International Journal of
Entrepreneurship and Project Management
(IJEPM)

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IPRJB
INTERNATIONAL PEER REVIEWED JOURNAL AND BOOK PUBLISHING

International Journal of Entrepreneurship and Project Management
ISSN 2518-2838(Online) 2520-9108
Vol.4, Issue 2, pp 85-103, 2019
www.iprjb.org

FACTORS INFLUENCING PERFORMANCE OF ROAD CONSTRUCTION PROJECTS IN NAIROBI CITY COUNTY, KENYA.

[1*]Joy Mucheke

Post Graduate Student: Jomo Kenyatta University of Agriculture and Technology (JKUAT)

[*]Corresponding authors Email: makenamucheke91@gmail.com

[2]Dr. Samson Nyang'au Paul

Lecturer: Jomo Kenyatta University of Agriculture and Technology (JKUAT)

Abstract

Purpose: Despite immense allocation of the fund by the government in all its financial budget, the road construction projects sector face a challenge with poor management of funds, completion delays and poor delivery of services to the road user being mostly cited as the major drawback in the performance of the road sector. Performance of projects across the spectrum of all sectors of the economy requires skilled project managers in order for the projects to perform optimally.The objective of this research is to examine factors that influence performance of road construction projects in Nairobi, Kenya.

Methodology: The study applied a descriptive research design, while the target population were 72 companies involved in road construction projects in Nairobi City county. Census technique was prefered since the target population was relatively small and accessible. Questionnaires were employed in data collection. Data analysis was done using SPSS Software and findings were presented using tables , both descriptive and inferential statistics were applied in the study.

Results: It was found that project management competency has a positive and significant effect on performance of road construction projects since managers who are competent enhance effectiveness and efficiency of projects, they are in charge. Organizations involved in projects/programmes should leverage monitoring and evaluation tools as a basis of measuring progress of projects with a view to enhancing the efficiency, effectiveness, and sustainability. Moreover, findings of the study reveal that project monitoring and evaluation is an indispensable process that enables project managers to continuously collect data for the purpose of measuring the progress of projects. The study concludes that access to funding is a major challenge to project performance in terms of scope, quality, costs, and time.

Unique contribution to theory, practice and policy: The study recommends that organizations running projects should offer tailored and regular training to project managers with a view to augmenting and/or complementing their competence to manage projects/programs. Further research study should be conducted on different counties and different construction projects to investigate the factors that influence performance of projects.

Key words: *road construction projects, project management competency, project monitoring and evaluation, stakeholder engagement, access to funding*

INTRODUCTION

Across the globe, undertaking road construction projects is acknowledged as complex and capital intensive. In fact, any country that wishes to prosper economically cannot ignore to place a huge premium on road construction (Irandu, 2017). A high quality road network is an asset for any economy. For road construction projects to perform optimally, there is need to manage projects within a well programmed strategic and policy framework (Wissenbach & Wang, 2017).

The government of Kenya through the Ministry of Transport and Infrastructure has focused efforts on designing, developing and maintaining a road transport architecture that could facilitate sector growth and accelerate national economic development (Irandu, 2017). Kenya continues to pursue excellent transportation systems for improved quality of life by ensuring the country is connected and served by an efficient, safe, accessible and sustainable transportation services (Okita-Ouma, Lala, Moller, Koskei, Kiambi, Dabellen, & Pope, 2016). Kenyan government has been leveraging mega road projects in Kenya as a basis of gaining public support and trust to an extent that policy makers have been drawn to the rising number of projects. Kerr and Newell (2001) contended that policy makers play a critical role in determining the type of technology used in project implementation, signifying that government agencies and departments rely on policy makers as a means to ensuring that projects meet the set standards and quality.

Kafuna (2011) argues that performance of projects is an essential factor for the good governance of many nations globally. Project deliverables such as appropriate completion, management and public satisfaction are often used as standards to determine success. In Kenya, performance of Government initiated road projects is one of the important economic activities that contribute towards the economic growth of the nation. Success of a project in the Ministry Public Works hinges on the ability of the project implementation management, financial management the human resource capacity, and embracement of information technology to effectively foresee the entire project to intended efficacy (Irandu, 2017).

In Kenya, performance of road projects has not been determined from the perspective of participatory project planning (Mwakajo & Kidombo, 2017). Lack of proper documentation has been blamed as one of the compounding factors that affect evaluation of performance of road projects in Kenya (Ngacho & Das, 2014). According to Owolabi (2014) as cited in Kithinji (2017), construction of road projects are considered successful when delivered within scheduled duration, allocated budget, and specified quality.

