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TOP MANAGEMENT SUPPORT AND PERFORMANCE OF ROAD CONSTRUCTION PROJECTS IN KENYA

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ABSTRACT

Road projects in Kenya have been characterized by low rates of budget absorption, cost overruns, and low quality of work, leading to a shortened life (sustainability). This has been attributed to inadequacies in the system for managing construction projects. This study therefore sought to identify the effect of top management support on the performance of road construction projects in Kenya and to find out the moderating effect of organizational culture on the relationship between top management support and the performance of road construction projects in Kenya. This study adopted a cross-sectional research design and used a positivist research paradigm. The unit of analysis was the road construction projects implemented by National Government Road Agencies (KURA, KeRRA, and KeNHA) in Kenya, while the unit of observation was management employees involved in the implementation of these road construction projects. Therefore, the target population for the research was 695 respondents, comprising director generals, directors, project engineers, resident engineers, site engineers, and surveyors involved in the implementation of these projects. The overall sample size for this study was determined using a formula by Krejcie and Morgan, which obtained 248 respondents. This study employed stratified random sampling to select the study sample. Primary data was used and was collected using a semi-structured questionnaire. Samples of the questionnaire were pilot tested with 24 respondents to test for reliability and validity. The data was analyzed using the Statistical Package for Social Sciences (SPSS) version 25 software. The qualitative data collected was analyzed using thematic 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 analyses to test the relationship between study variables and the research hypothesis. The study found that top management support has a positive and significant relationship with the performance of road construction projects in Kenya. In addition, organizational culture was found to have a significant positive moderating effect on the relationship between top management support and the performance of road construction projects in Kenya. Based on the findings of the study, it is recommended that organizations involved in road construction projects in Kenya prioritize top management support and organization culture.

Key Words: top management support, performance of road construction projects, organizational culture

Background of the Study

Road construction projects are pivotal drivers of socio-economic development in nations around the world. In Kenya, a developing country like many others, the successful execution of road construction projects is not only essential for enhancing transportation infrastructure but also for catalyzing economic growth and ultimately elevating the living standards of the population (World Bank, 2020). However, the road construction sector in Kenya, similar to its counterparts globally, faces a myriad of challenges and complexities, rendering the achievement of project objectives and desired outcomes a formidable and multifaceted task (Maendo, James, & Ngugi, 2018).

One critical factor that has gained recognition for its significant influence on the success of construction projects, including road construction, is top management support (TMS). TMS refers to the active commitment, involvement, and backing of senior executives or top-level management within an organization towards specific projects or initiatives (PMI, 2017). In the context of road construction projects, TMS encompasses the endorsement and dedication of senior management within government agencies, construction firms, and project stakeholders to the successful execution of these projects (Shenhar et al., 2016).

TMS plays a pivotal role in resource allocation. As Maendo, James, and Ngugi (2018) noted, it significantly influences the allocation of financial, human, and technological resources to road construction projects. Adequate resource allocation is vital for project success and timely completion. Moreover, TMS can expedite decision-making processes, reduce project delays, and provide strategic direction (Wafula, 2017). Chumba (2018) emphasized that the involvement of top management in decision-making processes can expedite approvals, resolve issues, and provide strategic direction, thereby reducing project delays. Additionally, TMS contributes to stakeholder engagement, fostering collaboration and trust among project stakeholders (PMI, 2017). The significance of governance mechanisms and ethical standards set by top management on project outcomes has been highlighted by Muller, Pemsel, and Shao (2015).

Kenya's road sector faces a range of challenges, including issues related to fund management and service delivery (Njenga, 2018). These challenges underscore the critical need to investigate the role of top management support comprehensively. This study, therefore, aimed to delve into the intricacies of top management support and its influence on addressing these challenges, providing a comprehensive understanding of how TMS impacts the performance of road construction projects in Kenya.

