



PROJECT MANAGEMENT DRIVERS AND PERFORMANCE OF ROAD CONSTRUCTION PROJECTS IN NAIROBI COUNTY, KENYA

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ABSTRACT

This study sought to investigate the influence of Project Management Drivers on performance of roads construction projects in Nairobi City County, Kenya. The study was guided by the following objectives: to establish the influence of portfolio direction on the performance of roads construction projects in Nairobi City County, Kenya and to identify the influence of project sponsorship on the performance of roads construction projects in Nairobi City County, Kenya. This study adopted cross-sectional design research and used a descriptive design approach and used a positivist research paradigm. The unit of analysis was national government roads projects from the year 2007 to date while the unit of observation was senior management staff per project. Therefore, the target population for the study was 523 respondents. The overall sample size for this study was determined using a formula by Krejcie and Morgan (1970) which obtains 222 respondents. This study employed stratified random sampling to select study sample. Primary data was used and was collected using a semi structured questionnaire. Samples of questionnaire were pilot tested to 22 respondents to test for reliability and validity. Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 23 software. Qualitative data collected was analyzed using content analysis and presented in prose form. Quantitative data was analyzed using descriptive statistics and presented in tables and figures. The study also computed correlation and regression analysis to test the relationship between study variables and test the research hypothesis. The study concludes that portfolio direction has a positive and significant effect on the performance of roads construction projects in Nairobi City County, Kenya. In addition, the study concludes that project sponsorship has a positive and significant effect on the performance of roads construction projects in Nairobi City County, Kenya.

Key Words: Project Management Drivers, Portfolio Direction, Project Sponsorship and Performance of Roads Construction Projects

Background of the Study

During the last years of 20th century, Project Management focused on development of new methods, techniques, and tools to ensure project's success as well as competence of project team members (Maria, 2018; Pinyarat, Vicky, Ray, & Burns, 2018). Still, the success rate of projects remained low as evidenced by several surveys and studies (Pinyarat et al., 2018). Sanderson (2016) identifies the main performance problems as misaligned or underdeveloped governance mechanisms, meaning that project actors are unable to provide a sufficiently flexible and robust response to the inevitable turbulence of the project or organizational environment. Consistent with this, Khan Asadullah *et al.* (2019) indicates the unsatisfactory performance and failure of large-scale government projects is due to the lack of governing surveillance and ambiguous project outcomes, weak Project Management Drivers mechanism, and ineffective management control.

The term 'governance' is derived from the Greek verb "Kubernao", which means "to steer" (Kanyane & Sausi, 2015). It is the "act of governing or directing the policies, management, and activities of an organization at the highest level, with the authority, credibility, and responsibility to do so" (Kanyane & Sausi, 2015). The term governance is associated with words like government, governing and control (Too & Weaver, 2018). In the context of organization, governance provides a framework for ethical decision making and managerial action that is based on transparency, accountability, and defined roles (Muller, 2019). Governance is concerned with: Accountability; Disclosure and transparency; Roles and responsibilities; Risk management; Decision-making; Ethics; Performance and effectiveness (Maria, 2018).

According to Too and Weaver (2018), there are two schools of thought about governance. The first school of thought originates from organizations such as the Organization for Economic Co-operation and Development (OECD, 2004), various Institutes of Directors for example (Australian Institute of Company Directors, 2018; Institute of

Directors Southern Africa, 2019) and the agencies responsible for governing stock exchanges. In this thinking, governance is a single process with different facets such as; governing of relationships, governing change, governing the organization people, financial governance and governing visibility and sustainability (Too & Weaver, 2018). The other school of thought developed by IT managers, project managers, officials within government departments, and academics who work exclusively within these disciplines postulates that different types of governance are needed in different sub-units of an organization. Their view is that governance is a function of management or any entity responsible for making decisions and/or overseeing (controlling) the work of the organization or its projects. Each governance practice operates independently from the other and there is no integrated theory of practice (Too & Weaver, 2018).

According to (Too & Weaver, 2018) governance is not management, and the two functions must be separated. Corporate governance is concerned with a set of relationships between an organizations management, its board, owners and other stakeholders (Anthony & Sena, 2019). It provides the structure through which the objectives of the company are set, the means by which achievement of those objectives are agreed and how company performance against those objectives is monitored (Anthony & Sena, 2019). Both governance and management are hierarchal systems, the people at the top of the system delegate authority and responsibility for defined actions to people lower in the hierarchy and use surveillance and assurance processes to ensure these delegations are being exercised properly (Law & Martin, 2019). According to Too and Weaver (2018) the rise to prominence of the idea of governance stems from difficulties of hierarchical coordination by organizations or the state. It is therefore important that governance should cover all levels of organization flowing from the board level to management responsible for execution, down to the project level (Too & Weaver, 2018).

Project Management Drivers system cannot operate without the effective support of the organization's management system. In this context, the role of

management is the mirror image of governance (Too & Weaver, 2018). Pinyarat *et al.* (2018) indicates that Project Management Drivers should flow from top-level management down to the project-level personnel. The governance system defines the structures used by the organization, allocates rights and responsibilities within those structures and requires assurance that management is operating effectively and properly within the defined structures. The role of management is to manage the organization within the framework defined by the governance system; this applies particularly to the governance and management of projects (Too & Weaver, 2018).