The problems affecting Ghanaian contractors and consultants were researched by Ofori (2012) and found that challenges are the same as those noted generally in reports on construction industries in other third world countries. The challenges identified by as particularly influencing the performance of Ghanaian contractors include lack of ability to obtain adequate working capital, insufficient organization, inadequate engineering competence and poor workmanship. Other challenges include an extremely unstable business environment (Njogu, 2016) characterized by high inflationary trends, poor organization practices and weak organization structures (Vulink, 2004). Sweis (2013) found that presence of unskilled labourers; shortage of technical professionals in the contractors' organization; improper technical study by the contractor during the bedding stage, ambiguities and mistakes in specifications and drawings

affects construction projects. Ameh and Osegbo (2011) who established that among the various factors that cause time overrun in Nigeria include inadequate tools and equipment.

The government of Kenya through the Ministry of Transport and Infrastructure has focused efforts on designing, developing and maintaining a road transport architecture that could facilitate sector growth and accelerate national economic development (Irandu, 2017). Kenya continues to pursue excellent transportation systems for improved quality of life by ensuring the country is connected and served by an efficient, safe, accessible and sustainable transportation services (Okita-Ouma et al., 2016). Kenyan government has been leveraging mega road projects in Kenya as a basis of gaining public support and trust to an extent that policy makers have been drawn to the rising number of projects. Kerr and Newell (2001) contended that policy makers play a critical role in determining the type of technology used in project implementation, signifying that government agencies and departments rely on policy makers as a means to ensuring that projects meet the set standards and quality.

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Statement of the Problem

Despite immense allocation of the fund by the government in all its financial budget, the road construction projects sector face a challenge with poor management of funds, completion delays and poor delivery of services to the road user being mostly cited as the major drawback in the performance of the road sector (Ministry of Roads and Public Works, 2013). Despite the importance, economic and social value of reliable and efficient infrastructure, many projects in Kenya have experienced delays in timely completion. Nyika (2012) noted that only 20.8 per cent of the projects in Kenya were implemented on time and budget, while 79.2 per cent exhibited some form of failure.

Road construction projects in Kenya have been getting sustainability warning owing to poor quality standards; statistics by Kenya Roads Board has indicated that at least 6,212 km of tarmacked roads are classified as being in a fair condition, with 2,429 km classified as poor. In the construction and successful completion Thika Superhighway, the cost escalated from 26.44 billion to 34.45 billion (World Bank, 2014). The date of completion itself had to be revised from the earlier one of July 2011, to July 2013, a difference of two whole years.

Project financing has been quoted as one of the reasons that influence project performance; For instance, Hussin and Omran (2012) state that 70% of the abandoned construction projects were due to financial problems of developers, contractors, the local and national governments, stakeholders like the donors and many more, while Piper (2011) stated that up to 71% of the roads and other construction projects that in a way failed or took longer than planned for or

changed the dates of commencement than the planned dates were as a result of squeezed financial allocation and the contractual times agreements that were never practical.

Empirical studies in Kenya have considered performance evaluation of development projects (Ngacho & Das, 2014; Biamah, 2016), while in Africa the available empirical literature tends to focus on the performance of overall projects (Aranda-Jan, Mohutsiwa-Dibe & Loukanova, 2014). International empirical literature focuses on the performance of other projects as opposed to road construction projects (Estache, Perelman, & Trujillo, 2005; Kerr & Newell, 2003). From the empirical studies on the factors influencing performance of road construction projects, the topic has been inconclusive. Accordingly, this prompted the need to conduct this research on the factors influencing performance of road construction projects in Nairobi City County, Kenya. Therefore, this study seeks to examine contextual, conceptual, and empirical gaps on the factors influencing performance of road construction projects in Nairobi city county, Kenya.

Objectives of the study

The objective of the study is to determine the factors influencing performance of road construction projects in Nairobi City County, Kenya.

LITERATURE REVIEW

Theoretical Framework

This section reviews theories that are relevant to the specific objectives of the study, implying that the use of theories will enhance the study by underpinning the key concepts of the theoretical review in empirical literature. The study would adopt project management competency theory, programme theory, stakeholder's theory, and financial distress theory.

Project Management Competency Theory

The theory of project management competency has been applied in the current body of literature to demonstrate how competencies of project managers enhance project performance. Suikki, Tromstedt and Haapasalo (2006) and Cicmil and Hodgson (2006) are the leading proponents of project management competency theory. The theory borders on knowledge of project managers in all their shapes, but it also includes personality traits and abilities, such as social competence, stress tolerance, and persistence. Project management is a complex process targeting multiple outcomes. Project management competency is just as complex, requiring the acquisition of a variety of knowledge and skill sets that often cross areas of expertise, including instructional technology, management, information technology, engineering, and manufacturing (Suikki, 2006).

