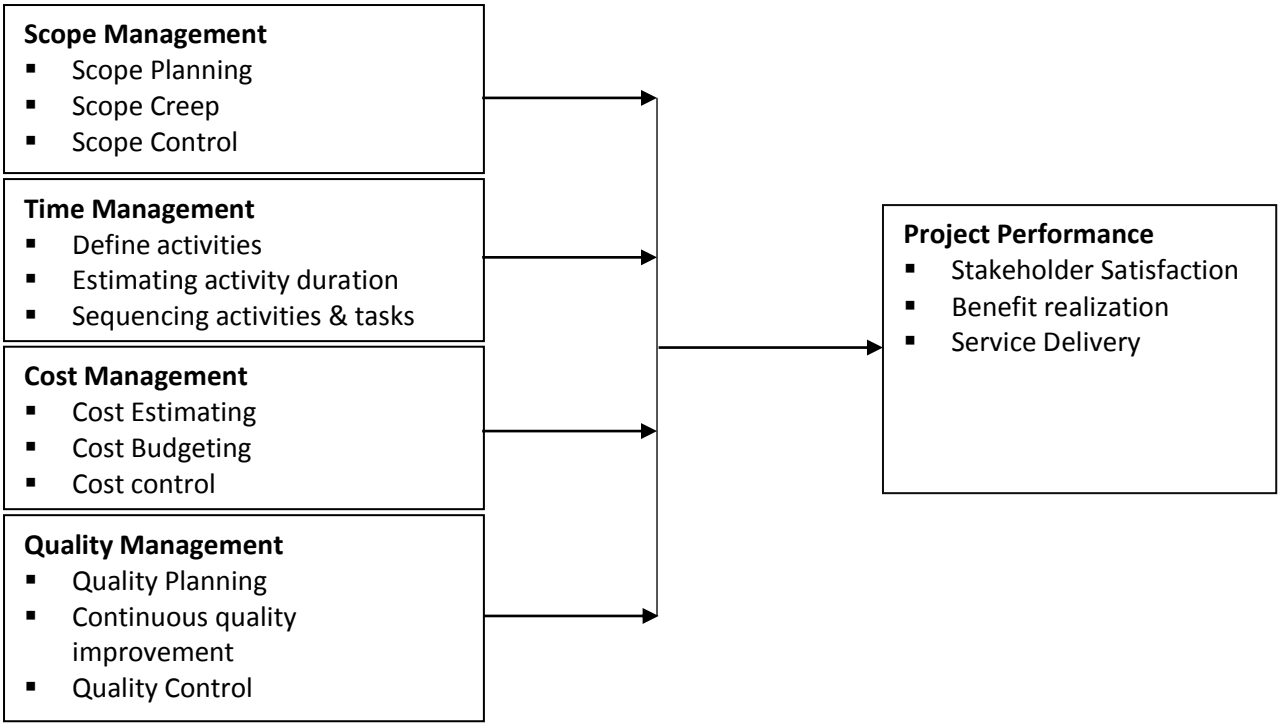

Figure 1: Conceptual Framework

Empirical Review

Hassan and Adeleke (2019) investigated the effects of project iron triangle constraints focused on the building projects in Kuantan, Malaysia. The study employed quantitative research technique because it is most suitable for the investigation. The findings clearly showed that the project constraint had a positive relationship with the construction companies' building projects. Kabirifar and Mojtahidi (2019) analyzed construction phases based on the ranked engineering while focusing on the procurement which involves the activities which

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are critical especially for the residential large-scale construction projects in Iran. The project iron triangle constraints and leading factors defined the projects that were being investigated. The results indicated that engineering design, project planning and controls are significant factors which contributed to the project performance. In addition, engineering has a pivotal role in project performance, and this significance is followed by the construction phase.

Rugenyi and Bwisa (2016) study used the triple constraints and projects performance in Nairobi from the project manager perspective. The study revealed that statistically there was no significant relationship between triple constraint and projects management in Nairobi. Relatedly, Omondi (2017) examined triple constraints, specifically project scope and completion, schedule and cost management on completion of NGO's projects in Nakuru County, Kenya. A descriptive survey design was adopted in the study and involved quantitative methods. It was established that the relationship between the scope, schedule and cost and project completion was significant for the NGO's projects.