The governance of public sector infrastructure projects has become an important topic of interest and attracted much attention and debate in the project, program, and portfolio management literature since the late 1990's (Asadullah *et al.*, 2019; Bekker, 2018). Today, Project Management Drivers is becoming a central focus for policymakers seeking to ensure success in selecting, designing, and implementing government-sponsored programs of multi-projects (Asadullah *et al.*, 2019). During the last decade organizations have adopted Project Management Drivers as a strategy to meet organizational objectives (Asadullah *et al.*, 2019). Earlier, Bekker (2018) had indicated the quest to apply Project Management Drivers is fueled by the growing frustration of especially large capital project failure and the realization that project management at a technical and operational level should be complemented and supported at strategic and institutional management level. This is emphasized by an analysis by Wilden and Biesenthal (2018) of 62 articles published in 21 non-project management specific journals and 34 articles across the leading project management journals, that discussed Project Management Drivers. They found that Project Management Drivers was important in ensuring successful project delivery.

Project Management Drivers refers to organization and communication management based on the best project management practices (Maria, 2018) and has developed from the broader concepts of corporate governance (Anthony & Sena, 2019). Project Management Drivers extends the principles

of corporate governance into the management of individual capital projects through governance structures and the management of projects at a business level (Anthony & Sena, 2019). The Association for Project Management (APM, 2017) defined Project Management Drivers as “a concern of the areas in corporate governance that are particularly related to project activities.” Association for Project Management (APM) advocates strategic alignment as a significant source of good governance (APM, 2016). Hence, the Project Management Drivers helps in aligning the project output to the strategy of the organization which will help in enhancing the project performance (Asadullah *et al.*, 2019).

Pinto (2018) stated that governance of projects provides the structure to execute the projects, thus resulting in an increase in the probability of project success. Later, this argument was also supported by McGrath and Whitty (2015) who described Project Management Drivers as “the system by which a project is governed, directed and controlled”. Asadullah *et al.* (2019) have identified that “Project Management Drivers is a set of management systems, rules, protocols, relationships and structures that provide the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation.” Good Project Management Drivers for the enterprise project management is a system of appropriate checks and balances that enables transparency, accountability and defined roles (Muller, 2019) while at the same time supporting the efforts of project and program managers in delivering their project in support of organizational objectives (Too & Weaver, 2018).

There is a distinction between Project Management Drivers and governance of projects; Project Management Drivers looks at the governance of individual projects whereas the governance of projects looks at a group of projects, such as a program or portfolio of projects and therefore has a broader perspective (Müller, Pemsel, & Shao, 2015). Governance applied to projects, programmes and portfolios and to project management, coexists within the corporate governance framework (Maria, 2018). It includes a value system, responsibilities, processes and

policies definitions, to allow projects to achieve organizational objectives (Maria, 2018). According to Too and Weaver (2018), value and value creation are the central elements of business strategy and the success of organizations depends on the extent to which they create for customers what is of value to them. The value of a project refers to the explicit and implicit functions created by the project, which can satisfy the explicit and implicit needs of stakeholders (Too & Weaver, 2018). The success of projects has a direct impact on the success of the business. In a portfolio environment, effective Project Management Drivers is concerned both with doing the right projects and getting them right first time, every time (Pinyarat *et al.*, 2018). Doing the right projects requires the project goals to be aligned with the strategic objectives of the business by means of an effective benefits management system. Doing the projects right ensures that project control processes are managed effectively to deliver expected benefits to the business and its stakeholders (Anthony & Sena, 2019).

Effective governance of project management ensures that an organization's project portfolio is aligned to the organization's objectives, is delivered efficiently and is sustainable. Project Management Drivers also supports the means by which the board, and other major project stakeholders, are provided with timely relevant and reliable information (Anthony & Sena, 2019). In support of this view Maria (2018) indicates that "the governance of a project involves a set of relationships between the project's management, its sponsor (or executive board), its owner, and other stakeholders. It provides the structure through which the objectives of the project are set, and the means of attaining those objectives and monitoring performance are determined."

In a multi-project environment Project Management Drivers has two key functions. The first function is a decision about which projects the organization should approve, fund and support. The second function of the Project Management Drivers system is the oversight and assurance (Too & Weaver, 2018). An attribute of good governance is that it has the aptness to navigate the projects through different uncertainties and unexpected

events (Asadullah *et al.*, 2019). The Project Management Drivers prerequisite is to explore how resources and risks are to be assigned among stakeholders to define the control measures for achieving the targeted objectives, which are defined by legal and regulatory mechanisms, with the aim of ensuring better utilization of public resources (Asadullah *et al.*, 2019). Further, (Henisz, Levitt, & Scott, 2016) indicates that the aim of Project Management Drivers is to mitigate the conflicts and ensure reliable project performance through mechanisms and different sets of institutional arrangements. Project Management Drivers will outline the relationships between all internal and external groups involved in the project; describes the proper information flow to all project stakeholders; ensures the appropriate review of issues encountered within each project; ensures that required approvals and directions for the project are obtained at each appropriate stage of the project (Maria, 2018). It can support a collaborative operational environment and provide a sound basis for achieving project success (Asadullah *et al.*, 2019).

