

# Project Resource Planning and Performance of Sports Stadia Construction Projects In Kenya with the Moderating Effect of Government Policy

John Kimotho, Dr. Samson Nyang'au, Dr. Muchelule Yusuf

**Abstract**— The government in the Vision 2030 plan in 2008 sought to undertake a number of programs to promote sports development as a source of employment for the youth. Part of the goals to achieve these objectives was building of sports stadia in all counties in the country as well as upgrading the existing sports facilities at the county levels. Despite billions of funds released the country is still struggling to complete the sports stadia and lacks stadium which meet the required international standards. The main objective of the study was to examine the effect of Project Resource planning on performance of sports stadia projects in Kenya with the moderating effect of Government policy. Specifically, the study examines the effect of resource planning, and the moderating effect of government policy on performance of sports stadia projects in Kenya. The study targeted 17 sports stadia where 255 respondents formed the unit of observation. The study was guided by the theory or constraints and program theory. The study found that project resource planning has a significant positive relationship with performance of sports stadia projects in Kenya ( $r = .952$ ,  $p = .000$ ). the study also found project resource planning significantly influences performance of sports stadia projects ( $\beta = .634$ ,  $p = .000$ ) and also influenced performance of sports stadia construction projects by 62.9%. The study also found that Government policy has a negative significant moderating effect on the relationship between project resource planning and performance of sports stadia projects in Kenya ( $\beta = -.109$ ,  $p = .000$ ). The study concluded that project resource planning significantly influences performance of sports stadia projects while Government policy a negative significant moderating effect on the relationship between project resource planning and performance of sports stadia projects in Kenya. The study recommended using the well-developed methods and tools for resource planning. Project managers should use the right planning tools resources to help minimize time as well as over utilization of resources that may be costly and negatively impact the performance of projects. The study also recommends that the government ensures that there is full conformance on the approvals of projects, adherence to safety and health standards as well ensure the construction of the projects are accordance to environmental factors.

**Index Terms**— Project Cost Management, Government Policy, Project Resource Planning, Project Performance

## I. INTRODUCTION

Africa is a continent of opportunities, dynamic

John Kimotho, PhD Scholar in Project Management, College of Human Resource and Development, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya

Dr. Samson Nyang'au,, Lecturer, College of Human Resource and Development, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya

Dr. Muchelule Yusuf, Lecturer, College of Human Resource and Development, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya

development and youth. Half of the 1.2 billion residents of Africa are under the age of 25. With regard to the Sport for Development in Africa (S4DA) project, the first phase of the project between 2014 and 2019 recorded a total of 130 grassroots sports grounds that were built or rehabilitated in 12 countries, benefiting more than 651,000 children and young people. 90 per cent of the organizations running the sports facilities have a booking plan that promotes the sustainable use of the grounds [1] (International Trade Administration, 2020). In 2018, there were over 2 million sports venues in China. So far this year, the China National Development and Reform Commission (NDRC) has invested \$450 million in public sports projects. There is strong demand for green and smart sports facilities as significant government investment is flowing into the sector, while existing facilities face problems such as operational inefficiencies, inadequate service provision and low utilization levels. Most stadiums are government-owned with a low level of commercialization. Many existing large-scale sports facilities are outdated and in urgent need of upgrading. In progress currently, is the project called “sports city” by 2025 an indication of the value China has placed on infrastructural development especially in the sports sector [1].

The Wembley stadium in England constructed at a cost of £789 m which is currently valued at £1.2 billion is one of the most expensive stadiums having been initially budgeted £362.5m. Marred with delays, litigations, and obstacles the stadium was eventually opened in 2007. The Wembley stadium is considered a badly implemented project with a good outcome. The delay in implementation of the project and increased in project cost was due to underestimation of the project scope by a subcontractor, violation of safety and health laws, and a subcontractor pulling out of the project. A dispute between Multiplex and Cleveland Bridge engineering company about the rising costs of constructing the arch of the stadium which resulted to Cleveland Bridge pulling out of the project. Multiplex engineering in an attempt to complete the project was overcome with challenges which made them to avoid paying the subcontractors dealing with the sewage system. However, the project was eventually successful and the FA finally broke even in 2015 and after 15 years it recoups its initial investment [2].

According to Parliamentary Committee on sports [3], stadium projects had an estimated cost of Ksh 4.4 billion whereas the project expenditure as at 2020 was 2.6 b and outstanding of Kshs 1.8b. The project commenced in July 2016 and the expected completion time was in 2019. The government in the Vision 2030 plan in 2008 sought to

# Project Resource Planning and Performance of Sports Stadia Construction Projects In Kenya with the Moderating Effect of Government Policy

undertake a number of programs to promote sports development as a source of employment for the youth. The Kenyan government in the financial year 2015/2016 set a side US\$18.3 million for the construction of 3 major stadiums in Eldoret, Mombasa and Nairobi as part of the preparations to bid for hosting of 2017 IAAF world youth championship in Nairobi. In Gatundu, Karatu Stadium stalled for some time having commenced in January 2017 and restarted in 2020 with the completion date expected to be July 2020 though, by September 2020 on 20% of the had been completed. About 40% of the funds had been paid and only 20% of the work done. The Kenyatta Stadium in Machakos county was marked for reconstruction and refurbishment. By September 2020 the project had not commenced as the county government had proposed the stadium be constructed in a different site though the budget allocated was only meant for upgrading the stadium

Resource Planning is that process of determining the resources required to deliver a project, in order to allocate them and schedule the project work based on the capacity of the team [4]. It is important to the project leader as it helps in identifying the needs of the project team against what is available in order to be more strategic in time and also to help in making better decisions in planning. A resource plan is thus, is crucial in determining the well-being of the team and the number of people to hire. Resource planning involve two processes that help in planning of the resource which include resource utilization and resource allocation. The methods used in resource planning include resource smoothing and resource leveling.

## II. RESEARCH PROBLEM

Driven by the Vision 2030 plan, the Government of Kenya desired to promote sports development as a source of employment for the youth. Part of the goals to achieve these objectives was building of sports stadia in all counties in the country as well as upgrading the existing sports facilities at the county levels [5]. New sports stadia were to be built in Kisumu, Mombasa, Nakuru, Eldoret and Garissa. In 2015/2016 financial year US\$18.3 million was set aside for the construction of 3 major stadiums in Eldoret, Mombasa and Nairobi. The government also promised establishment of 30 regional stadia around the country to promote the development of sports within each of the regions as well as tap the immense talent of the youth areas [5]. The project commenced in July 2016 and was expected to be completed in 2019. The estimated cost for the projects as explained by the Parliamentary committee on sports was Ksh 4.4 billion where Ksh 2.6 billion had been disbursed by 2020 yet most of the projects were challenged resulting to delay in completion and implementation. The challenges were due to issues in allocating resources from the national treasury, unsettled agreements between stakeholders, land issues, and general fund issues.

The parliamentary committee complained of mismatch between the funds released against the work done in various stadia including Wote stadium in Makueni county, Kirubia Stadium in Meru County, Karatu stadium in Gatundu (20% completed, 40% of funds utilized). Kenyatta stadium in

Machakos county had not commenced as at September 2020 due to budgetary allocation issues as the budget allocated was only meant for upgrading not reconstruction [3]. Many of the projects are still ongoing despite 59% of the budget cost paid while the status of the projects indicated 49.5% completed. Further, there was high risks of variations needed for the projects to be completed as well as a variance between the work done and the payment made. In Mombasa County the upgrading of the Mombasa stadium (Kshs 1.7b) has stalled. There are cost overruns on the sports stadia projects due delays (Mombasa Stadium, Homabay stadium) mostly attributed to inflation costs, budgeting errors, variations in scope of works, exchange rate, cost of equipment and tools, design changes, rework cost, and other risks such as Covid-19[6]. Thus, the country lacks sports stadia that are in required international standards with only two notable stadia used in Kenya i.e. Nyayo stadium and Moi stadium that both have to be upgraded to meet those required standards.