Statement of the Problem

Despite the fundamental importance of road construction projects, the road construction sector in Kenya is besieged by an array of formidable challenges, hampering the achievement of project objectives and the realization of desired outcomes. These include; project managers competency, lack of funds and project technology (Maendo, James & Ngugi, 2018); financial management systems, bureaucracy and red tape in client organization, political interference and inadequate preparation of plans and schedules (Wafula, 2017). Chumba (2018) reported that accountability and transparency affect stakeholder involvement in PPP road projects. These challenges are underscored by compelling statistical evidence. According to the KeNHA Annual Report for Financial Year 2020-2021 (KeNHA, 2022), 42% of the projects had a Cost Performance Index (CPI) of less than 1, which signifies that these projects were utilizing more funds than budgeted and were likely to experience cost overruns. KURA had targeted implementing 43.2 km of low-volume sealed roads during the financial year 2019–2020, but only 35 km were implemented

(OAG, 2021). An end-of-year review audit for FY 2020/21, done by KRB, shows that KeNHA had an accountability rating of 82.52%, while KURA and KeRRA achieved 79.85% and 67.36% ratings, respectively. The accountability index ratings measure the performance of road authorities in the implementation of roadwork programs financed by KRB (KRB, 2022).

The importance of TMS on project performance is well established in literature; Ahmed and Noor (2018), Kanwal, Zafar and Bashir (2017), Ahmeda, Hussain and Philbin (2021), Wana, Ogolla and Datche (2019) and Muema and Ngugi (2021). Despite its evident significance however, there exists a critical knowledge gap pertaining to the comprehensive understanding of how top management support (TMS) in project-based organizations functions within the Kenyan road construction context and its precise impact on project performance. The statistical evidence of cost overruns and variations in accountability ratings among road authorities highlights the urgency and necessity of examining TMS and its role in addressing these challenges.

Objectives of the Study

i. To determine the influence of top management support on the performance of road construction projects in Kenya
ii. To examine the moderating effect of organization culture on the relationship between top management support and performance of road construction projects in Kenya

Research Hypothesis

Ho1: There is no significant influence of top management support on performance of road construction projects in Kenya

Ho2: There is no significant moderating effect of organizational culture on the relationship between top management support and performance of road construction projects in Kenya

LITERATURE REVIEW

Theoretical Review

Resource Based View Theory

The Resource-Based View (RBV) of the firm theory was developed by Penrose (1959). Others who expanded the theory were Wernerfelt (1984) and Helfat and Martin (2015). RBV regards the firm as a bundle of resources and capabilities that are heterogeneously distributed across firms that persist over time (Wana, Ogolla, & Datche, 2019). RBV originates in the strategy literature, which provides a useful framework for examining the development of management. This can be achieved by having critical resources that are firm-specific, valuable to customers, non-substitutable, and difficult to imitate (Iyiola & Rjoub, 2020). Academicians suggest that when a firm has resources that are valuable, rare, inimitable, and not substitutable, they can use them to implement value creation strategies that provide a sustainable competitive advantage (Gitagia, 2015).

Resource-Based View Theory has been employed with a major focus on how a firm's resources and knowledge development affect performance (Gitagia, 2015). It assumes that for an organization to achieve a competitive advantage, it has to develop its resources. Wana, Ogolla, and Datche (2019) looked at maximizing long-run profits through exploiting and developing firm resources. It characterizes resources as valuable, rare, inimitable, and non-substitutable. Firms generate rents through differences in information, luck, and capabilities. The RBV approach sees firms with superior systems and structures as profitable not because they engage in strategic investments but because they have markedly lower costs to offer. It focuses on the rents according

to the owners of scarce firm-specific resources rather than the economic profits from market positioning. It puts vertical integration and diversification in a new strategic light (Iyiola & Rjoub, 2020).