Nibyiza (2015) study focused on the scope change management as a means of successful project implementation in Rwanda. Specifically, the study examined the scope change; project activities adjustment, project costs changes, product, time or quality of services which were delivered and identified with the challenges associated with the project scope changes for the Akazi Kanoze projects. The study results indicated that project triple constraints, especially project scope changes, affected performance of Akazi Kanoze projects.

Raza and Shah (2012) study sought to investigate how the project triple constraints impacted projects in the IT industry. They were determined in terms of the environment for work of the team members in the project in terms of the satisfaction of the job, remuneration, work hours. Based on the study findings, it was revealed that the work environment affected performance of the projects in the IT industry in consideration with project constraints. Similarly, Kwasira, Wambugu and Wanyoike (2016) study aimed to examine contractors for the building projects based in Nakuru and how these practices affected successful projects completion. The study findings indicated that management of quality was significant for the completion of the projects in the study area. Finally, Ahmed (2018) study addressed the effectiveness of critical path method scheduling on project delivery. The aim was to establish whether the projects have been completed in terms of project constraints. According to study findings, it indicated that critical path method was necessary to track project activities to meet the project success.

METHODOLOGY

The study used correlational research design, the main reason being to establish a relationship between study variables (independent and dependent). The target population for this research was 280 county funded construction projects in Mombasa, based in the different constituencies within Mombasa County undertaken from the year 2013 to 2019 focusing on two key units of respondents per project comprising of a project manager and one end user representative per project. The unit of analysis was the county government construction project. This study collected both primary and secondary data. The secondary sources such as articles, books, journals, newspapers, official publications, reports and seminar papers were used to gather information which complimented primary data which were collected using interviews and questionnaires. Statistical package for Social Science Software version 24 software (SPSS) was used to run different statistical tests. Qualitative data analysis by the use of content analysis was also used. The study assumed a multiple linear relationship among the study variables, and was expected to follow a generic regression model in the form:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$ …Equation 1 (OLS Equation)

Where:

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Y = Dependent variable (Project Performance).

β_0 = Intercept, is the value of the performance of projects when independent variables are zero.

β_{1-4} = Regression coefficients for each explanatory variable.

X_1 = Scope Management

X_2 = Time Management

X_3 = Cost Management

X_4 = Quality Management

ε = Error term.

FINDINGS

Scope Management

Table 1 presented the percentages, means and standard deviation statistics relating to the information measuring the respondents' level of agreement as to how the given indicators of scope management influenced performance of county funded construction projects. The value that had the highest frequency scores among the respondents was the occurrence, agree (value of 4.00 on the monadic scale), as all the indicators for scope management under this column had high numbers of respondents. This implied that most respondents were in agreement that the indicators listed for scope management influenced performance of county funded construction projects in Mombasa, Kenya.

The table also gave the mean values for individual indicators of scope management and the respondent's level of agreement on their influence on performance of county funded construction projects. These were arranged in order from the largest to the smallest mean values. The first three mean values all had values greater than 3.5 and rounded off to a mean of 4.00 (which corresponded to agree on the monadic measurement scale). Thus, the respondents generally agreed on the perceived influence of the first three scope management indicators on performance of county funded construction projects, and these had the highest ranking among all the respondents.

Table 1: Scope Management and Project Performance

Statement	N	Mean	Std
The county government normally plan for scope before the project is initiated	121	3.990	.008
There is clear scope definition to avoid scope creep in the projects in the county.	121	3.987	.521
Scope control is well implemented in the county-funded projects	121	3.789	1.128
We can manage all types of services required by clients within the shortest time possible	121	3.214	1.325
Scope control is one of the key factors considered before the implementation of any project	121	3.128	1.387
A clear scope plan is shared with the project team before the project is implemented	121	3.078	1.467
Composite Mean		**3.531**	

Mean values lower than 3.50 rounded off to a mean of 3.00, indicating that these respondents disagreed on the influence of these scope management indicators on performance of county funded construction projects. The standard deviations show the extent to which the responses were dispersed around the mean values. The lower the standard deviation values, the closer the scores clustered together and this was easily observed by comparing the scores for each scope management indicators. Likewise, the project design is made such a way to identify risks in time and a clear scope plan is shared with the project team before the project is being implemented, had the lowest perceived influence on performance of county-funded construction projects.