## III. RESEARCH OBJECTIVES

- 1) To explore the effect of Project Resource Planning on Performance of Sports Stadia Construction Projects in Kenya.
- 2) To establish the moderating effect of Government Policy on Project Resource Planning Management and Performance of Sports Stadia Construction Projects in Kenya.

## IV. LITERATURE REVIEW

The section covers theoretical review and the empirical review.

### A. THEORETICAL REVIEW

This study was guided by the theory of constraints and Program Theory.

#### 1) Program Theory

The program theory proposed by [7]. The theory explains how a project is perceived to a chain of results that are meant to produce an impact which can be negative or positive. [8] argued that it contributes to evaluation practice through the identification of key program elements as well as providing information on how these elements relate to each other. Data collection plans are then involved in the framework to ensure information to measure the extent and nature of each aspect and their occurrence. Once the data on the elements is collected, it is analyzed within the framework. Program theory is a plausible and sensible model on how a program is supposed to work [9]. [10] stated that it is a proposition with regard to the transformation on input into output and how to transform a bad situation into a better one through inputs. It is also illustrated as the process through which program components are presumed to affect outcomes.

[9] argued that a program theory consists of an organizational plan on how to deploy resources and organize the activities of the program activities to ensure that the intended service system is developed and maintained. The theory further deals with the service utilization's plan which analyses how the intended target population receives the intended amount of intervention. This is through the interaction of the service delivery systems. Finally, program theory looks at how the intended intervention of cost

management for the specified projects can be implemented to achieve the desired social benefits.[9] illustrates the advantages of using a theory-based framework in cost estimation. It includes the ability of the project manager to estimate the cost to attribute project outcomes of specific projects or activities as well as identification of anticipated and undesired program consequences. Theory based evaluations as such enables the evaluator to understand why and how the program is working [10].

Stadia construction projects are encountered with serious risks in the completion of the project. One of these risks is the inaccuracy of cost estimate; the project is carried out under conditions of uncertainty; it is whether the over or underestimate of construction works. Cost estimation and budgeting are essential tools for planning in the construction industry and play a central role in both preconstruction and construction phases of a project. Best practices dictate a total project budget should be developed as early as possible in a project. Hence, it arises the need to set out a cost estimating model in line with major studies made locally and internationally in terms of estimating methods and a common relationship between various expenses so that the cost estimate would be more realistic. It on this basis the current study seeks adopted program theory to establish the influence of Project resource planning, Government Policy, Project Cost Control, and performance of Sport Stadia projects, Kenya.

## 2) Theory of Constraints

The Theory of Constraints (TOC) was introduced by Eliyahu Goldratt in 1984 as a management [11] philosophy [12]. TOC asserts that every complex system and processes, are made up of interrelated activities and one among the activities might pose a constraint to the entire system, which becomes the weakest link in the chain [13]. According to [11] in order to ensure that the main goal of a project is achieved, various stages have to be followed. They include identification of constraints, exploring the constraints, channel resources to the constraints and finally make changes to increase constraints capacity [11]. The theory of constraints is based on the assumption of system thinking and constraint management. [11] further stated that the analytic approach with TOC comes from the contention that any manageable system is limited in achieving more of its goals by a minimal number of constraints and that there is always at least one constraint. TOC process seeks to identify the constraint and restructure the project management process around it. The secret to the implementation success is in management of these constraints and the system as it interacts with constraints to achieve efficiency of the system.

Constraints in a multi-party working situation which is necessary for construction projects bring complications in project management [14] and therefore for effective project management, constraints have to be managed. During project execution, procedures for project control and record keeping become indispensable tools to managers and other participants in the construction process. Theory of constraints proposes a methodology to detect and limit or eliminate the influence posed by a constraint to a goal. The five steps model include: constraint identification, decision on constraint exploitation, subordinate everything else, constraint

elimination and back to constraint identification [13]. Poor estimation of cost, time and related resources negatively affects project success. Thus, an effective project estimation tool to undertake prediction is required, for instance poor estimation in infrastructural construction project can cause delays, emerging from project complexity, construction and technology methods used and related resources inefficiency [15]

According to [16], cost control can be achieved by selecting the right man for the right job, the right equipment and tools for the right work and the right quality of materials, in the right quantity, from the right source, at the right price and delivered at the right time. Managers are expected to be well equipped to execute the project, with due consideration to the quality of work, yet within the estimated cost and limits. Delays in project completion are a common problem in the construction industry not only with an immeasurable cost to society but also with debilitating effects on the contracting parties [17]. Other factors which measure project performance include cost and quality requirements Cost controlling and monitoring of projects occurs when you establish ways to track the course of all activities and events in the project.

However, critiques to this theory have highlighted a major challenge, whereby one might be working to reduce the effect of a constraint or to eliminate it only to find that it was caused by another constraining factor or the constraint is not directly related to the existing problem. This might lead to resource wastage on factors that do not contribute towards project success. It has also been criticized for its focus on short-term goals as opposed to long term goals, in that it only evaluates what is happening currently [11].

In this study the theory of constraints will be applied on the constraint of cost. Project cost management as a process entails other process such as plan cost management, estimate cost, determine budget, control cost, and resource planning. The processes interact with each other and one process has an effect to the other. Since Sports Stadia projects the process of cost management is crucial it important for the project manager to balance the process to ensure effective cost management. Thus, the TOC was useful in explain how Government Policy, and resource planning and their relationship with implementation of Sports Stadia Project in Kenya.

## V. CONCEPTUAL FRAMEWORK

The following conceptual framework was used for this study

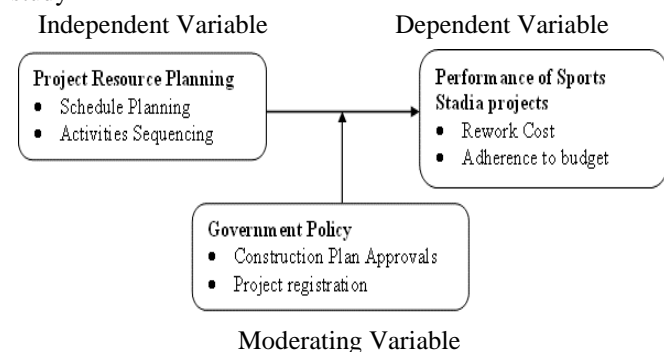


Fig 1: Conceptual Framework

# Project Resource Planning and Performance of Sports Stadia Construction Projects In Kenya with the Moderating Effect of Government Policy

## a) *Project Resource Planning*

Resource Planning is that process of determining the resources required to deliver a project, in order to allocate them and schedule the project work based on the capacity of the team [4]. It is important to the project leader as it helps in identifying the needs of the project team against what is available in order to be more strategic in time and also to help in making better decisions in planning. A resource plan is thus, is crucial in determining the well-being of the team and the number of people to hire. Resource planning involve two processes that help in planning of the resource which include resource utilization and resource allocation. The methods used in resource planning include resource smoothing and resource levelling [18].