Ralf Müller, Li Zhai, and Wang (2017) have recommended standardized approaches to Project Management Drivers for successful completion of the project and the project-based part of the organizations. The Association for Project Management (APM) Directing Change: A Guide to Governance of Project Management (APM, 2014) suggests four main components of the governance of project management. These are: portfolio direction; project sponsorship; project management effectiveness and efficiency later renamed project management capability; and disclosure and reporting.

The Public Procurement and Assets Disposal Act, 2015 (GoK, 2015) provides for the establishment of Project Implementation Teams which is a governance mechanism for government funded projects. In addition, the Kenya Ministry of Finance and Planning (GoK, 2020) has issued guidelines to provide a framework for efficient and effective management of public investments. The guidelines provide for; a standard approach in project cycle management, establishment of resource allocation panel, establishment of project committee and

implementation of monitoring, evaluation and reporting. The e-ProMIS is the Government of Kenya's main platform for monitoring the performance and implementation of development projects and programs (Synergy International Systems, 2020). The e-ProMIS fully automates the collection, reporting, and analysis of data for over 2000 projects by the Ministry of Finance, the donor community, line ministries, county governments, project monitoring units, and other budgetary units across the country (Synergy International Systems, 2020).

Through Executive Order No. 1 of 2019, dated Monday, January 21 2019, the President directed the formation of the National Development Implementation and Communication Cabinet Committee; the National Development Implementation Technical Committee; 8 Regional Development Implementation Co-ordination Committees and 47 County Development Implementation Co-ordination Committees. It provides a framework for facilitating effective oversight, Coordination, implementation, administration and supervision of Government Development Programmes and Projects.

Statement of the Problem

Roads projects in Kenya have been characterized by low rates of budget absorption with only about 60% of the budget spent in 2006 (World Bank, 2017). There also have been cost overruns of as much as 80% over the original contract amounts, and completion periods of twice the initial contract implementation period. The quality of the road works has also suffered leading to shortened life (sustainability) of public works. This has been ascribed to inadequacies in the system for supervising the construction projects (World Bank, 2017). Consistent with these findings, the Kenya Roads Board submits that 76% of the 29 roads projects under implementation by KeNHA in 2014-15 Financial Year, were behind schedule. The KRB recommended preparation of regular progress report for progress monitoring and overall improvement of supervision of works to ensure timely delivery of projects (KRB, 2015).

The construction of Thika Super Highway in Kenya was estimated to cost Ksh. 26.44 billion but the

final cost escalated to Ksh. 34.45 billion, a 30% increase. In addition, the completion of the project was delayed by two years with the initial completion date of July 2015 being revised to July 2017 (Nyandika & Ngugi, 2017). A report by the Office of the Auditor General (KeNAO, 2016) on management of road projects by the Ministry of Transport and Infrastructure established that there were contract variations in 44% of the 34 projects selected for review which resulted in increased cost and delayed completion of the projects. The KeNAO report attributed this to weak project management practices (KeNAO, 2016). The poor performance of the roads projects has also attracted the attention of the Parliamentary Budget Office (PBO) which has recommended screening, appraisal, selection/rejection, budget allocation and, monitoring and evaluation to improve project performance (PBO, 2016).

According to the Kenya Urban Roads Authority (KURA) December 2018 projects progress report, 9 out of 24 projects which is equivalent to 37.5% of road construction projects that were expected to be completed by December 2018, had exceeded their set contractual completion dates. The Nairobi Outer Ring Road improvement project, for example, was scheduled to be completed in July 2018 but had achieved 94% completion by December 2018 while its cost had escalated from an initial contract sum of Ksh. 7,395,183,298 to Ksh. 9,585,543,413 which reflects a 29.6 % increase (KURA, 2018). To address these challenges, the National Treasury has developed a policy that recommends that each ministry and state agency dedicate one per cent of their development budget to monitoring and evaluation (Igadwah, 2018). Mwaniki (2020) citing an International Monetary Fund (IMF) report indicates that half of the 1,000 public projects most of which comprise of roads have stalled and will require a staggering Ksh. 1 trillion to complete. This situation is ascribed to lack of effective screening of the projects allowed to enter the budget line (portfolio direction) creating challenges in financing ongoing projects.

According to Klakegg, Williams, and Shiferaw (2016) though the developed nations like the United Kingdom and Australia have records of achievements in managing public sector developmental projects there is a dire need for better understanding of project management

practices in the context of developing countries. Through effective Project Management Driverssystem, public sector requirements could be addressed fully by minimizing the potential for delaying or disrupting the project and considerable pressures from the stakeholders (Asadullah *et al.*, 2019). There are only a few studies on Project Management Driverswhich have been done in Kenya such as (Njogu *et al.*, 2018; Adek, 2016) which are however shallow and suffer from contextual and conceptual gaps. The study by Njogu *et al.* (2018) suffers from a contextual gap since it focuses on HIV projects while the focus of this study will be road construction projects in Kenya. The study by Adek (2016) also face methodological issues since it is a case study and explores specific contextual area (County Government of Mombasa). The variables in this study are also different from those in the studies undertaken by Njogu *et al.* (2018) and Adek (2016). It is due to these conceptual, methodological and contextual gaps that the current study seeks to investigate the influence of Project Management Drivers on performance of roads construction projects in Nairobi City County, Kenya.