Mega projects, such as road construction projects symbolize a strategic option towards achieving sustainable development objectives in developing countries and these projects require high design knowledge, technical skills, competent human resource and managerial capabilities (Cicmil & Hodgson, 2006). This wider application of project management is an important factor in the maturing of project management as a profession and raises questions about the value of existing project management standards in relation to the nature of projects and project management roles

Project manager competency consists of three separate dimensions: Knowledge, which is what a project manager knows about the application of processes, tools and techniques in project activities; Performance, which refers to how a project manager applies project management knowledge to meet project requirements; Personal, which is how a project manager behaves when performing activities in a project environment (Omran, Bazeabez, Gebril, & Wah, 2012). In order to be recognized as fully competent, a project manager must satisfy each of these three dimensions. An individual can demonstrate knowledge competency by obtaining an appropriately credentialed assessment.

Programme Theory

It is commonly reported that the function of programme theory is to ascertain the theoretical sensibility of the programme. A program theory consists of a set of statements that describe a particular program, explain why, how, and under what conditions the program effects occur, predict the outcomes of the program, and specify the requirements necessary to bring about the desired program effects

A program theory provides a basis for evaluating relatively uncontrolled programs. Specifying a program theory to planners, staff members, people responsible for obtaining funding, and evaluators will assist them to carry out their duties while explaining how funding is being utilized. A program theory can also encourage program investors to be focused on specific outcomes, rather than wasting funding, resources, and measurement objectives on attempting too much.

Stakeholder's Theory

Frooman (2010) is one of the proponents of stakeholder theory, and argues that there are two views of stakeholder theory, which include strategic and moral. According to the moral view, actions of organizations may affect people, where the affected people have a right to access information, which would enable them demand given standards of operations, such as benefits and interests. For instance, Williams and Adams (2013) used the moral view to examine workforce disclosures from a stakeholder viewpoint.

Freeman (2004) suggests that the strategic perspective of the stakeholder theory hinges on how organizations are able to realize their objectives, which define benefits. On the same breadth, Greenwood (2007) categorizes the strategic view into social construction and managerialism construction, where the managerialism perspective, just like Freeman's (2004) strategic view, defines stakeholders as important entities in organizations because they provide essential benefits, such as risk management, social license for operations, and legitimization of businesses. Under the social construct as a strategic view of stakeholder theory, Livesey and Kearins (2002) argue that some organizations immorally impose their dominance over stakeholders, which weakens organizations.

Financial Distress Theory

Financial distress has been applied to explain financial constraints that project undergo since access to finance is crucial for optimum performance of projects. Gordon (1971) is one of the earliest authors of financial distress theory and stated that financial distress is a condition that is witnessed when a firm is not in position to service its liabilities as they follow or when the firm show an indication to restructure debt instalment due to struggle to in repay it. Application of

financial distress theory in project management is used to explain how accessibility to funds determine performance of projects. Irregular flow of funds curtails running of project activities and/or processes to an extent that projects are unable to meet set deadlines.

Brown, Ciochetti and Riddiough (2006) stated that financial distress could be caused by three key issues that are neoclassical problem connected with misappropriate allocation of firms' available resources. Financial distress theory is applicable to this study since it demonstrates how project managers/organizations fail to anticipate unforeseen circumstances to an extent that projects are unable to meet schedules. Moreover, key tenets of financial distress theory are manifested in this study since the theory illustrates how despite good rating and aggressive strategies, firms still encounter financial distress problems. Financial distress is a global problem affecting both developed and developing economies (Wangige, 2016).

Conceptual Framework

The study will apply the conceptual framework as an approach to describing the dependent and independent variables of the study. For this study, the independent variables include stakeholder engagement, personnel training, formative evaluation, and project leadership capabilities whereas the dependent variable is performance of road construction projects.