In accordance with Apiyo and Mburu (2014) findings, project managers were encouraged to conduct scope management effectively especially through scope verification and scope changes to minimize price escalation during project

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implementation, thus minimizing cost variance. Also, scope management strategy suggested by Baymount (2015), involving the understanding the type of the scope management aspects, would enhance the construction value-chain. These would regularize the formulation of managerial strategies to minimize risks to enhance projects performance (Band & Pretorius, 2016). This is in agreement with the current study's findings where clear scope definition to avoid scope creep in the projects in the county is ranked highly.

Time Management

Table 2 presented the percentages, means and standard deviation statistics relating to the information measuring the respondents' level of agreement as to how the given indicators of time management influenced performance of county funded construction projects. The value that had the highest frequency scores among the respondents was the occurrence, agree (value of 4.00 on the monadic scale), as all the indicators for time management under this column had high numbers of respondents. This implied that most respondents tended to agree that the indicators listed for time management influenced performance of county funded construction projects.

Table 2: Time Management and Project Performance

Statement	N	Mean	Std
The county government defined all the project activities before they took off	121	3.872	1.121
There are activities' sequencing conducted in order of priority for all the projects	121	3.717	1.342
Activity duration is normally estimated during the planning process to ascertain time required for every task	121	3.684	1.378
Activity resources estimation is usually a key item in schedule management of project activities.	121	3.543	1.421
The schedule is normally developed prior to any project activity by the county government	121	3.314	1.587
Controlling schedule is considered a key activity to ascertain variations between planned versus actual in terms of time management.	121	3.178	1.616
Composite Mean		**3.551**	

From Table 2, the percentage scores indicated a clustering around the column for 'agree'. The first three mean values all had values greater than 3.50 and they rounded off to a mean of 4.00 (which corresponded to agree on the monadic-type measurement scale). This implied that the respondents agreed on the perceived influence of the first four, time management indicators on the performance of county funded construction projects. Those with deviation values of less than 3.50 indicated a clustering around the mean value of 3.00, or disagree on the measurement scale used. Indicators with low standard deviations had less dispersion about the means than those with high standard deviations. These findings concur with those by Lukale (2015) that project time management is dynamic and may require input from several different teams each with individual project time management process in order to integrate the various interdependent project component parts for attainment of the project goal (s) (Osedo, 2015). Raza and Shah (2012) also indicated that management of the projects is usually a procedure of time management to ensure that project activities and tasks are achieved as expected. It is seen as the project activities scheduling which involves the definition of tasks and activities, estimation of activities and estimation of resources to improve performance of the projects (Rugenyi, 2015).

Cost Management

Table 3 presented the findings with regard to cost management and their perceived influence on performance of county funded construction projects. The percentage scores indicated clustering

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around the column for 'agree'. The first three mean values all had values greater than 3.50 and rounded off to a mean of 4.00 (which corresponded to 'agree' on the monadic type measurement scale). This implied that the respondents agreed on the perceived influence of how the first three variables of cost management indicators influenced performance of county funded construction projects, and these had the highest ranking. Those with mean values of less than 3.50 indicated a clustering around the mean value of 3.00, or 'disagree' on the measurement scale used. Indicators with low standard deviations had less dispersion about the means than those with high standard deviations.

Table 3: Cost Management and Project Performance

Statement	N	Mean	Std
Every construction project funded by the county government has its cost well planned before being implemented	121	3.798	1.189
Every project has its budget considered and passed by the county assembly to avoid time plus cost overruns	121	3.644	1.234
There is a department set aside to ensure that project costs are controlled	121	3.614	1.434
Financing of projects is normally secured before the beginning of every project in the county.	121	3.333	1.539
The duties assigned to us are well-defined and clear to us	121	3.209	1.599
Projects are normally completed within the approved budget in the county	121	3.142	1.621
Composite		**3.457**	

The project manager carries out external and internal investigation of cost at every stage of the project and monitoring the quality non-conformance report against an agreed quality standard ensured minimal variation from quality specification. This was in tandem with what Meredith and Mantel (2006), they observed cost management processes require effort and knowledge in project costing. The project complexity usually determines the requirements in such away it may require one person, and they may occur more than once during the life of a project (Khwasira, Wambugu & Wanyoike, 2016). Cost management is essential for an effective project. Cost management can reduce cost plus time overruns**.** Rugenyi (2015) argues cost management helps to budget for the tasks and activities to be implemented in a project. It facilitates monitoring of project tasks in order to achieve the project deliverables to the stakeholder's satisfaction. It also helps to reduce wastage of planned and unplanned project resources and ensure that project is staying within the approved cost (budget).