Resource planning is the process where tasks are allocated to project team members based on their skill sets, capacity, and best fit for the job. Resource planning is used in determining and identification of an approach that will ensure resources are available for effective successful project completion [19]. Effective resource planning should put into consideration and plan for the availability of scarce resources [18]. Resource planning helps project teams monitor progress, track capacity, and keeping projects on budget. Successful Project cost management is highly dependent on planning processes such as resource allocation and scope management that should be effectively done [20].

Without the right resources the project management plan just becomes a mere document with no value and thus unable to deliver products. Project resource management is that process of utilizing resources in achieving project objectives and goals. A project manager must develop a good human resource plan to help in guiding the process of managing the human resources in identification of roles, responsibilities, skills, and reporting relationships [18]. The use of planning tool resources by project manager helps in minimizing time and over utilization of resources which may lead to costly and negative impacts to project success. The work Breakdown Structure (WBS) is one of the recognized planning tools used for estimating resource requirements, total project budget, and work schedule [21]. However, failure to capture what is in and out of scope results in unnecessary work which results to cost overrun and schedule. Effective use of WBS as a planning tool is helpful to project manager in identifying the tasks and resources that are required to complete the projects within budget [21]. In a multi-project work, it can be extremely stressful for the project team and the project manager in planning the projects. Problems arise when allocating the human resources to projects that affect project leaders, resource owners, and the project team members.

## b) *Government Policy*

Building and construction regulations are the statutory requirements that ensure the legislative building and construction policies are implemented under the various statutory bodies mandate to oversee the construction industry (Ochola, Cheruiyot, & Winja, 2022)[22]. According to the Architect and Quantity Surveyors Act (2010) the building regulations necessitates identification of the factors that

contribute, enhance, and determine the regulatory processes of the construction procedures as well as the standards and guidelines required in the construction industry to ensure sustainability in the industry. The factors are related to social, physical, and economic related issues touching the construction industry [22]. The approval of construction projects is a requirement globally. In Kenya, the Nation Construction Authority (NCA) is mandated by law to oversee the construction industry as well as maintain its development. The officers from NCA visit construction sites for regular inspection to ensure conformance to NCA regulations of 2014. NCA issues a project compliance certificate to project owners or developers. The registration also ensures that project team members are registered by the relevant bodies e.g. Board of registration of architects and Quantity surveyors (BORAQS) and the Engineers Board of Kenya (EBK).

NEMA is mandated to implement government environment related policies. There has been failure in implementation of the environmental policies and oversight of large projects that have potential contribution to serious environmental impacts. The limited oversight is mainly due to insufficient funding issues, duplication of regulations, lack of stakeholder engagement, and extensive misunderstanding of environmental projects [22]. In Kenya, most construction projects experience cost overrun and time with about 70% compliance with environmental regulations and the bureaucratic procedures have led to influence on the cost and time for completing the projects [23]. According to [24] in Pakistan, raising the construction standards in terms of safety, environmental protection and planning ensured development of better project though they it very costly. According to [25] in Ghana, about 50% of the construction projects had never obtained environmental approval. Despite the environmental being important for the environmental sustainability worldwide, the regulations have negatively affected performance of construction projects as the bureaucracy in obtaining the approvals had led to increase in delivery time and even sometimes stalling of projects due to longer times taken to get the approvals [23]. A payment of 0.1% of the project cost is or a minimum of Ksh 10,000 is paid with submission is Environmental Impact Assessment reports [26].

NCA is mandated to ensure standardization as well as improvement of construction materials and also accrediting and regulating construction professionals. According to NCA audit report of 2021, the major causes of building collapses in Kenya is due to poor workmanship as most construction projects are not approved and hence, they do not adhere to various standards that have been legislated [26]. The regulatory framework has an impact on the market outcomes and competition. According to the NCA Act No. 41 of 2011 obligates contractors both local and foreign contractors have to pay fees between KSh 100,000 to Ksh 300,000 for their firms. Thus, the local firms have a competitive advantage over the foreigners and which translates to higher operation costs. The foreign firms thus, have higher quotations in tenders in order to factor the cost of fees paid [26].

## c) *Performance of Projects*

The project life cycle beginnings from initiation to till the

completion stage. All the stages have objectives that have to be met and it's upon these objectives that project performance is measured. According to [18], [27], and the [28] the measure of performance is based on budget, scope, time, and quality and the projects aims to ensure those measures satisfied [29]. Other group scholar believed that the triple constraints isn't a measure of project performance but rather an approach of project to measure efficiency of the project and the project management process. They argued that the measure of project performance is based on the outcomes or the desired objectives, benefits, and meeting business needs [30], [31]. Completion of projects within schedule is a major contribution towards the competitive edge in organizations [31]. This is based on the realization that the achievement of the targeted objectives is determined by the ability to deliver the targeted output within the stipulated time. Success or failure is not an absolute or black and white concept. Projects may be viewed as successful to varying degrees, depending on which success criteria are met [32]. According to [33] the most familiar successful criteria are meeting performance, completion on time, and project costs within budget. However, additional criteria-based industries include: reliability, sustainability, safety, benefits to the business, and long-term performance. Success criteria can be subjective depending on the view of the observer.

## VI. EMPIRICAL REVIEW

### A. Project Resource Planning and the Performance of Projects

[34] in a study on "Flexible resource management and its effect on project cost and duration" presented a new approach to ever changing project resource allocation and project management practices. From the study, close to 94% of resource allocation problems can be formulated mathematically as an optimization problem, with an aim to minimize total project duration whereas reducing any project resource wastage while ensuring the project deliverability and acceptability by the project beneficiaries, subject to a set of resource constraints. Similar in study done by [35] "Time and Resource Management in Construction Projects using MS Project" indicated that materials and labors are like a charge bond. That the two resources are most crucial resources for the any project. with an extra than 70% of the task relies upon these resources which might be well utilized.

[36] examined the influence of project planning on implementation of infrastructure projects in public hospitals in Nairobi County Kenya. The study conducted a census where 140 respondents comprising of supervisors, engineers, and contractors were targeted. The study found a positive significant correlation between Project resource planning and implementation of infrastructure projects in public hospitals in Nairobi County. The also found that project resource planning to have a significant positive influence on implementation of projects in public hospitals. [37] studied factors influencing the practice of resource planning and levelling in the Kenyan construction industry. A survey research design was adopted where 106 respondents who are NCA 1-3 contractors were targeted. The study concluded that in Kenyan construction industry there is about 76% usage of

resource planning and levelling which is a high level. The study found that a high degree of resource planning had a negative impact on construction project progress.

### B. Government Policy and the Performance of Projects

[22] in a study on the impact of regulatory framework on performance of building construction process in Murang'a County in Kenya. A sample of 158 respondents comprising of officers in the regulatory boards of NEMA, EBK, BORAQS, and NCA. The study found that the regulatory bodies significantly influence building and construction projects performance in Murang'a County. the study found the County governments give construction and occupation licenses to enhance approval compliance.

[38] examined the influence of the moderating effect of government regulations on performance of government construction projects in Kenya. The unit of analysis was government construction projects and the unit of observation 728 registered project managers where a sample of 251 was drawn. The study found that there is a significant positive relationship between the moderating effect of government regulations and performance of government construction project in Kenya. Despite have government agencies such as NEMA they still lack the capacity oversee construction project in Kenya. Instead, they have result in delays and failed projects that have collapsed due to flout government regulations.