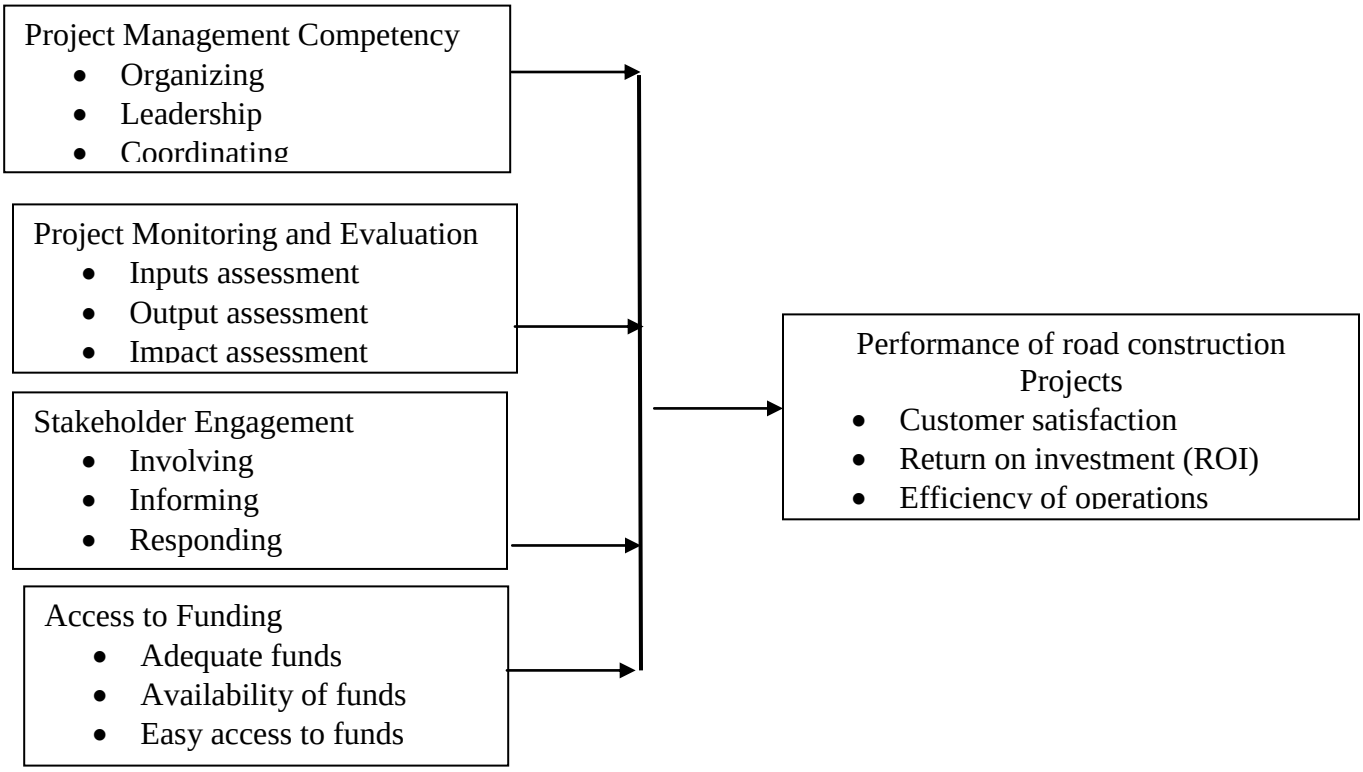

Figure 1: Conceptual Framework

Empirical Review

Project Management Competency

Moura, Carneiro, and Diniz (2017) conducted a survey on the effects of attributes of the projects and project performance. The authors collected and analyzed data from 244 project managers, where the findings of the study established that project managers' skills, competencies, and knowledge influence project performance. On the other hand, the authors established that individuals' traits of project managers do not directly influence project performance; however, personal traits have an indirect effect on attitudes. Furthermore, analysis of the collected data pointed out that certification plays a moderating role between project performance and project managers' knowledge and capability. Moura et al. (2017)'s findings are applicable to the current study because it provides a basis on how project managers' knowledge and attitudes determine the performance of projects. Notwithstanding these critical finding, current study could provide different findings because it focuses on an infrastructural project, while the survey was based on professionals working in project management, without a particular emphasis on road construction projects, a gap that this study will fill.

Oshinubi (2007) through correlational and quantitative approaches assessed the association between leadership styles of 17-project managers in 17-project teams comprising of 6-9 members and the team members' perception leadership styles of the project managers because of the strong relationship between project team performance and leadership styles in Southeastern United States' construction industry. The author assessed nine attributes of leadership, which included responsibility sharing, empowering others, common vision, risk taking, continuous team and individual development, charisma, mutually influencing relationships, and placing the interests of the group ahead of the individual interests, risk-taking, team collaboration, and empowering others. Analysis of the responses pertaining to the nine characteristics of leadership revealed that top performing managers had predominant four out of the nine leadership characteristics, which include collaboration, continuous development, risk taking, and mutual influence relationships. The author recommended that for projects to improve performance, it is critical for team members and project managers to undertake collective responsibilities in terms of boosting and/or enhancing performance. The ideas of the author form the basis of the present study because they espouse the specific leadership styles associated with performance of projects.

Lindbergh (2009)'s quantitative, non-experimental, correlational research applied structural equation modeling (SEM) to assess the relationship between project outcomes and organizational project management capability (OPMC). The author put into perspective OPMC as consisting of three intertwined constituents that included overall organizational culture, project management culture, and capability of the project manager. The findings from the study indicated there existed significant inter-correlations between project outcome and the various components of OPMC. In terms of the capability of project managers, the author established applied capability and potential capability as two levels of capability of project managers. In addition, the author established that applied capability was critical in enhancement of project outcomes compared to potential capability as the former had a significant correlation with an organizational culture that is supportive in nature. In this regard, the study is relevant to the current one because it offers a basis, which enables project managers to identify and prioritize

project areas that need improvements and work towards realization of set goals. The author recommended that training is critical in enhancing OPMC because it makes it possible for project managers to identify organizational gaps and work towards improving project outcomes.