Quality Management

Table 4 presented the findings according to the quality management and the perceived influence they have with performance of county funded construction projects. The percentage scores indicated a clustering around the column for 'agree'. The first three mean values all had values greater than 3.50 and rounded off to a mean of 4.00 (which corresponded to 'agree' on the monadic type measurement scale). This implied that the respondents agreed on the perceived influence of how the first three quality management indicators influenced project performance, and these had the highest ranking. Those with mean values of less than 3.50 indicated a clustering around the mean value of 3.00, or 'disagree' on the measurement scale used. Indicators with low standard deviations had less dispersion about the means than those with high standard deviations.

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Table 4: Quality Management and Project Performance

Statement	N	Mean	Std
The county government normally plan for quality before the project is initiated	121	3.784	1.421
All the projects funded by the county government have a verified quality plan which guides their implementation.	121	3.721	1.456
All the construction projects implemented by the county government undergo continuous quality improvement to the closing stage	121	3.709	1.537
Quality control is one of the key factors considered before the implementation of any project	121	2.892	1.824
Project quality standards and requirements are well-defined and approved before completion of projects	121	2.843	1.972
Composite Mean		**3.390**	

The project team ensures that the county government normally plans for quality before the project is initiated. It was ranked high in this study, unlike in Osedo (2015) study, where this attribute was poorly ranked. This was possible due to the high risk in construction projects locally and the inefficient legal systems that make it costly to resolve issues, making it important to pre-empt risk. Usually for effective implementation of the projects, it is necessary to conduct a verification of quality in order to guide all the project inputs. This led to a binding arbitration, or out of court settlements, were the most widely used, and this was normal given the fact that they were less likely to result in delays and disruptions in technical specifications that may have resulted in high cost and time variance. Additionally, projects quality standards and requirements have not been well-defined and approved before the completion of projects that sped up the dispute resolution process.

Further, from Table 4, the percentages indicated a clustering around the column for 'agree'. All except two mean value clustered around the average of 4.00 (agree); the findings pointed out a need for quality control as one of the key factors considered before the implementation of any project. Low project quality control and lack of quality assurance may be consequences of what Martz *et al*. (2006) observed that project quality control is another important step in project quality management. Quality control entails inspecting and analyzing project outputs so as to determine whether these outputs meet pre-established standards (Goswami, 2015). Where it is found that the outputs fall short of the required standard, the quality control officer is expected to initiate corrective measures. In the construction setting, corrective measures may entail reworking some parts of the building. Unlike quality assurance that focuses on preventing defects, the goal of quality control is to identify and correct defects. It is a reactive approach to managing quality. However, it is a necessary step in quality management since it may not be possible for the project team to achieve 100% defect prevention.

Project Performance

This section presented findings in relation to how the different project parameters (scope, time, cost and quality) influenced performance of county funded construction projects as measured by stakeholder satisfaction, benefit realization and service delivery. This was presented in Table 5 with respect to cost variance; these indicated that most respondents disagreed or strongly disagreed with the statement that projects implemented are normally done within the planned scope. The respondents further strongly disagreed that risk management practices improved cost estimation. The observed scores reflected increasing

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disagreement with the corresponding statements that there is always a higher percentage in achieving the project milestones. This was demonstrated by the mean values for the impact of project parameters on cost variance, which clustered around a mean of 3.00.

The findings in light of the theory of constraints also led to the conclusion that the project parameters with high mean values are crucial for effective project completion. These also represented that project parameters that there was always a higher percentage in achieving the project milestones. Before the beginning of any project, all stakeholders must agree on the inputs and outputs of the projects. All projects delivered by the county government have not kept the stipulated hours of work and are normally not implemented within the planned scope.