However, RBV has been criticized for its inability to explain how resources are developed and duplicated and its failure to consider the impact of dynamic market environments (Gitagia, 2015). Some researchers have criticized RBV, saying that it is a static theory that has failed to develop into a competitive advantage, especially in a dynamic environment fostered by rapid technological change (Iyiola & Rjoub, 2020), and in response to concerns, the capability, competencies, and dynamic capability approaches were developed. The literature indicates that possessing valuable, rare, inimitable, and non-substitutable resources may be beneficial. Firms also require complementary capabilities to be able to deploy available resources to match market conditions and drive firm performance (Teece, Pisano, & Shuen, 2017). This theory was relevant to this study since top management provides the necessary human, material, and financial resources required for the successful execution of a project.

Schein's Theory of Organizational Culture

Schein (1985) developed a highly influential theory of organizational culture, consisting of three interrelated levels: artifacts, espoused values, and shared basic assumptions. Artifacts are the surface level of an organizational culture, tangible, easily seen, and felt manifestations such as products, physical environment, language, technology, clothing, myths and stories, published values, rituals, and ceremonies (Nguyen, Hai, &Watanabe, 2017). Iqbal *et al.* (2018) clearly state that the artifacts that exist in the organization's environment are the climate of the organization and are ambiguous. Observers must gain evidence about why they exist before the artifacts become more clearly understood by them. Once an observer lives in the organization long enough and a greater understanding of artifacts becomes apparent, then and only then can an attempt be made to analyze the espoused values and beliefs, which is the next level of organizational culture.

Espoused beliefs and values include strategies, goals, shared perceptions, shared assumptions, norms, beliefs, and values instilled by founders and leaders. Indiya *et al.* (2021) explain that the espoused beliefs and values of an organization are what predict the behaviors that can be observed at the artifact level. The strategies, goals, and philosophies are the espoused values or justifications for actions that take place in the organization. The overt behaviors illustrate the espoused values to observers, but there can be inconsistencies between some of the espoused values and the visible behaviors. The reason for the inconsistencies is a deeper level of thought and perception driving the overt behaviors. In order to truly gain a more thorough understanding of the organizational culture, one must decipher what is going on at the deeper level of underlying assumptions.

Critics have said the dynamic culture model is ambiguous because it does not clearly describe the processes that occur within and among individuals and does not define whether the processes are cognitive or social. The cultural dynamics framework assumes that cultural dynamics are simultaneously cognitive and social, that individuals are defined by their cultures, and that cognition is influenced by social processes. A key contribution of the cultural dynamics framework is that it bridges the mutually exclusive objectivist and subjectivist perspectives to provide a more complete picture of culture than either perspective offers on its own (Iqbal *et al.* 2018).

The theory was related to the study because a supportive organizational culture motivates employees to be the best they can and thus has a positive effect on performance. Organizational

culture offers a shared system, which forms the basis of communication and mutual understanding. In addition, organizational culture plays a major role in influencing behavior by using reasonable managerial tools, such as strategic direction, goals, tasks, technology, structure, communication, decision-making, cooperation, interpersonal relationships, and so forth, which are all designed to do things (Nguyen, Hai, & Watanabe, 2017).