Müller and Turner (2010) examined how project leadership competence and relative significance of attitudes of project managers predicated project success. To achieve this end, the authors classified leadership competences as intellectual, managerial, and emotional competences and assessed the competencies by means of a leadership dimensions questionnaire. On the other hand, the authors applied the project importance that managers assign as an approach to assessing attitudes. Inferential statistics were applied that included regression and analysis of variance (ANOVA) to determine the influence of leadership competences and attitudes on project success. The study findings showed that project leadership competences and attitudes had different influence on project outcome and project managers ought to exploit their competences and leverage appropriate attitudes as a means to realizing superior project outcomes.

Project Monitoring and Evaluation

Linzalone, Schiuma, Obradovic and Stankovic (2015) examined evaluation of e-learning projects using the logical framework approach and contended that the purposes of the evaluation of projects are different: to determine the impact on beneficiaries' performance, to compare projects, to support the improvement of projects in terms of socioeconomic effects and impacts, on individuals and organizations, to support the applicant in the design phase. This last purpose is increasingly important for all the stakeholders of e-learning projects (i.e. universities, companies, communities, as well as students and employees), due to a global and highly competitive environment. Evaluation of e-learning projects takes into account the benefits and the costs due to the project, from its inception to the extinction of its effects. This paper, using the e-learning project as the 'unit of analysis', proposes and promotes the adoption of the Logical Framework Approach, in the designing phase of the E-Learning Project. It enables the proposers, as well as an external evaluator, to evaluate the project by assessing its coherence, that is the validity of the logical and causal links among activities, resources, outputs, purposes of the project proposal. The paper highlights peculiarities and weaknesses of this model for an effective evaluation.

Stetler (2006) undertook a study on the role of monitoring and evaluation in implementation research and observed that formative evaluation is a study approach that is often key to the success, interpretation, and replication of the results of implementation. Formative evaluation can save time and frustration as data highlight factors that impede the ability of clinicians to implement best practices. It can also identify at an early stage whether desired outcomes are being achieved so that implementation strategies can be refined as needed; it can make the realities and black box nature of implementation more transparent to decision makers; and it can increase the likelihood of obtaining credible summative results about effectiveness and transferability of an implementation strategy. Formative evaluation helps to meet the many challenges to effective implementation and integration of research findings into practice and improvement

Stakeholder Engagement

Nkuruziza, Kasekende, Otengei, Mujabi, and Ntayi (2016) investigated the critical influencers of agricultural projects performance in sub-Saharan Africa. Through a self-administered

questionnaire, the authors sought to collect data from two districts in Uganda, which had 342 agricultural projects. By using both descriptive and inferential data analysis approaches, the authors established that knowledge management and engagement of stakeholders had a positive relation with performance of agricultural projects. However, the study deviates from the current study because it focuses on a specific case of the agricultural industry, which leaves a gap as to whether this is the situation with other sectors.

Sallinen, Ruuska and Ahola (2013) examined the influence of stakeholder involvement in large nuclear power plant projects. Methodologically, the case study descriptive approach was used and data collected from 18 interviews. Ministry and company officials were interviewed using a semi-structured key informant interview guide on the influence of stakeholder involvement. Analysis of the interview responses established that regulations and laws influences involvement of government stakeholders. The authors revealed that government stakeholders either enable or restrain projects, where the two types of stakeholder influence are applied at the same time. Enabling of projects according to the authors refers to the project managers adhering to the set standards and regulation code.

Njogu (2016) through a descriptive research design conducted a study on the Automobile industry by examining the project performance from the sphere of stakeholder participation/involvement. Through stratified sampling technique, data were collected from 125 respondents who consisted of quality control personnel, project managers, supervisors, and operational managers. The study findings established that stakeholder participation has critical implications on environmental conservancy, such as emissions. The study findings pointed out that Automobile Emission control could be achieved by encouraging stakeholder participation. Simply put, the study established that companies in the Automobile industry could control emissions by entrenching stakeholder participation. The study exhibits knowledge gaps because it focusses on the Automobile industry, while the current study seeks to delineate the influence of stakeholder participation on project performance.

Bal, Bryde, Fearon and Ochieng (2013) through an exploratory study investigated sustainability of the construction industry through stakeholder involvement, where the authors linked achievement of sustainability targets to successful outcome in the construction sector. The authors argued that stakeholders in any given project constitute of important and less important stakeholders; however, the authors suggested that lack of involvement of less important stakeholders might result to non-achievement in sustainability. In the context of this background, the authors argued that decision-making out to involve all stakeholders (important and less important stakeholders) as a means to realization of sustainability. The findings of the study posited that comprehension of distinct stakeholders' sustainability agenda and gauging of the listed agenda against performance of indicators are critical approaches to realization of sustainability-related objectives.