Table 5: Project Performance

Statement	N	Mean	Std
Projects implemented are normally done within the planned scope	121	2.798	1.189
There is always a higher percentage in achieving the project milestones	121	2.644	1.234
Projects delivered normally satisfy our clients/customer	121	2.614	1.434
Before the beginning of any project, all stakeholders must agree on the inputs and outputs of the projects.	121	2.333	1.539
All projects delivered by the county government keep the stipulated hours of work	121	2.142	1.621
Composite Mean		**2.506**	

Inferential Analysis

The correlation analysis to determine the influence of scope management on performance of county funded construction projects shows a significant correlation existed ($r= 0.567$; $p<0.05$). This implied that scope management is positively correlated to the performance of county-funded construction projects.

In addition, the study sought to examine the relationship between time management and performance of county funded construction projects. A Pearson Correlation was performed and the result of the Pearson correlation test showed a correlation of ($r = 0.763$; $p<0.05$) between time management and project performance. This implied that time management is positively correlated to project performance.

Further, the study sought to establish the relationship between cost management and performance of county funded construction projects. A Pearson Correlation test was performed and the result of the Pearson correlation test as presented in table 6 shows a correlation ($r = 0.687$; $p<0.05$) between cost management and project performance. This implied that cost management is positively correlated to performance of county-funded construction projects.

Finally, the study sought to determine the relationship between quality management and performance of county funded construction projects. A Pearson Correlation test was performed and the result of the Pearson correlation test as presented in the table showed a correlation ($r = 0.541$; $p<0.05$) between quality management and performance of county-funded construction projects. This implied that quality management is positively correlated to the performance of county-funded construction projects.

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Table 6: Pearson Correlation Matrix

		SM	TM	CM	QM	PP
	Sig.(2-tailed)					
	N	121				
TM	Pearson Correlation	.353**	1			
	Sig.(2-tailed)	.000				
	N	121	121			
CM	Pearson Correlation	.489**	.328**	1		
	Sig.(2-tailed)	.000	.007			
	N	121	121	121		
QM	Pearson Correlation	.301**	.298**	.323**	1	
	Sig.(2-tailed)	.005	.012	.004		
	N	121	121	121	121	
PP	Pearson Correlation	.567**	.763**	.687**	.541**	1
	Sig.(2-tailed)	.003	.000	.001	.005	

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

Key: SM = Scope Management; TM = Time Management; CM = Cost Management; QM= Quality Management; PP = Project Performance

Coefficient of Determination (R^2)

Table 7 on the model summary, coefficient of determination(R) showed the relationship between the project parameters (scope, time, cost and quality) and dependent variable (project performance). From the study findings it was notable that there exists a strong positive relationship between the project parameters and project performance as shown by R value (0.899). The study results implied that project parameters jointly accounted for 80.80% of the performance of county funded construction projects as represented by the R^2. This therefore means that other factors not studied in this research contribute 19.20% to the performance of county-funded construction projects. This implied that these variables were very significant and need to be factored to improve the performance of county-funded construction projects.

Table 7: Model Summary (Overall)

					Change Statistics				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**R Square Change**	**F Change**	**df1**	**df2**	**Sig. F Change**
1	.899a	.808	.782	.032	.322	122.096	4	116	.000

a. Predictors: (Constant), Scope management, Time management, Cost management, Quality management

Analysis of Variance (ANOVA)

Further, the analysis of variance was used to examine whether the regression model was a good fit for the data. It also gives the F-test statistics; the linear regression's F-test has the null hypothesis that there is no linear relationship between the two variables. The F-critical (4, 116) was 12.345 while the F-calculated was 122.096 as shown in Table 8. This showed that F-calculated was greater than the F-critical and hence a linear relationship between

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the project parameters and project performance. In addition, the p-value was 0.000, which was less than the significance level (0.05). Therefore, the model can be considered to be a good fit for the data, and hence it is appropriate in predicting the influence of the four independent variables (project parameters) on the dependent variable (Project performance).