## VII. RESEARCH METHODOLOGY

The study employed positivism research philosophy. This is because the current unit of analysis and observation in the current study are measurable, quantitative and numerable. A cross-sectional survey design targeting sports stadia in Kenya was also adopted. The study targeted the 17 stadia as the unit of analysis and the unit of observation will be the project consultants & project managers (34), county project administrators (34), Sub-contractors (119) and Sports Kenya and County representatives (34), Ministry of Public works (34). The 17 sports stadia projects in 14 counties (Mombasa, Kiambu, Makeni, Meru, Tharaka Nithi, Nairobi, Machakos, Homabay, Kisumu, Nyeri, Marsabit, Uasin Gishu, Elgeyo Marakwet and Migori) where a total of 5 sports stadia are still under construction, including Kamarany Stadium, Marsabit Stadium, Ruring'u Stadium, Karatu Stadium and Wote Stadium [3],[5]. Therefore, from the targeted 17 sports stadia projects, the unit of observation was 255 respondents involved in the sports stadia construction projects as mentioned above. The study used a census survey to study all the 17 sports stadia projects. Primary data was collected using self-administered semi-structured questionnaires. The questionnaires were distributed to the project consultants & project managers.

## VIII. RESEARCH FINDINGS

The study conducted both descriptive and inferential analysis.

### A. Descriptive Analysis

#### 1) Project Resource Planning

The first specific objective was to explore the effect of Project Resource Planning on the successful implementation of sports

## Project Resource Planning and Performance of Sports Stadia Construction Projects In Kenya with the Moderating Effect of Government Policy

stadia in Kenya. Table I below shows the descriptive statistics for the responses. The Compositd mean of 3.50 suggested that respondents slightly agreed that Project Resource Planning in Project cost Management influence performance of Sports Stadia construction projects in Kenya. The standard deviation of 1.193 further suggested that there were no much variations in the responses on the Project Resource Planning. Cost planning is an essential part of the project management process where project managers need to know where the costs fall in their schedule to manage demand of resources. All the resources that consume costs will include a resource optimized schedule which is essential in cost planning to help develop a picture of planned cost [28]

Cost planning is a management process that seeks to control design development in line with the client's budget by helping the client to decide on how to allocate the budget in the project. Cost planning aims at ensuring the client obtains an efficient and economical design in accordance with the agreed budget. Cost planning occurs throughout the design development phase of a project. Where design and construction overlap, cost planning might run into the construction phase of a project. On design and build projects it is a tool that can be used by the contractor to control design development against the contract sum [39]

**Table I: Project Resource planning**

Project Planning	Resource	SD %	D %	N %	A %	SA %	M
Project budgeting is based on the availability of database of bids on similar projects (historical data)		9.9	18.5	19.8	21.6	30.2	3.44
The project cost budgeting is based on experience of pricing construction projects		9.9	11.2	28.4	28.9	21.6	3.41
Estimating cost of activity depends on the time taken for the activity to be completed		9.9	18.5	29.7	21.6	20.3	3.24
Estimating cost of activity depends on the material availability		1.3	19.8	21.6	28.9	28.4	3.63
Cost planning a distributed technique is implemented to come up with the project team proposals on how the available budget is distributed among the elements of the projects.		8.6	19.8	19.8	30.2	21.6	3.36
Cost plans are reviewed and approved to ensure the project is affordable.		9.9	28.4	19.8	21.6	20.3	3.14
Reviewing and approving of cost plans helps ensure the cost limit is not exceeded.		1.3	12.9	19.8	37.5	28.4	3.79
The base cost estimate is added with risk and		0	9.9	19.8	31.5	38.8	3.99

inflation estimate to determine the cost limit of the project.

**Composite Mean**

**3.50**

Majority of the respondents (51.8%) agreed that project budgeting was based on the availability of database of bids on similar projects (historical data) while 27.4% had contrary opinion (M = 3.44, SD = 1.350). A majority of 50.5% of the respondents agreed that the project cost budgeting was based on experience of pricing construction projects. On the contrary 21.1% had different opinion while 28.4% were neutral on the statement (M = 3.41, SD = 1.224). The respondents (41.9%) agreed that estimating cost of activity depended on the time taken for the activity to be completed while 27.4% had contrary opinion. Only 29.7% were neutral on the statement (M = 3.24, SD = 1.224). Similarly, estimating cost of activity depended on the material availability as agreed by a majority of 57.3% while 21.1% disagreed. Only 21.6% were undecided (M = 3.63, SD = 1.132). Respondents (51.8%) agreed that Cost planning a distributed technique was implemented to come up with the project team proposals on how the available budget is distributed among the elements of the projects. On the same, 28.4% disagreed while 19.8% were neutral (M = 3.36, SD = 1.258). On whether cost plans were reviewed and approved to ensure the project is affordable, the respondents 41.9% agreed while 38.3% disagreed with 19.8% undecided (M = 3.14, SD = 1.302). Similarly, majority of the respondents (65.9%) agreed that reviewing and approving of cost plans helps ensure the cost limit was not exceeded while 14.2% disagreed (M = 3.79, SD = 1.038). Finally, a majority of 70.3% agreed that the base cost estimate was added with risk and inflation estimate to determine the cost limit of the project. only 9.9% disagreed while 19.8% were neutral (M = 3.99, SD = .993).

### 2) Government Policy

The second objective of the study was to establish the moderating effect of Government Policy on Project Resource Planning and performance of sports stadia construction projects in Kenya. The statistics from Table II below show that the composite Mean of 3.54 and standard deviation of 1.228 suggested that to some extent Government Policy has a moderating influence on project cost management and successful implementation of sports stadia projects in Kenya. Building and construction regulations are the statutory requirements that ensure the legislative building and construction policies are implemented under the various statutory bodies mandate to oversee the construction industry [22]. According to the Architect and Quantity Surveyors Act (2010) the building regulations necessitates identification of the factors that contribute, enhance, and determine the regulatory processes of the construction procedures as well as the standards and guidelines required in the construction industry to ensure sustainability in the industry. The factors are related to social, physical, and economic related issues touching the construction industry [22]. The approval of construction projects is a requirement globally. In Kenya, the Nation Construction Authority (NCA) is mandated by law to oversee the construction industry as well as maintain its

development. The officers from NCA visit construction sites for regular inspection to ensure conformance to NCA regulations of 2014. NCA issues a project compliance certificate to project owners or developers. The registration also ensures that project team members are registered by the relevant bodies e.g. Board of registration of architects and Quantity surveyors (BORAQS) and the Engineers Board of Kenya (EBK).

**Table II: Government Policy**

Government Policy	SD %	D %	N %	A %	SA %	M
The approval of the development application has a big influence on the performance of construction projects.	18.5	8.6	9.9	38.8	24.1	3.41
The cost related to approval of physical plans by the various county governments and other government agencies affect the overall cost of the projects.	19.8	9.9	18.5	31.5	20.3	3.22
Safety audits by the public health are conducted periodically and they may result to acting on the project which may lead to delays and cost issues.	11.2	18.5	19.8	12.9	37.5	3.47
The safety and health approvals at the construction sites are the major causes of delays since it's almost impossible to comply with.	1.3	19.8	28.4	36.2	14.2	3.42
The environmental approval from NEMA have a lot of bureaucracy and thus leads to delays with affect the timeline and cost of the projects.	1.3	1.3	21.1	38.8	37.5	4.10
The environmental impact assessment to some extent influences the performance of the projects in terms of cost and time.	17.2	8.6	11.2	31.0	31.9	3.52
The inspection audits undertaken by NCA affect the progress and	0	9.9	19.8	38.8	31.5	3.92

performance of the projects and sometimes have cost impact to the project.