Access to Funding

Siborurema, Shukla and Mbera (2015) focused on the effects of projects funding on performance and stated that projects in Rwanda have common problems related to financial resources, project technical designs which affect the project implementation time. The project funding factors which were considered during the study were the project cost estimation, the project technical design, and the project funding policy applicable in Rwanda which influences the project

budgeting, these three factors were the research independent variables on one hand; and the project performance which has been measured in matter of project implementation time and was considered as the dependent variable for this research on the other hand. Analysis of the study findings indicated that project funding affects performance of projects since availability of funding predicts quality of projects coupled with timely completion

Switala (2010) focused on project finance and obtaining sufficient funding for the successful completion of project and stated that project Finance aims to get the project off the balance sheet of the sponsor. By doing so the funding that is required will be repaid from the revenues of the project only. Any project financing therefore requires positive cash flow. Project financings are highly geared. In raising the capital, a structure is required that is bankable. Complex contractual arrangements will tie down the rights and obligations of the different parties and allocate the risks between them. A project promoter seeking finance for a new project should preferably seek the services of a financial advisor to assist with the feasibility study of the project and appoint arrangers to raise the funding. The project manager has an important role to perform in the process of successfully raising the funds, not in the least to ensure that resources are used optimally to achieve financial close. Project Finance is well suited as a funding structure for large projects

Anunda (2016) conducted a study on factors influencing the performance of projects implemented by NGOs. Based on information collected from the study, the researcher concluded that when there is no adequate funding, overall performance of the project is impacted negatively and objectives not met. Moreover, the study established that many projects in Nairobi County run out of resources before completion. The study recommends that the planning team should consider resource planning to avoid abandoning projects midway. Project need to build in flexibility in implementation and have a warning system when things are not going as per plan so that corrective action is taken. Resource mobilization and fundraising ought to be diversified so that there is a committed and varied pool of funds to enable execution of projects. Implementing organizations should also get institutional support from Government and donors so that they build local capacity to implement the projects and also build financial, social and organizational sustainability.

Birdsall (2004) focused on why projects fail and stated that secure financing goes hand in hand with managing project costs and budget throughout the project's phases to ensure that expected results and benefits are yielded within the predetermined resource constraints. Many project funders tend to prefer financing short term specific issue projects since they have higher impact; Effective aid, however usually requires core unrestricted funding over a longer period in order to empower local institutional strengthening (Burnes, 2004).

RESEARCH METHODOLOGY

The study applied a descriptive research design, while the target population were 72 companies involved in road construction projects in Nairobi City county. Through the census method, the study collected data from the entire population. Census technique was prefered since the target population was relatively small and accessible. Questionnaires were employed in data collection, this is because they expedite the data collection process and guarantee the anonymity of respondents, thus collection of unbiased data. Out of the 72 questionnaires issued to project

manahers, 61 were collected back. Data analysis was done using SPSS Software and findings were presented using tables , both descriptive and inferential statistics were applied, where inferential statistics encompassed use of correlation and regression analysis to establish the relative influence and importance of the independent variables. Descriptive statistics show the impact each of the variables have on the performance of road construction projects in Nairobi city county.

ANALYSIS AND FINDINGS

Response Rate

The sample size of this study was 72 project managers who represented various road construction firms with active road construction projects within Nairobi City County. The response rate in this case was 85% , which was good.

Table 1: Response Rate

Category	Frequency	Percentage
Response	61	84.7
Non-Response	11	15.3
Total	**72**	**100.0**

Descriptive Statistics

Descriptive statistics are applied to establish prevalence and trends in data. The following sections present analysis of data according to the specific objectives of the study. In addition, data on outcome variable (project performance) is analyzed.

Project Management Competency

The study sought to determine the effect of project management competency on the performance of road construction projects by testing the perceptions of respondents.

Table 2: Project Management Competency and Project Performance

Statements	Mean	Std. Dev
Project manager capability influences project performance	3.4754	1.04254
Project management culture has a significant influence on project performance	3.8689	0.59091
Overall organizational culture determines performance of a project	4.0656	0.74986
Past experience of a leader influences project performance	4.3279	0.78996
Training has significant influence on project performance	3.8852	0.58018
Average	**3.9246**	**0.75069**

Computed average mean of 3.9246 and standard deviation of 0.75069 suggests that project management competency is a key enabler of positive performance of road construction projects.

Project Monitoring and Evaluation

The study sought to determine the effect of project monitoring and evaluation on performance of road construction projects by testing the perceptions of respondents.

Table 3: Project Monitoring and Evaluation and Project Performance

Statements	Mean	Std. Dev
Monitoring and evaluation influence performance of road construction projects	3.1311	1.28420
Monitoring and evaluation systems enhance tracking of performance of road construction projects	3.8033	0.74877
Monitoring and evaluation augments timely delivery of projects	4.1311	0.61848
Fund allocation to road construction projects depends formative evaluations	4.0492	0.86460
Your organization uses key performance indicators to track utilization of resources/inputs	4.0492	0.69345
Average	**3.83278**	**0.8419**

The overall computed mean of 3.83278 and standard deviation of 0.8419 suggests that the role of project monitoring and evaluation cannot be overstated since it provides tools and systems to measure whether interventions are on progress or not. From the findings, it can be deduced that projects monitoring therefore provides the necessary feedback for economic development projects and policy interventions. It is hence undoubtedly that NCC should consider projects monitoring system as a factor that influences performance of road construction projects.