Table 8: ANOVA

Model		Sum of Squares	d.f	Mean Square	F	Sig.
1	Regression	55.678	4	13.919	122.096	.000
	Residual	13.230	116	.1140		
	Total	68.908	120			

a. Dependent Variable: Project Performance

b. Predictors: (Constant), Scope management, Time management, Cost management, Quality management

NB: F-critical Value = 13.876;

Multiple Regression Analysis

Further, the study ran the procedure of obtaining the regression coefficients, and the results were as shown on the Table 9. The coefficients or beta weights for each variable allows the researcher to relative importance comparatively of the project parameter. In this study the unstandardized coefficients and standardized coefficients were given for the multiple regression equations. However, discussions were based on the unstandardized coefficients.

Table 9: Multiple Regression Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	T	P-value.
		B	Std. Error	B		
1	(Constant)	8.765	0.987		8.880	.000
	Scope Management	0.613	0.199	.456	3.080	.003
	Time Management.	0.767	0.208	.643	3.687	.000
	Cost Management.	0.736	0.211	.602	3.348	.002
	Quality Management.	0.543	0.267	.406	2.034	.004

a. Dependent Variable: Project Performance

The Multiple regression models equation would be ($\mathbf{Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon}$) becomes: $Y= 8.765+ 0.613X_1+ 0.767X_2 + 0.736X_3 + 0.543X_4$. This indicates that Performance of county funded construction projects = 8.765 + 0.613 (Scope Management) + 0.767 (Time Management) + 0.767 (Cost Management) + 0.543 (Quality Management). According to the regression equation established, taking all factors into account (project parameters) constant at zero, performance of county funded construction projects was 8.765.

Findings in Table 9 showed that scope management had coefficients of estimate which was significant basing on $\beta_1 = 0.613$ (p-value = 0.003 which is less than $\alpha = 0.05$). Also, the effect of scope management is more than the effect attributed to the error, this is shown by the t-test value = 3.080, thus we conclude that there is a significant relationship between scope management and performance of county-funded construction projects. The null hypothesis that scope management does not significantly influence performance of county-funded construction projects in Mombasa, Kenya is therefore rejected ($P<0.05$). Thus, scope management is used as a response to the performance of county-funded construction projects.

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In addition, the findings in indicated that time management had coefficients of estimate which was significant basing on $\beta_1 = 0.767$ (p-value = 0.000 which is less than $\alpha = 0.05$). Also, the effect of time management is more than the effect attributed to the error, this is indicated by the t-test value = 3.687, thus we conclude that there is a significant relationship between time management and performance of county-funded construction projects. The null hypothesis that time management does not significantly influence performance of county-funded construction projects in Mombasa, Kenya is therefore rejected (P<0.05). Thus, time management is used as a response to performance of county-funded construction projects. The null hypothesis that time management does not significantly influence performance of county-funded construction projects in Mombasa, Kenya is therefore rejected (P<0.05). Thus, time management is used as a response to the performance of county-funded construction projects.

Furthermore, the findings indicated that cost management had coefficients of estimate which was significant basing on $\beta_1 = 0.736$ (p-value = 0.002 which is less than $\alpha = 0.05$). Also, the effect of board independence is more than the effect attributed to the error, this is indicated by the t-test value = 3.687, thus we conclude that there is a significant relationship between cost management and performance of county-funded construction projects. The null hypothesis that cost management does not significantly influence performance of county-funded construction projects in Mombasa, Kenya is therefore rejected (P<0.05). Thus, cost management is used as a response to the performance of county-funded construction projects.

The findings indicated that quality management had coefficients of estimate which was significant basing on $\beta_1 = 0.543$(p-value = 0.004 which is less than $\alpha = 0.05$). Also, the influence of quality management is more than the effect attributed to the error, this is indicated by the t-test value = 2.034, thus we conclude that there is a significant relationship between quality management and performance of county-funded construction projects. The null hypothesis that quality management does not significantly influence performance of county-funded construction projects in Mombasa, Kenya is therefore rejected (P<0.05). Thus, quality management is used as a response to the performance of county-funded construction projects.