General Objective

To examine the influence of Project Management Drivers on performance of roads construction projects in Nairobi City County, Kenya.

Specific Objectives

1. To establish the influence of portfolio direction on the performance of roads construction projects in Nairobi City County, Kenya.
2. To identify the influence of project sponsorship on the performance of roads construction projects in Nairobi City County, Kenya.

LITERATURE REVIEW

Theoretical Framework

Agency Theory

Agency theory is founded on Jensen and Meckling (1976) work and takes an economic view of the shareholder and manager relationship in companies

by assuming rational and self-interested actors. It posits that corporate managers (agents) may use their control over the allocation of corporate resources opportunistically to pursue their objectives that are not in line with the interests of the shareholders (principals)(Jensen & Meckling, 1976). This is manifested when the principal – agent interests are in conflict and the agent act in a self-interested, utility maximizing manner (Mitnick, 1973). J. H. Davis, Schoorman, and Donaldson (1997) ascribed this behavior to the lower levels of Maslow (1970) hierarchy of needs. The principal-agent problems is associated with information asymmetry when one party, for example the project manager, has more or better information than the other, for example the project sponsor (Wiseman, Cuevas-Rodríguez, & Gomez-Mejia, 2012). Jensen and Meckling (1976) proposed ways to solve this problem through contracts and incentives that motivate agents to act in the best interest of their principals, controlled through related control structures. According to (J. H. Davis *et al.*, 1997) agency costs arise when control mechanisms are applied to ensure that the agent acts in the best interests of the principal.

In the project management context, Agency theory has been intensely used to explain the relationship between the owner and manager of a project (R. Turner, Hueemann, Anbari, & Bredillet, 2010). According to agency theory, project managers are responsible for decision-making in the organization on behalf of the shareholders or project owners. According this theory, short term project performance (time and cost performance) can be achieved by development of controlling and monitoring mechanisms which govern project manager's behavior. In project management, this theory gives enormous credit to the worth of contracts as controlling mechanisms for governing these relationships (Derakhshanlavijeh *et al.*, 2019). Consistent with this view, (R. J. Turner, Hueemann, Anbari, & Bredillet, 2010) adds that projects play the role of agencies of the parent organization, where the sponsor (the principal) appoints a project manager (an agent) to manage the project on his behalf. Agency theory has been criticized because it does not consider that the principle-agent transitions are socially rooted and

thus impacted by broader institutional contexts (J. Davis & Schoorman, 1997; Wiseman et al., 2012).

Stewardship Theory

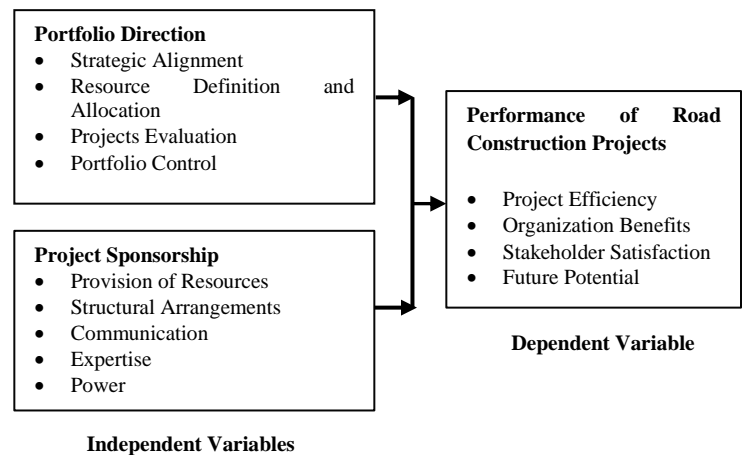
The stewardship theory is a subset of the agency theory (Derakhshanalavijeh et al., 2019). It differs from agency theory by stating that stewards' interests and utility motivations are directed by a pro-organization behavior, holding that there are no conflict of interests between managers and owners (Derakhshanalavijeh et al., 2019). Stewardship theory arose in response to the criticism regarding the generalization of the agency theory. It takes a psychological perspective towards governance and states that the actors (managers) are stewards whose motives are aligned with the higher level objectives of their principles rather than their own, short term utility maximizing objectives (Donaldson and Davis, 1991). This behavior is associated with the Maslow's (1970) hierarchy of needs. The steward differs from the agent in that the steward is trustworthy and will make decisions in the best interests of the organization, whereas an agent needs to be incentivized and/or controlled to do this (Davis et al., 1997b) Robert Joslin, Ralf Müller, 2016.