Stakeholder Engagement

The study sought to ascertain the influence stakeholder engagement on performance of road construction projects by testing the perceptions of respondents.

Computed average mean of 3.6459 and standard deviation of 1.1314 implies that the overall process of engaging stakeholders has a significant and positive influence on performance of road construction projects.

Table 4: Stakeholder Engagement and Project Performance

Statements	Mean	Std. Dev
Stakeholder engagement significantly influences performance of road construction projects	3.6066	1.12958
Stakeholder involvement in project identification has significance influence on road construction projects Performance	3.7869	1.08189
Stakeholder involvement in project monitoring has significance influence on Performance of road construction projects	3.3607	1.18368
Engaging stakeholders ensures realization of project sustainability related goals	3.6066	1.11473
Government stakeholders bases their influence on laws/regulations	3.8689	1.14710
Average	**3.6459**	**1.1314**

The finding agrees with the study done by Azhar et al. (2015) who suggested that effective engagement helps translate stakeholder needs to organizational goals and creates the basis of effective strategy development. Level of involvement measures how much a person is invested in a problem or organization. Informing means that an organization is committed to providing information to stakeholders as stakeholders are known to seek information, while organizations are deemed to be information processing.

Access to Funding

The study sought to determine the effect of access to funding on performance of road construction projects by testing the perceptions of respondents.

An overall computed mean of 3.9016 and standard deviation of .70012 strongly signifies that access to funding has a significant influence on the performance of road construction projects.

It is critical to set aside adequate financial resources at the planning stage. The required financial resources for timely completion of construction projects should be considered within the overall costs of delivering the agreed results and not dedicated for the function.

Table 5: Access to Funding and Project Performance

Statements	Mean	Std. Dev
Limited funding delays project scheduling	3.9016	0.70012
Late funding raises the overall cost of completing projects	4.0164	0.71861
Access to funding determines quality of construction projects	3.9836	0.78511
Poor planning and coordination affect access to funding	4.0164	0.67062
Lack of organizational capacity reduces access to funds	4.2623	0.79376
Average	**3.9016**	**0.70012**

Performance of Road Construction Projects in Nairobi City County

Collecting data on the perceptions of the respondents on performance of road construction projects enabled the study to run inferential statistics on the relative importance of each independent variables considered in this study against performance of road construction projects.

Table 6: Project Performance

Statements	Mean	Std. Dev
Road construction projects are the biggest contributors to economic development	3.2131	1.22631
Road construction projects contribute to domestic trade	3.5902	1.03886
Road construction projects enhance better access to markets	4.2623	0.79376
Performance of road construction projects are measured by customer satisfaction	3.5410	1.16295
Performance of road construction projects hinges on return on investment	3.9672	0.65745
Average	**3.7148**	**0.9759**

Overall, the average mean of the responses from the statements was 3.7148, implying that the majority of the respondents were agreeing with most of the statements considered in this particular study; however, responses from the respondents were varied as demonstrated by a standard deviation of 0.9759. These findings were in line with those of Davies (2013) who found out that Performance is about how well something can be done and to measure project performance in terms of time, cost, quality, return on investment and economic development.

Inferential Statistics

The study applied inferential statistics as a basis of establishing the relationship among variables.

Regression Analysis

The multiple regression analysis model was used to show the linear relationship between the dependent variable which is factors influencing performance of road construction projects in Nairobi City County and the independent variables which are project management competency, project M&E, stakeholder engagement and access funding. The coefficient of determination R^2 and correlation coefficient (r) show the degree of association between the Variables and performance of roads projects in Nairobi City County. The results of the linear regression indicate that R^2=.331 and R= .576 this is an indication that there is a strong relationship between project management competency, project M&E, stakeholder engagement and access funding and the performance of road construction projects at NCC. Findings are presented in the following tables;

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.576[a]	.331	.284	0.6107

a. Predictors: *(Constant), funding access, stakeholder engagement, project management competency, project M&E*

b. Dependent Variable: *Project performance*

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (projects performance) that is explained by all the 4 independent variables. R square value of .331 indicates that the four independent variables that were studied, explain 33.1% of variation of performance of road construction projects. This therefore means that other factors not studied in this research contribute 66.9% of variance in the dependent performance of road construction projects.

Table 8: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.349	4	2.587	6.936	.000[b]
	Residual	20.888	56	.373		
	Total	31.237	60			

a. Dependent Variable: *Project performance*

b. Predictors: *(Constant), funding access, stakeholder engagement, project management competency, project M&E*

The P value was 0.000 which was less than 0.05 thus showing that all the independent variables; project management competency, project monitoring and evaluation, stakeholder engagement, and access to funding, have a significant influence on performance or road construction projects in Nairobi City County. If the value of P was larger than 0.05 significance value then the independent variables would not explain the variation in the dependent variable. F value of 6.936 with a significant level of 0.000 is enough to conclude that the independent variables significantly influence the performance of road construction projects.