Conceptual Framework

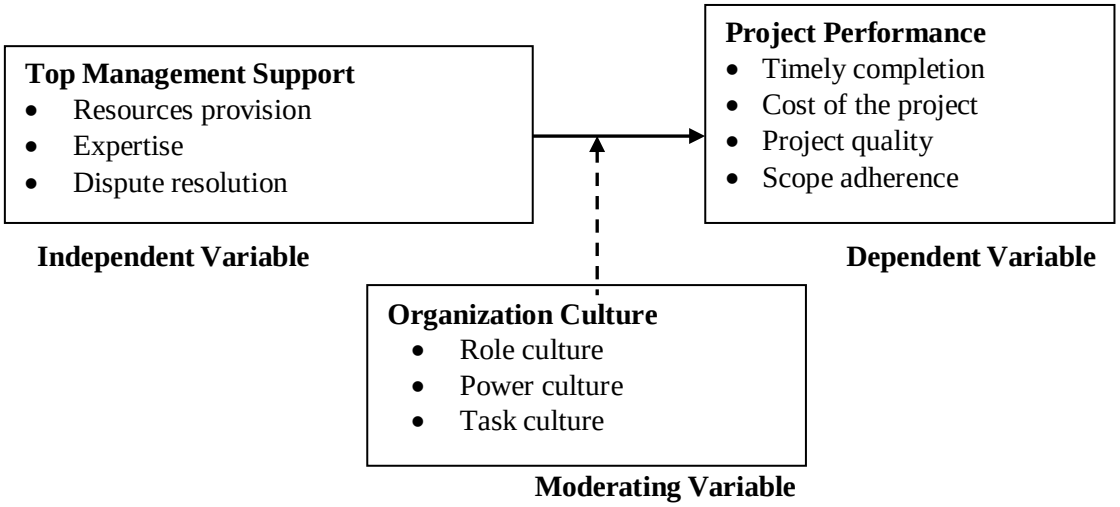

Figure 1: Conceptual Framework

Top Management Support

The top management plays a crucial role in establishing and providing the resources required for the project's successful completion (Ginger, 2017). Resource allocation refers to the process of distributing and assigning resources, such as financial, human, technological, and physical resources, within an organization to achieve its strategic goals and objectives. It involves making decisions on how resources should be allocated across various projects, departments, and activities based on their importance, priority, and expected outcomes. Effective resource allocation is crucial for optimizing productivity, maximizing efficiency, and ensuring the successful implementation of organizational initiatives. Resource allocation is a critical management process that involves distributing and assigning resources to achieve organizational goals (Fei Shi, 2015). Iyiola and Rjoub (2020) hold that effective resource allocation ensures that the right resources are allocated to the right projects or activities, resulting in improved efficiency, productivity, and overall performance. Regular monitoring and optimization of resource allocation help organizations adapt to changing conditions and maximize the utilization of available resources (Wana, Ogolla, & Datche, 2019).

In the context of top management support, expertise refers to the knowledge, skills, and experience possessed by top-level executives or managers in a particular field or domain (Iyiola & Rjoub, 2020). According to Barry and Fernanda (2015), top-level executives often make critical decisions that shape the direction and strategy of an organization. Their expertise allows them to analyze complex situations, assess risks, and make informed decisions based on their deep understanding of the industry or domain. Expertise enables top managers to develop strategic plans that align

with the organization's goals and capitalize on market opportunities. Their domain-specific knowledge helps them identify trends, predict future developments, and devise effective strategies for growth and competitiveness (Billingham, 2018). Expertise plays a vital role in allocating resources effectively. Top managers with expertise can assess the needs of different departments or projects, determine resource requirements, and allocate resources in a manner that optimizes productivity, efficiency, and outcomes. (Barry & Leite, 2015)

Dispute resolution refers to the methods and processes used to resolve conflicts, disagreements, or disputes between individuals, organizations, or parties (Wana, Ogolla, & Datche, 2019). There are various approaches to dispute resolution, and the choice of method often depends on the nature of the dispute, the parties involved, and their preferences (Gitagia, 2015). In the context of top management support, dispute resolution refers to the processes and techniques used to address and resolve conflicts or disagreements among top-level executives or between top management and other stakeholders within an organization (Billingham, 2018). When conflicts arise at the highest levels of an organization, it can have a significant impact on the overall functioning and success of the company (Gitagia, 2015). Resolving these disputes effectively and efficiently is crucial for maintaining a healthy work environment and ensuring the organization's smooth operations (Iyiola & Rjoub, 2020). Wana, Ogolla, and Datche (2019) hold that effective dispute resolution requires open and transparent communication channels between top management and other stakeholders. Creating an environment where concerns can be raised and addressed openly helps prevent disputes from escalating. Establishing clear conflict resolution policies and procedures is important to provide guidelines for addressing disputes. These policies should outline the steps to be followed, the individuals or teams responsible for managing disputes, and the available methods of resolution (Boonstra, 2017).