Under stewardship theory, governance structures tend to empower stewards because they can be trusted (Maria, 2014). However, stewardship theory has been criticized, because it views the organization in a static way and does not account for stewards resorting back to an agent position when their positions are threatened (Joslin & Müller, 2016). Project managers are considered as stewards who believe that their ultimate position improves by improving organizational performance (Turner & Keegan, 2001; Müller et.al., 2013; Müller et.al., 2014) (Derakhshanalavijeh et al., 2019). Therefore, according to stewardship theory, project managers are not narrowed by their short-term beneficiary needs. Instead, it is the trust in the project owners and the organizational aims which shapes the project managers' behaviour (Davis et.al., 1997) (Derakhshanalavijeh et al., 2019). Project organizations, therefore, will be more successful in satisfying shareholders if they empower their stewards (i.e. project managers) (Biesenthal & Wilden, 2014; Joslin & Müller, 2016 also

Asadullah, Muhammad,2018) (Derakhshanalavijeh et al., 2019). The focus of stewardship theory is on the impact of project managers on the Project Management Drivers.

Conceptual Framework

The conceptual model in Figure 1 shows the relationship between seven variables under this study. The independent variables; portfolio direction and project sponsorship (APM, 2004) which suggests these as the four main components of governance of project management.



Portfolio Direction

Portfolio Direction also referred to as Project Portfolio Management (PPM) can be termed as a combination of projects under the sponsorship of a particular organization sharing scarce resources (Abubakar *et al.*, 2018). Portfolio Direction ensures that the identified projects are within one portfolio, and have been evaluated and directed to align with the key objectives and constraints of the organizations (APM, 2014). It involves projects that are selected and managed in line with strategy and that resources are allocated to projects with the optimization of the entire portfolio in mind (Abubakar et al., 2018). According to Padovani, Carvalho, and Muscat, (2016) strategic alignment is fundamental to transform strategies into actions. The authors indicate that the connection between the strategy and the selection and implementation of initiatives occurs through the execution of projects, with portfolio direction being responsible for this alignment. Kerzner (2016) indicates that the PPM methodology helps project-oriented organizations to define the type and number of projects they can perform with available resources.

According to Unger (2015), the performance of project portfolio depends on the portfolio direction practice which is always discussed by the executive board. He further stated that in the evaluation stage, the list of candidate projects should be prepared annually. The list should include information about the goals, deadlines, technical specifications, quality, and running costs. PPM covers different stages of decision, so projects that add value to an organization can be selected, prioritized, and balanced (Lacerda, 2016). It is a continuous process of decision-making to select and keep the best initiatives (project mix), and carry out projects that are strategically aligned with the organization's goals (Lacerda, 2016).

Project Sponsorship

According to the Project Management Book of Knowledge (APM, 2017) a project sponsor is defined as "the person or group that provides the financial resources, in cash or in kind, for the project." (APM, 2017). Project sponsorship is one of the four dimensions of Project Management Drivers, and is an important link between the organization's senior management level and the management of the project with decision making, directing, and representational accountabilities. The sponsor is responsible for ensuring that effective governance framework is established in the project (Louw, Wium, Steyn, & Gevers, 2018). The project sponsor is "generally accountable for the development and maintenance of the project business case document" and is responsible for the realization of the benefits enumerated in the business case (Louw *et al.*, 2018; PMI, 2017).

In all kinds of governance, top management and sponsors have played a significant role, and they have ensured the necessary support and the governance requirement for Project Management Drivers (Maria, 2018). According to (Ziemba & Obła, 2017) top management support is one of the most vital success factors that can negatively affect the implementation of projects. Top management is generally the individuals functioning in the capacity of Chief Executive Officer, President, Chairman/Chairperson, Director or other official positions at senior management level (Ahmed, Mohamad, & Ahmad, 2018).

The sponsor role is at a senior level in the organization often referred to as the client or customer; the sponsor plays a leadership position rather than managerial position and is positioned at the interface between the owner the owner and the project manager for effective decision making especially issues beyond the control of the project manager. This positioning is however specific to the organizational context with upward relationships with the board/senior executives and downward relationships with the project manager(s) (Louw *et al.*, 2018). Based on Interpretive Structural Modeling (Zhao, Jiang, Li, & Liu, 2017) established that the abilities and experiences of the project owner and project manager are the most important influencing factors for project success in the Chinese context.

Following an exploratory research, Boonstra (2017) identified the dimensions of top management support as; provide resources, structural arrangements, communication, expert and power. A critical role is played by the top management in establishing and providing the resources needed for the successful accomplishment of the project (Staehr, 2019). It is very important that top management controls the resources necessary to support any project (Bai & Sarkis, 2017). Top management provides necessary human, material and financial resources required for the project, to sell the project with visible championship and enthusiasm, and support the project by exhibiting political power (Ahmed *et al.*, 2018). Top management institute and enforces appropriate processes, procedures, and project structures for achieving project objectives, system adaptation, improving organizational efficacy, effective controlling mechanism, implementing organizational change, and strengthening the stakeholder's support (Boonstra, 2017).

Empirical Review

Portfolio Direction

Numerous researchers have studied the importance of project portfolio management. Williams, Klakegg, Magnussen, and Glasspool (2019b) carried out two case studies of Skjold class Fast Patrol Boat (FPB) project in Norway and the Ground Based Air Defence (GBAD) project in the

UK. The study on the Fast Patrol Boat (FPB) project established that no matter how strong professional advice may be for, or against, a project, and whatever the result of extensive use of rational methods, the final decision is a political one. The study on the Ground Based Air Defence (GBAD) project revealed the need to understand project requirements and the best way to achieve them at the inception stage of complex projects in a cost-constrained and a highly complex and changing decision environment.