The Project registration approval process is not only tiresome but also causes delay to the projects.

**Composite Mean**

**3.54**

Majority of the respondents (62.9%) agreed that the approval of the development application has a big influence on the performance of construction projects (M = 3.41, SD = 1.421). The cost related to approval of physical plans by the various county governments and other government agencies affect the overall cost of the projects as supported by a majority of 51.8%. However, 29.7% had contrary opinion while 18.5% were neutral (M = 3.22, SD = 1.406). On safety audits by the public health are conducted periodically and they may result to acting on the project which may lead to delays and cost issues, majority of 50.4% of the respondents agreed while 29.7% disagreed (M = 3.47, SD = 1.432). Majority of the respondents (50.4%) agreed that the safety and health approvals at the construction sites are the major causes of delays since it's almost impossible to comply with. though 21.1% disagreed while a 28.4% were undecided (M = 3.42, SD = 1.003). A majority of the respondents (76.3%) agreed that during the environmental approval from NEMA have a lot of bureaucracy and thus leads to delays with affect the timeline and cost of the projects while 21.1% were neutral (M = 4.10, SD = 4.10). Respondents (62.9%) also agreed that the environmental impact assessment to some extent influence the performance of the projects in terms of cost and time (M = 3.52, SD = 1.450). Majority of the respondents (60.3%) also agreed that the inspection audits undertaken by NCA affect the progress and performance of the projects and sometimes have cost impact to the project (M = 3.92, SD = .952). Finally, 44.4% of the respondents agreed that the Project registration approval process is not only tiresome but also causes delay to the projects while 35.8% disagreed (M = 3.22, SD = 1.291).

### 3) Performance of Sports Stadia Construction Projects

The main objective of the study was to examine the effect of project cost management and the performance of sports stadia construction projects in Kenya. The composite Mean of 3.44 and a standard deviation of 1.281 suggested that the respondents neither agreed nor disagreed on whether sport stadia projects were successful implemented in Kenya. Further, the standard deviation of 1.281 further suggested that there are minimal variations in the responses. According to [33] the most familiar successful criteria are meeting performance, completion on time, and project costs within budget. However, additional criteria-based industries include: reliability, sustainability, safety, benefits to the business, and long-term performance. Success criteria can be subjective depending on the view of the observer.

[40] argued that, only 30% of projects are delivered within

## Project Resource Planning and Performance of Sports Stadia Construction Projects In Kenya with the Moderating Effect of Government Policy

the budget while 15% are completed on time thus, project managers suffer major challenges in construction projects. An accurate and unbiased cost estimates made early form an important component of project estimation. Over optimistic estimators aim at attracting clients with low estimates means the average cost overruns rise up to 30% where the variation of the actual cost and estimated cost is assumed to be an average of 15% thus, as a result of an over optimistic estimation, the final cost of the project is doubled. Proper estimation practices, education and training are some of the mitigations to project estimation problems [41]. [42] posited that cost management process is crucial in controlling the expenditure at every stage of a project from its inception through its development, design, execution, final payment and closure of a project.

**Table III: Performance of Sports Stadia Construction Projects**

Performance of Projects	SD %	D %	N %	A %	SA %	M
The projects have been completed within time frame, at required standards and by achieving its set objectives	9.9	19.8	20.3	21.1	28.9	3.39
The projects are implemented within their estimated budgets.	9.9	19.8	19.8	28.9	21.6	3.32
The funds budgeted for the project have been utilized well	9.9	19.8	28.4	21.6	20.3	3.22
The project has adhered to the quality and standards	9.9	19.8	21.6	20.3	28.4	3.37
The implemented projects are according to the technical requirements	9.9	19.8	19.8	28.9	21.6	3.42
The project stakeholders are satisfied with the project implemented	9.9	19.8	19.8	21.6	28.9	3.40
The cost of rework is very minimal	1.3	11.2	19.8	37.5	30.2	3.84
Cost management in projects ensures there is an effective appraisal payment profiles of the actual cash outflows and their deviations	8.6	27.2	19.8	22.8	21.6	3.52
Systematic and accurate cost estimates can effectively	9.9	21.6	11.2	28.9	28.4	3.44

support budgeting process	
<b>Composite Mean</b>	<b>3.44</b>

The statistics from Table III show that respondents (50%) agreed that the projects have been completed within time frame, at required standards and by achieving its set objectives, while 28.7% disagreed with 20.3% were neutral (M = 3.39, SD = 1.347). About 50.5% of the respondents believed that the projects were implemented within their estimated budgets, 29.7% disagreed while 19.8% were neutral (M = 3.32, SD = 1.284). Respondents (41.9%) agreed that the funds budgeted for the project has been utilized well while 29.7% disagreed with 28.4% undecided (M = 3.22, SD = 1.256). On whether the project adhered to the quality and standards, respondents (48.7%) agreed while 29.7% disagreed while 21.6% were neutral (M = 3.37, SD = 1.343 ). Similarly, on whether the implemented projects were according to the technical requirements, 50.5% of the respondents agreed while 29.7% disagreed, the mean of 3.42 further suggested that on the average the respondents were neutral on that matter (M = 3.42, SD = 1.274). About 50.5% of the respondents opined that the project stakeholders were satisfied with the project implemented, 29.7% were contrary while 19.8% undecided on their opinion (M = 3.40, SD = 1.348). However, a majority of the respondents (67.7%) agreed that the cost of rework was very minimal though 22.5% had contrary opinion while only 19.8% were neutral on the matter (M = 3.84, SD = 1.022). On whether Cost management in projects ensured there was an effective appraisal payment profiles of the actual cash outflows and their deviations, 44.4% agreed while 35.8% disagreed with only 19.8% neutral (M = 3.52, SD = 1.291). Finally, on whether Systematic and accurate cost estimates can effectively support budgeting process, 57.3% agreed while 31.5% disagreed with only 11.2% neutral (M = 3.44, SD = 1.360).

### B. Inferential Analysis

The inferential analysis was used to determine the relationship between the independent variable, the moderating variable and the dependent variable.

#### 1) Correlation Analysis

Correlation Analysis was used to establish the strength and direction of the relationship between dependent and the independent variables. Table V below shows that Project Resource Planning had a strong positive and significant relationship with Performance of Sports Stadia construction projects in Kenya (r=0.952, p=0.000); and that Quality Cost Management had a weak positive significant relationship with Performance of Sports Stadia construction projects in Kenya (r=0.291, p=0.010). Similarly, [43] found a positive significant correlation between Project Cost Planning and Successful implementation of ERP project at Ethio Telecom in Ethiopia (r = .487, p = .005). Similarly, [44] in a study on the influence of project planning on performance of road construction projects in Uasin Gishu found project planning to have a strong positive significant correlation with performance of road construction projects (r = .746, p = .004).



**Table IV: Correlation Analysis**

		PSSP
Performance of Sports Construction Stadia Projects (PSSP)	Pearson Correlation Sig. (2-tailed)	1
	N	232
	Pearson Correlation Sig. (2-tailed)	.952*
Project Resource Planning (PRP)	Pearson Correlation Sig. (2-tailed)	.000
	N	232

*2) Regression model of Project Performance and Project Resource Planning*

From the regression results the coefficient of determination (R<sup>2</sup>) and the correlation coefficient (r) show the degree of association between Project Resource Planning and Performance of Sports Stadia construction projects. From Table V below, r (.952) shows a strong correlation between the predictor variable of Project Resource Planning and the dependent variable Performance of Sports Stadia construction projects. The coefficient of determination R<sup>2</sup> (.906) implies that Project Resource Planning explains 90.6% change of Performance of Sports Stadia construction Projects in Kenya.