Table 10: Summary of Regression Coefficient and Test of Hypothesis

Model		Standardized Coefficients Beta	T	Sig	Deductions
1	(Constant)		8.880		
	Scope management	.456	3.080	.003	Reject H_{O1}
	Time management	.643	3.687	.000	Reject H_{O2}
	Cost management	.602	3.348	.002	Reject H_{O3}
	Quality Management	.406	2.034	.004	Reject H_{O4}

a. Dependent Variable: Project Performance

CONCLUSION AND RECOMMENDATIONS

The findings confirmed that statistically scope management significantly influenced performance of county funded construction projects in Mombasa, Kenya. From the study results, it was concluded that county-funded construction projects in Mombasa lacked adequate scope planning, scope control which leads to scope creep as evidenced by the descriptive statistics. Furthermore, it can be explained by the fact that, although county-funded construction projects have conducted scope management, they fail to use the same to improve their project parameters (time, cost, scope and quality) in the projects being implemented.

Secondly, the study concluded that time management significantly influenced performance

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of county-funded construction projects in Mombasa, Kenya. Therefore, time management does significantly predict the performance of county-funded construction projects in Mombasa, Kenya. This is explained by the descriptive results which revealed that county-funded construction projects in Mombasa, Kenya are concerned about the definition of project activities, estimation of activity duration and sequencing of activities and tasks.

On cost management from the results, it can be summarized that it does significantly influence the performance of county-funded construction projects in Mombasa, Kenya. This is explained by the fact that the county-funded construction projects in Mombasa, Kenya are aware of cost management issues that may pose project risks. For example, lack of cost budgeting and estimation can pose a major risk to the project's completion, yet the majority of the projects being implemented have not enhanced cost control. This is because project managers are able to respond to the increasing cost control, and this improves their performance

Further, the findings of this study confirmed that quality management significantly influences the performance of county-funded construction projects in Mombasa, Kenya. It was possible to infer from the study findings that the relationship between quality management and the performance of county-funded construction projects in Mombasa, Kenya was positive and significant. We can therefore conclude that as quality management increases, the performance of county-funded construction projects in Mombasa, Kenya increases. This is true because, 76 results from the manufacturing firms' demographics indicated that the majority (35%) of the county funded projects in Mombasa intended to have quality planning, continuous improvement and control.

All the independent variables (project parameters) are significant predictors of the performance of county-funded construction projects in Mombasa, Kenya. This can be explained by the proper involvement of the project practitioners in the development of county funded construction projects. This can result in project implementation decisions being made which significantly impacts the performance of the county funded construction projects.

The study established that scope management significantly influenced performance of county funded construction projects. The study recommended county government need to manage project parameters in the projects to improve performance of county funded construction projects. The study also recommends for enhancement of scope control, planning and creep in the projects. The projects should be improved in terms of scope changes to avoid cost plus time overruns. This is due to scope control being one of the key factors that was not considered before the implementation of any project. There should be a clear scope plan which should be shared with the project team before projects are being implemented.

In addition, the study recommended that there is need to adhere to the definition of activities before any project takes off. Sequencing of activities should be normally conducted for all the projects and activities so that they are performed in an order of priority. The activity duration of every task and activity resources estimation should be a key item in the schedule of activities of the project. The scheduling and control need to be considered a key activity to ascertain variations between planned versus actual to improve performance of the county funded projects.

Furthermore, the study recommended the county government should cost plan before every project begins. Determination of the required budget should be considered mandatory before any project is initiated in the county. There was a department set aside to ensure that project costs were controlled. Financing of projects should be secured before the beginning of every project to avoid collapsing of projects prematurely.

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The study findings indicated that quality management influenced performance of county funded construction projects in Mombasa, Kenya. The county government should go to some extent to plan for quality before any project is initiated. There should be continuous quality verification in all the inputs in the projects conducted by the county government. There should be continuous quality improvement and control to ensure standards and requirements are well-defined and approved before the completion of projects to enhance the desired end product of the project.

Areas of Further Research

The study limited itself to the four projects parameter, namely, scope management, time management, scope management and quality management, from the literature that affect, the performance of county-funded construction projects in Kenya. This meant that the empirical review that supports project parameters among the county funded construction projects in Mombasa was only limited to these four variables identified in the study. Therefore, similar study should be conducted with other variables that affect the project parameters and the performance of the other projects in different sectors. This study was also conducted in Mombasa County in Kenya, and data was collected in those County projects only. This study recommends that a similar study should be conducted in other counties in Kenya in order to come up with a variety of outcomes.

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