Asadullah *et al.* (2019) undertook a case study of infrastructure development programme in Gilgit-Baltistan of Pakistan. The study assessed 126 projects from three districts of Gilgit-Baltistan (Diamer, Gilgit and Baltistan). The study revealed that the project requirements were planned without any formal appraisal phase. As a result, the projects were not envisaged in a thorough manner in the early stages of the project.

Lacerda, Martens, and Freitas (2016) conducted a research aimed at proposing a project portfolio management model adapted to the context of nonprofit organizations. An exploratory case study approach, adopting qualitative analysis was used. Data was collected through participant observation and analysis of documents, records on file, and excerpts from interviews. This led to identification of seven PPM dimensions; resources definition dimension, strategic alignment dimension, project classification dimension, project evaluation dimension, projects selection and prioritization dimension, portfolio control dimension, and resources allocation dimension.

Padovani *et al.* (2016) conducted a research study on project portfolio adjustment and balance practices for a Brazilian Chemical Company. Information was collected from interviews, documents and data from enterprise systems from 1000 projects implemented in the period 2001 to 2005. The findings of the study were that more attention is given to the project selection stage, neglecting the adjustment stage. The study recommended introduction of systematic adjustment and balance of project selection.

Project Sponsorship

Gitagia (2015) undertook a study to establish the influence of management strategies on success of projects undertaken by construction companies in Mombasa, Kenya. The study established that level of top management support including holding of regular meetings, support in risk identification and involvement in solving conflicts and mediating between groups were the greatest roles of the top level management. This was however a case study that focused on only one company and therefore the findings cannot be generalized.

Ahmed *et al.* (2018) undertook a study to examine the effect of multidimensional top management support on project success. Cross-sectional data was collected from 208 project management professionals across the world. The study revealed that 'provide resources' and 'power' dimensions of top management have significant influence on project success.

In Norway, the Norwegian Centre of Project Management has established a research and development project to gain a better understanding of the role of the project owner and contribute to more professional project owners in the future (Andersen, 2016). The survey was based on a convenience sampling from amongst students on part-time executive master's programmes in project management. In-depth interviews were carried out with eleven project owners and fourteen project managers from six enterprises in Norway. Early findings of the study are that project owners are rather weak by not fulfilling the role as prescribed by theory. The interviews however introduced a different perspective showing a rather satisfactory performance by the project owners.

Reddan (2015) undertook a study to evaluate in part the knowledge area 'Project Quality Management', particularly the use of the Quality Management Plan (QMP) and Project Management Tools and Techniques (PMTT) on quality on successful project implementation. Data for the research was collected through questionnaires. The population for the study was 116 participants identified through social media, LinkedIn message and direct email. There were 48 responses. The findings of

this research revealed that participants are aware there is insufficient quality planning and that there should be more widespread use of the QMP. The quality toolset is one of the least used in project management. The research also established that though people use PMIT, they however tend to stick to familiar ones.

RESEARCH METHODOLOGY

This study adopted cross-sectional design research and will use a descriptive design approach. The unit of analysis was national government roads projects implemented by KeRRA, KENHA and KURA and from the year 2007 to date while the unit of observation will be senior management staff per project (the Project Engineer, Resident Engineer and the Assistant Resident Engineer). There are 243 national government roads projects from the year 2007 to date. The study was target senior management staff per project as they have governance mandate in the projects. There are a total of 523 senior management staff who was targeted.

The overall sample size for this study was determined using a formula by Krejcie and Morgan (1970). Using Cohen (1988) statistical power analysis, the sample required to perform a correlation analysis from a population of 500 would be 85 while that which is required to perform a multiple regression analysis would be 116 (Cohen, 1992). From this argument (Kithinji, Gakuu, & Kidombo, 2017) argues that for a population of about 500, the sampling size can range from a minimum of 85 for performing correlation analysis to a maximum of 217 as recommended by Krejcie and Morgan (1970). Kiihoh (2015) adopted the Krejcie and Morgan formula in her study aimed at establishing the influence of leadership aspects on performance of Information Technology projects at Fintech Kenya and determined the sample size to be 80 from a population of 100 employees. Abubakar (2018) utilized the Krejcie and Morgan table to determine the sample size for their study on project portfolio management strategies in housing estate development organizations in Nigeria's built environment.

In this study, primary data was collected using a semi structured questionnaire because they are cost effective and convenient to collect and summarize responses (Zikmond, 2013).

The face-to-face method was adopted for this study. The face to face approach takes two forms; self-administered questionnaire or, an interview approach where the researcher reads the question to the respondent and records the feedback. This study adopted the self-administered questionnaire approach.

Before embarking on data collection, relevant approvals were obtained. An introductory letter from the JKUAT Nairobi campus introducing the researcher to relevant authorities for field data collection will first be obtained. This letter was used to obtain the permit for research from the National Commission for Science, Technology and Innovation (NACOSTI). In addition, the researcher sought permission from the respective chief executives in order to be allowed to collect data from the Roads Authorities. Contact details of all Resident Engineers will be obtained from the headquarters of the Roads Authorities. Follow up calls and emails will then be made to book an appointment.