**Table V: Model Summary for Project Resource Planning**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952 <sup>a</sup>	.906	.905	.2690

a. Predictors: (Constant), Project Resource Planning

b. Dependent Variable: Performance of Sports Stadia Construction Projects

The results from the ANOVA test reveal that Project Resource Planning had a significant influence on the Performance of Sports Stadia construction Projects in Kenya since the P-value (0.000) is less than the significance value of 0.05. The F-Calculated (1, 230) = 2207.409 which is greater the F-Critical (1, 230) = 3.882. This implies that Project Resource Planning to some extent is significant in explaining the change of Performance of Sports Stadia construction Projects in Kenya. Table VI below shows the ANOVA results for the Project Resource Planning.

**Table VI: ANOVA for Project Resource Planning**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	160.440	1	160.440	2207.409	.000 <sup>b</sup>
Residual	16.717	230	.073		
Total	177.157	231			

a. Dependent Variable: Performance of Sports Stadia Construction Projects

b. Predictors: (Constant), Project Resource Planning

Having found Project Resource Planning to be significant in explain the change of performance in Sports Stadia Construction Projects in Kenya, the regression coefficients were as shown in Table VII below. Project Resource Planning significantly influences performance of Sports Stadia Construction Projects in Kenya P-value (.000 < 0.05). Project Resource Planning also influences Performance of Sports Stadia Construction Projects by 95.2%. The β (.958) indicates a direct relationship between Project Resource Planning and Performance of Sports Stadia Construction Projects in Kenya i.e., a unit increase in Performance of Sports Stadia Construction Projects will need .958 of Project Resource Planning. The findings concurred with [43] who found cost planning to have a significant influence and relationship with success of ERP project at Ethio Telecom in Ethiopia (β = .421, P-value = .011, standardized beta = .325). In another study by [44] found significant relationship between Project Cost Planning and performance of road construction projects in Uasin Gishu County (β = .785, P-value = .0202, standardized beta = .067). [47] further supported the findings in their study where they found a positive significant relationship between project cost estimation and implementation of water projects funded by the County government of Machakos (β = .569, P-value = .005, standardized beta = .511).

The model was fitted as below

$$Y = \beta_0 + \beta_1 X_1 + e \dots \dots \dots (i)$$

$$\text{Performance of Stadia Projects} = .040 + .958 \text{ PRP} \dots (ii)$$

**Table VII: Regression Coefficients for Project Resource Planning**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.040	.074		.549	.584
PRP	.958	.020	.952	46.983	.000

a. Dependent Variable: Performance of Sports Stadia Construction Projects in Kenya

*3) Regression model of Project Performance and Government Policy*

From the regression results the coefficient of determination (R<sup>2</sup>) and the correlation coefficient (r) show the degree of association between Government Policy and Performance of Sports Stadia construction projects. From Table VIII below, r (.756) shows a strong correlation between the predictor variable of Government Policy and the dependent variable Performance of Sports Stadia construction projects. The coefficient of determination R<sup>2</sup> (.572) implies that Government Policy explains 57.2% change of Performance of Sports Stadia construction Projects in Kenya. The findings are also confirmed by [22] who found that regulatory framework in construction projects significantly influence performance of construction projects in Murang'a County in Kenya (r = .929, r<sup>2</sup> = .864)

**Table VIII: Model Summary for Government Policy**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
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**Project Resource Planning and Performance of Sports Stadia Construction Projects In Kenya with the Moderating Effect of Government Policy**

1	.756 <sup>a</sup>	.572	.570	.57448
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a. Predictors: (Constant), Government Policy  
 b. Dependent Variable: Performance of Sports Stadia Construction Projects

The results from the ANOVA test reveal that Government Policy had a significant influence on the Performance of Sports Stadia construction Projects in Kenya since the P-value (0.000) is less than the significance value of 0.05. The F-Calculated (1, 230) = 306.789 which is greater the F-Critical (1, 230) = 3.882. This implies that Government Policy to some extent is significant in explaining the change of Performance of Sports Stadia construction Projects in Kenya. Table IX below shows the ANOVA results for the Construction Project Financing.

**Table IX: ANOVA for Government Policy**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	101.250	1	101.250	306.789	.000 <sup>b</sup>
Residual	75.907	230	.330		
Total	177.157	231			

a. Dependent Variable: Performance of Sports Stadia Construction Projects  
 b. Predictors: (Constant), Government Policy

Having found Government Policy to be significant in explain the change of performance in Sports Stadia Construction Projects in Kenya, the regression coefficients were as shown in Table X below. Government Policy significantly influences performance of Sports Stadia Construction Projects in Kenya P-value (.000 < 0.05). Government Policy also influences Performance of Sports Stadia Construction Projects by 75.6% which is also affirmed by the r (.756) in the model summary in Table IX. The β (.850) indicates a direct relationship between Government Policy and Performance of Sports Stadia Construction Projects in Kenya i.e., a unit increase in Performance of Sports Stadia Construction Projects will need .850 of Government Policy. The results are supported by [45] in their study of the effect of regulatory framework on the performance of public private partnerships road projects in Kenya found government policy to have a moderating influence on performance of road projects and the regulatory framework (β = .211, beta = .187, p-value = .000).

The model was fitted as below

$$Y = \beta_0 + \beta_5 X_5 + e \dots \dots \dots \text{(iii)}$$

$$\text{Performance of Stadia Projects} = .389 + .850 \text{ GP} \dots \dots \text{(iv)}$$

**Table X: Regression Coefficients for Government Policy**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.389	.176		2.217	.028
GP	.850	.049	.756	17.515	.000

a. Dependent Variable: Performance of Sports Stadia Construction Projects in Kenya

*4) Moderation for Project Resource Planning and Performance of Sports Stadia Construction Projects.*

From the regression results the coefficient of determination (R<sup>2</sup>) and the correlation coefficient (r) show the degree of association between Project Resource Planning and Performance of Sports Stadia construction projects. From Table XI, r (.952) shows a strong correlation between the predictor variable of Project Resource Planning and the dependent variable Performance of Sports Stadia construction projects. The coefficient of determination R<sup>2</sup> (.906) implies that Project Resource Planning explains 90.6% change of Performance of Sports Stadia construction Projects in Kenya. In Table 4.32, the relationship between Project Resource Planning, Government Policy \*Project Resource Planning and Performance of Sports Stadia Construction Projects in Kenya, the R<sup>2</sup> was (.921) and the correlation coefficient r was .960. thus, after moderation by Government Policy there is a significant increase in correlation (r = .960 > .952) and also an increase in influence (R<sup>2</sup> = .921 > .906). The moderating variable Government Policy has a significant positive and direct influence on the relationship between Project Resource Planning and Performance of Sports stadia Construction Projects in Kenya.

**Table XI: Model summary for Moderation between Project Resource Planning and Performance of Sports Stadia Construction Projects.**

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952 <sup>a</sup>	.906	.905	.26960
2	.960 <sup>b</sup>	.921	.921	.2468

a. Predictors: (Constant), Project Resource Planning  
 b. Predictors: (Constant), Project Resource Planning, Project Resource Planning \_ Government Policy, Performance of Sports Stadia Construction Projects

The ANOVA results in Table XII show that for the relationship between Project Resource Planning is fit and significant in explaining change in Performance of sports Stadia construction projects in Kenya. With the moderation variable introduced the results also show the Project Resource Planning \* Government Policy are also fit and significant in explaining change of Performance of sports Stadia construction projects in Kenya. Thus, from the second ANOVA F-calculated (2, 229) = 1339.777 and P-value = .000 clearly indicate that to some extent Government Policy is fit and significant to explain the moderation effect between Project Resource Planning and Performance of Sports Stadia construction Projects in Kenya.