Table 9: Multiple Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.443	1.718		2.585	.012
	Project management competency	.195	.251	.087	0.779	.039
	Project M&E	.586	.214	.313	2.736	.008
	Stakeholder engagement	.351	.092	.430	3.835	.000
	Funding access	.131	.260	.057	.504	.016

a. Dependent Variable: *Project performance*

As presented in the table, (X1) project management competency had a beta coefficient of 0.195 which was found to be positive at 0.039 significant level. (X2) project M&E had a beta coefficient of 0.586 which was found to be positive at 0.008 significant levels. (X3) stakeholder engagement had a beta coefficient of 0.351 which was found to be positive at 0.000 significant level and (X4) funding access had a beta coefficient of 0.131 which was found to be positive at 0.016 significant levels. The results in table 4.13 showed that the coefficients of all the four independent variables; X1, X2, X3 and X4 are all significant. The respective calculated t-statistics for the coefficients are 0.779, 2.736, 3.835 and 0.504 with P-values of 0.039, 0.008, 0.000 and 0.016 respectively. These p-values are all less than 0.05 implying that all the independent variables significantly determined project performance in Nairobi City County. The regression model generated expressed as; $\mathbf{Y = \beta 0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e,}$ thus becomes:

$$\mathbf{Y = 4.443 + 0.195 X_1 + 0.586 X_2 + 0.351 X_3 + 0.131 X_4 + e}$$

According to the equation, taking all factors; (project management competency, project monitoring and evaluation, stakeholder engagement, and access to funding) constant at zero, performance of road construction projects will be 4.443. The data findings also showed that a unit increase in project management competency variable would lead to a 0.195 increase in performance of road construction projects. A unit increase in project monitoring and evaluation would lead to a 0.586 increase in project performance, while a unit increase in stakeholder engagement would lead to a 0.351 increase in performance of projects. A unit increase in access to funding would lead to a 0.131 increase in performance of road construction projects. This signifies that project monitoring and evaluation contribute more to the performance of road construction projects in Nairobi City County followed by stakeholder engagement, project management competency, and access to funding respectively.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

Analysis of data on the influence of project management competency reveals that personality traits, experience, knowledge, attitudes, and skills of the managers predicated the relationship between project management competency and performance of road construction projects. Analysis of data on the influence of project monitoring and evaluation on performance of road construction projects established that monitoring and evaluation is important in the construction projects since it guides resource mobilization and enhances identification of the population needs during the baselines and formative stages.

Analysis of data on the influence of stakeholder engagement found that most of the road construction companies reviewed in this study was committed to providing information to stakeholders. In addition, the study established that most road construction companies underscored the need to involve stakeholders in decision-making. Analysis of data under the influence of access to funding found that access to funding remains of the critical challenges that road construction companies have to face in an endeavor to complete construction projects. Moreover, the study found that road construction companies face access to funding challenges, such as collateral requirement, lack of or inadequate knowledge of funding opportunities, and structure of funding, where these challenges affect the scope, quality, time, and cost of projects.

Conclusion

The study concludes that project management competency has a positive and significant effect on performance of road construction projects since managers who are competent enhance effectiveness and efficiency of projects, they are in charge. The study made a conclusion that project monitoring and evaluation is an indispensable process that enables project managers to continuously collect data for the purpose of measuring the progress of projects. The study also concludes that involving stakeholders in decision-making and provision of regular feedback is a crucial enabler of positive performance in road construction projects. A conclusion was made that access to funding is a major challenge to road construction projects' performance in terms of scope, quality, costs, and time.

Recommendation

The study recommends that road construction contractors and/or companies should leverage project management competency methods, such as having proper plans, appropriate communication with stakeholders, and put in place firm objectives coupled with use of right project management tools. Accordingly, the study also recommends that road construction companies and contractors should use monitoring and evaluation tools and practices as a basis of planning for projects and tracking their progress with a view to establishing the extent to which projects are meeting their time schedules based on the budgeted resources. Moreover**,** the study recommends that road construction companies and contractors should map and profile stakeholders as an approach of knowing their relative importance to the organization and how to handle them should stakeholder issues arise. Furthermore**,** this study recommends that road construction companies and contractors should map resource accessibility and possible availability during formative and/or baseline planning stages with a view to establishing input requirements so that projects are within the budget schedule.

Recommendations for further studies

i. Need to conduct a study across the country with a view of establishing the influence of the factors that affect road construction projects.
ii. further study on factors influencing performance of various construction projects
iii. undertake a study on how project managers could measure performance of road projects based on various project components

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