A pre-test and pilot survey was conducted to ascertain the validity and reliability of questionnaire. According to Sekaran (2013) a pilot study is necessary for testing the reliability of data collection instruments. Marczyk, DeMatteo, and Festinger (2015) observe that pilot test is the start phase in data gathering of the research process. According to Cooper and Schindler (2017) a pilot test is conducted to detect weaknesses in design and instrumentation and to provide proxy data for selection of a probability sample. Pilot testing refines the questionnaire so that respondents to have no problems in answering the question (Saunders *et al.*, 2009).

Data was analysed using the Statistical Package for Social Sciences (SPSS) version 23 software. The study performed descriptive analysis. Descriptive statistics enable the researcher to meaningfully describe a distribution of measurements and summarize data (Kothari, 2009; Mugenda & Mugenda, 2003).

Quantitative data was analysed using descriptive statistics including frequency, percentages and means, summary graphs, pie charts and frequency distribution tables were employed to portray the sets of categories formed from the data.

ANALYSIS AND INTERPRETATION

Descriptive Statistics Analysis

Portfolio Direction and the Performance of Roads Construction Projects

The first specific objective of the study was to establish the influence of portfolio direction on the performance of roads construction projects in Nairobi City County, Kenya. The respondents were requested to indicate their level of agreement on statements relating to portfolio direction and the performance of roads construction projects in Nairobi City County, Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 1.

From the results, the respondents agreed that the Authority prepares a project portfolio matrix. This is supported by a mean of 3.968 (std. dv = 0.905). In addition, as shown by a mean of 3.959 (std. dv = 0.885), the respondents agreed that the Authority’s projects are included in the strategic plan. Further, the respondents agreed that strategy definition is provided as a pre-condition in each project. This is shown by a mean of 3.920 (std. dv = 0.605).

With a mean of 3.815 (std. dv = 0.981), the respondents agreed that executives and managers are involved in the determination of the resources available. Further, with a mean of 3.811 (std. dv = 0.873), the respondents agreed that for each project, they conduct relevance and risk assessment. The respondents also agreed that there is periodic project monitoring and control. This is shown by a mean of 3.798 (std. dv = 0.786). The respondents also agreed that there is adjustment criteria to users’ criteria and strategic changes. This is shown by a mean of 3.675 (std. dv = 0.786).

Table 1: Portfolio Direction

	Mean	Std. Dev.
The Authority prepares a project portfolio matrix	3.968	0.905
The Authority’s projects are included in the strategic plan	3.959	0.885
Strategy definition is provided as a pre-condition in each project	3.920	0.605
Executives and managers are involved in the determination of the resources available.	3.815	0.981
For each project, we conduct relevance and risk assessment	3.811	0.873
There is periodic project monitoring and control	3.798	0.786
There is adjustment criteria to users’ criteria and strategic changes	3.675	0.786
Aggregate	3.890	0.867

Project Sponsorship and the Performance of Roads Construction Projects

The second specific objective of the study was to identify the influence of project sponsorship on the performance of roads construction projects in Nairobi City County, Kenya. The respondents were requested to indicate their level of agreement on the statements relating to project sponsorship and the performance of roads construction projects in Nairobi City County, Kenya. The results were as shown in Table 2

From the results, the respondents agreed that top management provided adequate resources for successful implementation of the project. This is supported by a mean of 4.084 (std. dv = 0.997). In addition, as shown by a mean of 3.917 (std. dv = 0.831), the respondents agreed that top management provided sufficient resources for instituting organizational change to facilitate effective system implementation. Further, the respondents agreed that top management organized and enforced adequate project structures to achieve project objectives. This is shown by a mean of 3.858 (std. dv = 0.563). The respondents also agreed that top management instituted adequate processes, structures and controlling mechanism for implementing organizational change in the adapting organizations. This is shown by a mean of 3.831 (std. dv = 0.851). With a mean of 3.751 (std. dv = 0.935), the respondents agreed that top management established frequent communication

with project team members for successful implementation of the project.

From the results, the respondents agreed that top management often communicated to sell the project with the rest of the organization. This is supported by a mean of 3.723 (std. dv = 0.864). In addition, as shown by a mean of 3.679 (std. dv = 0.867), the respondents agreed that top management possesses relevant expertise and experience in project management. With a mean of 3.613 (std. dv = 0.753), the respondents agreed that top management used its power to facilitate and enforce essential system changes.

Table 1: Project Sponsorship

	Mean	Std. Dev.
Top management provided adequate resources for successful implementation of the project	4.084	0.997
Top management provided sufficient resources for instituting organizational change to facilitate effective system implementation	3.917	0.831
Top management organized and enforced adequate project structures to achieve project objectives	3.858	0.563
Top management instituted adequate processes, structures and controlling mechanism for implementing organizational change in the adapting organizations	3.831	0.851
Top management established frequent communication with project team members for successful implementation of the project	3.751	0.935
Top management often communicated to sell the project with the rest of the organization	3.723	0.864
Top management possesses relevant expertise and experience in project management	3.679	0.867
Top management used its power to facilitate and enforce essential system changes	3.613	0.753
Aggregate	3.836	0.818

Inferential Statistics

Inferential statistics in the current study focused on correlation and regression analysis. Correlation analysis was used to determine the strength of the relationship while regression analysis was used to determine the relationship between dependent variable (the performance of roads construction projects in Nairobi City County, Kenya) and independent variables (portfolio direction and project sponsorship).