Organizational Culture

The influence of different organizational cultures is usually reflected in numerous factors, including style, structure, competence, shared values, norms, and beliefs, policies and procedures, the view of relationships with authority, and work ethics, to mention but a few (Mugo & Moronge, 2018). In addition, organizational culture influences organizational performance by shaping the behavior of organization members (Zheng, Yang & McLean, 2019). Sawner (2020) points out that an organization’s culture is considered to be an important factor affecting organizational success or failure. Priyono and Djojopranoto (2020) argue that organizational culture has a strong association with the organization’s sense of uniqueness, its values, mission, aims, goals, and ways of building shared values. Therefore, ignoring organizational culture in plans for any changes within the organization would yield unforeseen and negative consequences (Agboola, Motilewa & Adeniji, 2015). This study focuses on role culture, power culture, and task culture.

Role culture, also known as a bureaucratic or functional culture, is an organizational culture that places a strong emphasis on hierarchical structures, clearly defined roles and responsibilities, and adherence to established rules and procedures (Nguyen, Hai & Watanabe, 2017). In a role culture, individuals are assigned specific roles based on their expertise, and decision-making authority is typically concentrated at the top levels of the organization. Role culture emphasizes specialization and a clear division of labor. Employees are assigned specific roles and responsibilities based on their skills and expertise. Each role has well-defined tasks and functions, which helps create a sense of order and clarity within the organization (Indiya *et al.*, 2021). Role culture is characterized by a hierarchical structure where authority and decision-making power are concentrated at the top

levels of the organization. The reporting relationships are clearly defined, and individuals are expected to follow the chain of command (Iqbal *et al.* 2018).

Power culture, also known as a centralization culture, is an organizational culture where power and decision-making authority are concentrated in a few individuals or a central figure within the organization. Iqbal *et al. (2018)* In a power culture, key decisions and control are held by a select few who wield significant influence and have the ability to shape the organization's direction (Nguyen, Hai & Watanabe, 2017). Power culture is characterized by a centralized decision-making process. A small group or an individual at the top of the hierarchy holds the authority to make key decisions without significant input or consultation from others (Aibinu & Jagboro 2018). Power culture often revolves around a dominant leader or a small group of influential individuals who exert a significant influence on the organization. The leader's personality, vision, and preferences play a crucial role in shaping the organization's culture and direction (Olanipekun, Abiola, & Aje, 2019).

Task culture, also known as project culture or team culture, is an organizational culture that prioritizes the completion of specific tasks or projects (Indiya *et al.*, 2021). In a task culture, the focus is on forming dynamic and flexible teams that come together to achieve specific objectives. It emphasizes collaboration, innovation, and expertise to accomplish project goals. Task culture emphasizes the formation of teams or project groups based on specific tasks or projects (Iqbal *et al.*, 2018). Individuals who have the necessary knowledge and skills to successfully complete the assigned tasks make up these teams. The task culture is project-oriented, with teams created to accomplish specific objectives within a defined timeframe. The organization's structure is often dynamic and adaptable, allowing teams to be formed and dissolved as projects begin and end (Belassi, Kondra & Tukel, 2017).

Project Performance

Project management is both an art and a science: a science because it requires the skills, tact, and finesse to manage people, and a science because it demands an in-depth knowledge of an assortment of technical tools for managing relatively short-term efforts, having finite beginning and ending points, usually with a specific budget, and meeting or exceeding customers' needs and expectations (Simona, Adela-Eliza, & Badea, 2017). According to Alade, Lawal, Omonori, and Olowokere (2016), timely delivery of projects within budget and to the level of quality standard specified by the client is an index of successful project delivery. This involves balancing competing demands among: scope, time, cost, and quality; stakeholders with different needs and expectations; and identified requirements and expectations (Dumitrascu & Nedelcu, 2016). Citing the Project Management Body of Knowledge [PMBOK] (2011), Muthoka (2018) argued that a project is considered underperforming when it has not delivered what was required in line with expectations of cost, quality, and time. Consistent with this argument, Stojčetović *et al.* (2018) submit that one of the biggest problems for project managers is harmonizing project cost, time, and quality. However, it is difficult to achieve this because cost, time, and quality are related in the way that a change in one influences the other two. In this study, project performance is measured in terms of timely completion, cost of the project, project quality, and scope adherence.