**Table XII: ANOVA for Project Resource Planning \_ Government Policy**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	160.440	1	160.440	2207.409	.000 <sup>b</sup>
Residual	16.717	230	.073		
Total	177.157	231			
2 Regression	163.209	2	81.604	1339.777	.000 <sup>c</sup>



Residual	13.948	229	.061
Total	177.157	231	

- a. Dependent Variable: Performance of sports Stadia construction projects in Kenya
- b. Predictors: (Constant), Project Resource Planning
- c. Predictors: (Constant), Project Resource Planning, Project Resource Planning \_ Government Policy

In the first regression model the regression coefficients in Table XIII shows that Project Resource Planning Influences Performance of Sports stadia construction project by 0.952. There is also a significant (P-value = 0.000 < .05) direct positive relationship between Project Resource Planning and Performance of Sports Stadia Construction Projects in Kenya where an increase in Project Resource Planning by .958 leads to a unit increase in Performance of Sports Stadia Construction Projects in Kenya.

$$PSSP = .040 + .958 PRP \dots\dots\dots (ii)$$

However, after moderation, for a unit of Performance of Sports Stadia Construction Projects in Kenya 1.198 Project Resource planning is needed. Project Resource Planning also influence Performance of Sports Stadia Construction Projects in Kenya by 1.190 which is 0.23 (23%) increase from the first regression model. This implies that Government Policy has a significant effect on Performance of sports Stadia Construction Projects in Kenya. The model regression model after moderation was fitted as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_5 X_5 + \beta_5 X_1 * M \dots\dots\dots (v)$$

$$Y = -1.488 + 1.198 PRP + .591 GP - .109 PRP\_GP \dots\dots\dots (iv)$$

**Table XIV: Regression coefficients for Project Resource Planning and Moderator Variable**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error				Beta
1	(Constant)	.040	.074	.549	.584	
	PRP	.958	.020	.952	46.983	.000
2	(Constant)	-1.488	.284	-5.234	.000	
	PRP	1.198	.091	1.190	13.182	.000
	GP	.591	.086	.526	6.871	.000
	PRP_GP	-.109	.025	-.642	-4.343	.000

- a. Dependent Variable: Performance of Sports Stadia Construction Projects

**IX. CONCLUSIONS**

The first objective of the study was to explore the effect of Project Resource Planning on Performance of Sports Stadia Construction Projects in Kenya. The study also sought to prove the hypothesis that Project Resource Planning has a significant effect on Performance of Sports Stadia Construction Projects in Kenya. The findings revealed that Project Resource Planning significantly influences performance of sports stadia construction projects in Kenya. The null hypothesis was rejected and concluded that Project Resource Planning has a significant effect on performance of

sports stadia construction projects in Kenya. The findings are in line with [43] who found strong significant relationship between project cost management practices of cost planning, cost estimation, cost budgeting, and cost control on the successful ERP implementation of projects in Ethio Telecom Ethiopia. Similarly, [46] in a study on cost management and performance of construction project found a significant relationship between cost management performance of construction projects in Elgeyo Marakwet County in Kenya. [44] on the study of influence of project planning on road construction projects performance in Uasin Gishu County in Kenya who found a positive significant influence of project cost planning on performance of road projects.

The second objective was to establish the moderating effect of Government Policy on Project Cost Management and Performance of Sports Stadia Construction Projects in Kenya. The moderating variable Government Policy has a positive and direct influence on the relationship between Project Resource Planning and Performance of Sports stadia Construction Projects in Kenya. The study found that Government Policy has a negative significant moderating effect on the relationship between Government Policy on Project Resource Planning and performance of sports stadia construction projects in Kenya PCP\_GP (β = -.109, p = .000). The moderation effect of Government policy on Project Resource Planning influences -64.2% of Performance of sports stadia construction projects in Kenya.

**X. RECOMMENDATION OF THE STUDY**

The findings suggested that Project Resource Planning has a positive significant influence on Performance of Sports Stadia Construction projects in Kenya. Previous literatures have found that projects lack a holistic approach to Resource Planning. Cost planning is an essential part of the project management process where project managers need know to where the costs fall in their schedule to manage demand of resources. Since successful project cost management is highly dependent on planning process it is recommended that resource allocation and cope management to be effectively done This should also be done by using the well-developed methods and tools for resource planning. Project managers should use the right planning tools resources to help minimize time as well as over utilization of resources that may be costly and negatively impact the performance of projects. This study recommends that the government ensures that there is full conformance on the approvals of projects, adherence to safety and health standards as well ensure the construction of the projects are accordance to environmental factors. Thus, NCA, NEMA, EBK, BORAQS, and the county governments should tighten their grips at the same time ensure that the services are easily accessible to speed up the construction of the sports stadia projects.

**XI. SUGGESTION FOR FUTURE STUDY**

They study has added knowledge in the area of Project Cost Management and performance of projects. The relationship between Project Resource Planning and performance of spots stadia projects with the moderating effect of Government policy provides a significant contribution to project management literature and specifically in Project Resource Planning. Most literature has focused on construction projects



# Project Resource Planning and Performance of Sports Stadia Construction Projects In Kenya with the Moderating Effect of Government Policy

with specific to road and infrastructure, water projects, building and housing projects and there is limited literature here in Kenya on sort Stadia projects. The study also established the extent to which the study variables influence performance of projects and from this the knowledge gap has been bridged to open further research in those areas for critiquing. The study also recommends similar variables to be used in a different project to ascertain the current findings.