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (portfolio direction and project sponsorship) and the dependent variable (the performance of roads construction projects in Nairobi City County, Kenya) dependent variable.

Table 4: Correlation Coefficients

	Project Performance	Portfolio Direction	Project Sponsorship	
Project Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	211		
Portfolio Direction	Pearson Correlation	.880**	1	
	Sig. (2-tailed)	.001		
	N	211	211	
Project Sponsorship	Pearson Correlation	.842**	.279	1
	Sig. (2-tailed)	.002	.061	
	N	211	211	211

From the results, there was a very strong relationship between portfolio direction and the performance of roads construction projects in Nairobi City County, Kenya (r = 0.880, p value =0.001). The relationship was significant since the p value 0.001 was less than 0.05 (significant level). The findings are in line with the findings of Asadullah *et al.* (2019) who indicated that there is a very strong relationship between portfolio direction and project performance.

Moreover, the results revealed that there is a very strong relationship between project sponsorship and the performance of roads construction projects in Nairobi City County, Kenya (r = 0.842, p value =0.002). The relationship was significant since the p value 0.002 was less than 0.05 (significant level). The findings conform to the findings of Gitagia (2015) that there is a very strong relationship between project sponsorship and project performance.

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (portfolio direction and project sponsorship) and

the dependent variable (the performance of roads construction projects in Nairobi City County, Kenya)

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.934	.872	.873	.10120

a. Predictors: (Constant), portfolio direction and project sponsorship

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.872. This implied that 87.2% of the variation in the dependent variable (the performance of roads construction projects in Nairobi City County, Kenya) could be explained by independent variables (portfolio direction and project sponsorship).

Table 6: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	8.027	4	2.007	63.51	.000 ^b
1 Residual	6.568	208	.0316		
Total	14.595	210			

a. Dependent Variable: the performance of roads construction projects in Nairobi City County, Kenya

b. Predictors: (Constant), portfolio direction and project sponsorship

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 63.51 while the F critical was 2.415. The p value was 0.000. Since the F-calculated was greater than the F-critical and the p value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of portfolio direction and project sponsorship on the performance of roads construction projects in Nairobi City County, Kenya.

Table 6: Regression Coefficients

1		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
	(Constant)	0.205	0.038		5.39	0.000
	Portfolio Direction	0.369	0.099	0.367	3.72	0.000
	project sponsorship	0.486	0.107	0.487	4.54	0.000

a Dependent Variable: Performance of Roads Construction Projects

The regression model was as follows:

$$Y = 0.205 + 0.369X_1 + 0.486X_2 + \epsilon$$

According to the results, portfolio direction has a significant effect on the performance of roads construction projects in Nairobi City County, Kenya $\beta_1=0.369$, p value= 0.004). The relationship was considered significant since the p value 0.004 was less than the significant level of 0.05. The findings are in line with the findings of Asadullah *et al.* (2019) who indicated that there is a very strong relationship between portfolio direction and project performance.

The results also revealed that project sponsorship has significant effect on the performance of roads construction projects in Nairobi City County, Kenya, $\beta_1=0.486$, p value= 0.001). The relationship was considered significant since the p value 0.001 was less than the significant level of 0.05. The findings conform to the findings of Gitagia (2015) that there is a very strong relationship between project sponsorship and project performance.

Conclusions

The study concludes that portfolio direction has a positive and significant effect on the performance of roads construction projects in Nairobi City County, Kenya. Findings revealed that strategic Alignment, resource Definition and Allocation, projects Evaluation and portfolio Control influence performance of roads construction projects in Nairobi City County, Kenya

In addition, the study concludes that project sponsorship has a positive and significant effect on the performance of roads construction projects in Nairobi City County, Kenya. Findings revealed that

provision of Resources, structural Arrangements, communication, expertise and power influence performance of roads construction projects in Nairobi City County, Kenya

Recommendations

The study found that portfolio direction has a positive and significant effect on the performance of roads construction projects in Nairobi City County, Kenya. This study therefore recommends that project managers should ensure effectiveness in strategic alignment, resource definition and allocation, projects evaluation and portfolio control.

In addition, the study found that project sponsorship has a positive and significant effect on the performance of roads construction projects in Nairobi City County, Kenya. This study therefore recommends that project managers should ensure effectiveness in provision of Resources, structural Arrangements, communication, expertise and power.

Suggestions for Further Studies

This study focused on the influence of Project Management Drivers on performance of roads construction projects in Nairobi City County, Kenya. Having been limited to roads construction projects in Nairobi City County, Kenya, the findings of this study cannot be generalized to performance of other projects in Kenya. The study therefore suggests further studies on the influence of Project Management Drivers on performance of other projects.

Further, the study found that the independent variables (portfolio direction and project sponsorship) could only explain 87.2% of the performance of roads construction projects in Nairobi City County, Kenya. This study therefore suggests research on other factors affecting the performance of roads construction projects in Nairobi City County, Kenya

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