## REFERENCES

- [1] International Trade Administration. (2020, August). China Sports Facility Design and construction. Retrieved 2022, from trade.gov: <https://www.trade.gov/market-intelligence/china-sports-facility-design-and-construction>.
- [2] Institute Project Management. (2020). Wembley Stadium- A badly run project with a good outcome. Retrieved from project management: [www.projectmanagement.ie](http://www.projectmanagement.ie).
- [3] National Assembly. (2020). Report on the inquiry into the status of stadiums in Kenya. departmental committee on sports, culture and tourism. Nairobi: Republic of Kenya.
- [4] Stella Inabo. (2023). The Mega guide to resource planning for project managers. Retrieved from float.com: <https://www.float.com/resources/guide-to-resource-planning/#:~:text=Resource%20planning%20is%20the%20process,based%20on%20your%20team's%20capacity>
- [5] Kenya Vision 2030. (2018). Kenya Vision 2030 Sector Progress Project Updates June 2018. Nairobi: Kenya Vision 2030. Retrieved 2022, from <http://vision2030.go.ke/wp-content/uploads/2018>
- [6] Greenberg, M. J., & MacMillan, D. (2018). 'Cost Overruns and Sports Venue Construction'. The law of offices of Martin J. Greenberg.
- [7] C.H. Weiss.(1972) Evaluation Research: methods for assessing program effectiveness, Englewood
- [8] Lipsey, M.W. (1990) Design Sensitivity: Statistical Power for Experimental Research. Park Sage Publications, Newbury.
- [9] Rogers, P. (2000). Program theory: Not whether programs work but how they work. In D. Stufflebeam, G. Madaus, & T. Kellaghan (Eds.), Evaluation models: Viewpoints on Educational and Human Services Evaluation (pp. 209–232). Dordrecht, Netherlands: Kluwer Academic Publishers.
- [10] Hajj, F. Morin, M., & Parker, K. (2013) Rethinking programme evaluation in health professions education: beyond 'did it work?' Medical Education, 47, 342-351.
- [11] Goldratt, E. M. (2004). The Goal: A Process of Ongoing Improvement, Third Revised Edition. New York.
- [12] Goldratt, E. (1984). The theory of constraints. North River Press.
- [13] Kalender, Z. T., Vayvay, O., & Gunay, N. S. (2014). Theory of Constraints: A Literature Review. 10th International Strategic Management Conference, (pp. 930-936).
- [14] Linhares, A. (2009). 'Theory of constraints and the combination of the product mix decision in infrastructure projects'. International Journal of Production Economics, 121(1), 121-129.
- [15] Ahsan, K., & Gunawan, I. (2010). Analysis of cost and schedule performance of international development projects. International Journal of Project Management, 28(1), 68-78.
- [16] Ojiambo, J. .. (2018). 'Critical success factors government policy compliance and completion of construction projects in public secondary schools in Bungoma County in Kenya. Doctoral thesis in project planning and management, University of Nairobi.
- [17] Ogutu, B. (2017). Factors Influencing Successful Completion of Road Construction Projects In Kenya Kisumu County. International Journal of Economics, Commerce and Management, 5(6), 657-698.
- [18] PMI. (2017). A Guide to the Project Management Body of Knowledge: PMBOK Guide (6th ed.). Newtown Square, PA: Project Management Institute, Inc.
- [19] Dopson, E. (2020). A project Manager's guide to resource planning in 2022. Retrieved 03 2022, from float.com: [www.float.com](http://www.float.com)
- [20] Team FME. (2014). Project Cost Management. Free management eBooks. Retrieved from [www.free-management-ebooks.com](http://www.free-management-ebooks.com)
- [21] Pountney, P. J. (2016). The importance of resource planning during the initiation stage of an IT Project. Swinburne University of Technology. ResearchGate.
- [22] Ochola, W. O., Cheruiyot, C., & Winja, M. M. (2022). 'Impact of Regulatory Framework on Performance of Building Construction Processes in Kenya: A case study of Murang'a County'. International Journal of Engineering Research & Technology, 11(9), 107-116.
- [23] Gichamba, S., & Kithinji, C. (2019). 'Influence of environmental regulations in the performance of construction projects in Nairobi County, Kenya'. International Academic Journal of Information Sciences and Project Management, 3(4), 184-209.
- [24] Cunningham, A. (2014). 'Factors Affecting the Cost of Building Work – An Overview'. Retrieved from [arrow.dit.ie:arrow.dit.ie/cgi/viewcontent.cgi?article=1028&context=beshreoth](http://arrow.dit.ie:arrow.dit.ie/cgi/viewcontent.cgi?article=1028&context=beshreoth)
- [25] Yalley, P., Opintan-Baah, E., & Darko, J. (2015). 'Evaluating the Performance of Environmental Protection Agency (EPA) in the Ghanaian building constructional industries '. International Refereed Journal of Engineering and Science, 2(1), 1-8.
- [26] Competition Authority of Kenya. (2017). 'The construction industry: Analysis of the state of competition'. Nairobi: CAK.
- [27] Kerzner, H. (2017). Project Management: A systems approach to planning, scheduling, and controlling (10th ed.). New Jersey: John Wiley & Sons, Inc.
- [28] Association for Project Management. (2018). APM Body of Knowledge, (6th ed.). Association for Project Management: Buckinghamshire.
- [29] Takim, R., & Adnan, H. (2018). 'Analysis of effectiveness measures of construction project success in Malaysia'. Asian Social Science, 4(7), 74-91.
- [30] Scheuchner, G. A. (2017). 'Strategies to promote IT project success'. Doctoral dissertations.
- [31] Turner, J. R., & Xue, Y. (2018). 'On the success of megaprojects'. International Journal of Managing Projects in Business, 11, 783. doi:10.1108/IJMPB-06-2017-0062
- [32] Kimiti, F. M., & Moronge, M. (2018). Influence of project management practices on implementation of county government projects in Kenya. The Strategic Journal of Business & Change Management, 58.
- [33] Lester, A. (2017). Project Management, Planning and Control: Managing Engineering, Construction and Manufacturing Projects to PMI, APM and BSI Standards (7th ed.). Oxford OX5 1GB, United Kingdom: Elsevier Ltd.
- [34] Pinha, D.C. & Ahluwalia, R.S (2019). Flexible resource management and its effect on project cost and duration, Journal of Industrial Engineering Internationa, 15(1), 119-133.
- [35] Subramani ,T & Karthick,T.M. (2018). Study on Time and Resource Management in Construction Projects Using MS Project, international journal of engineering & technology, 7(3.10), 23-36.
- [36] Owili, J. D., & Paul, S. N. (2021). 'Influence of project planning on implementation of infrastructure projects in public hospitals in Nairobi County Kenya'. International Journal of Innovative Development and Policy Studies, 9(1), 50-68.
- [37] Simon, S.M.. (2021).Views of the Kenyan construction industry players regarding the impact of resource planning and leveling on construction project performance, East African Journal of Business and Economics, 3 (1), 28-35.
- [38] Ogogo, D. O., Omwenga, J. Q., & Paul, S. N. (2019). 'Influence of the Moderating Effect of Government Regulations on Performance of Government Construction Projects in Kenya'. The Journal of humanities and social studies, 7(4), 78-83.
- [39] Australian Government. (2017). Base Cost Estimation. Department of Infrastructure and regional development. Commonwealth of Australia.
- [40] Riddell, T. (2016). Top 5 Issues Facing the Construction Industry in 2017. Retrieved 04 2022, from [esub.com:esub.com/top-issues-facing-the-construction-industry-2017](http://esub.com:esub.com/top-issues-facing-the-construction-industry-2017)
- [41] Al-Hazim, N., Salem, Z., & Ahmad, H. (2017). Delay and Cost Overrun in Infrastructure Projects in Jordan. Procedia Engineering, 182, 18-24. Retrieved from <http://dx.doi.org/10.1016/j.proeng.2017.03.105>
- [42] Phanse, A., Bhavsar, A. N., & Pitroda, J. R. (2021). Success Factors for Cost Management Process in Construction Industry. International Journal of Engineering S, and Construction, 11(03).
- [43] Alemseged, H., & Mamo, S. (2018). 'The effect of project cost management practices on the overall project success: a case study of Enterprise resource planning project implementation in Ethio Telecom'. MA in project management, Addis Ababa University school of commerce.
- [44] Ondiek, F. B. (2018). 'Influence of project planning on road construction projects performance in Uasin Gishu county Kenya'. MSc thesis in project management, JKUAT.
- [45] Pedo, M. O., Kabare, K., & Makori, M. (2018). 'Effect of regulatory framework on the performance of public private partnerships road

- projects in Kenya'. The Strategic Journal of Business & Change Management, 5(2), 850-868.
- [46] Onyango, J. O. (2021). 'Cost Management and implementation of construction projects in Elgeyo Marakwet County in Kenya'. MBA in project management, Kenyatta University
- [47] Mutiso, R., & Paul, S. N. (2021). Project Cost Management and Successful Implementation Of Machakos County Government Funded Water Projects Kenya. International Journal of Innovative Development and Policy Studies, 9(4), 1-18.