Muthoka (2018) argues that timely completion is an important measure of project performance that assesses whether a project is finished within the planned schedule or the agreed-upon timeframe. Meeting project deadlines is crucial, as it impacts various aspects of the project's success and overall organizational objectives. Meeting deadlines demonstrates reliability and

professionalism, and it enhances the client's trust in the project team's ability to deliver on time. Timely completion instills confidence among project stakeholders, including investors, sponsors, and senior management. It shows that the project is well managed, and it increases trust in the project team's capabilities. Delays in project completion can lead to additional costs, such as extended labor hours, penalties, or increased overhead expenses. Completing projects on schedule helps avoid these cost overruns (Stojčetović *et al*., 2018).

Project cost focuses on evaluating whether the project is completed within the approved budget and managing costs effectively throughout the project lifecycle (Indiya *et al.*, 2021). Effective cost management ensures optimal allocation of resources. By controlling project costs, resources such as funds, personnel, equipment, and materials can be efficiently allocated to meet project requirements and priorities (Muthoka, 2018). Cost management mitigates the financial risks associated with the project. It involves identifying potential cost risks, such as budget overruns, and implementing strategies to mitigate those risks before they impact the project's financial health. To effectively manage project costs, project managers should develop accurate and comprehensive cost estimates, establish a robust cost tracking and reporting system, monitor costs regularly, and proactively address cost deviations. Collaboration between project managers, finance teams, and stakeholders is crucial for successful cost management throughout the project lifecycle (Stojčetović *et al*., 2018).

Project quality refers to the degree to which a project meets the requirements, specifications, and expectations of its stakeholders (Simona, Adela-Eliza, & Badea, 2017). Project quality focuses on delivering outcomes and deliverables that meet predefined quality standards and are fit for their intended purpose. Quality management ensures that the project meets the defined requirements and specifications. It involves understanding stakeholder needs, documenting requirements, and implementing processes to verify and validate that the project outputs satisfy those requirements (Anuar & Ng, 2017). Quality management emphasizes proactive measures to prevent defects and errors rather than relying solely on detection and correction (Alade *et al.* 2016). It involves implementing quality assurance activities, such as process reviews, quality planning, and risk management, to identify and mitigate potential quality issues before they occur (Elanga, Louzolo-Kimbembe, & Pettang, 2018).

Scope adherence refers to the degree to which a project stays within the defined scope boundaries throughout its lifecycle (Kim & Lee, 2019). Scope adherence measures the project team's ability to deliver the agreed-upon scope of work without unnecessary additions, changes, or omissions. Adhering to the project scope helps manage stakeholder expectations. When the project team delivers within the agreed-upon scope, it minimizes the risk of stakeholders expecting additional work or deliverables that were not initially planned (Ali & Kamaruzzaman, 2019). Scope adherence contributes to effective time and cost management. When the project team sticks to the defined scope, it minimizes the likelihood of scope creep, which can result in schedule delays, cost overruns, and resource inefficiencies (Anuar & Ng, 2017).

Empirical Review

In Malaysia, Ahmed and Noor (2018) conducted a study exploring the relationship between multi-dimensional top management support and project success. This research examines the relationship between multiple dimensions of top management support and project success. Different data analysis methods were employed to test the research hypotheses and validate the multi-

dimensionality of top management support. Findings indicate a significant and positive relationship between multi-dimensional top management support and project success.

In Ghana, Ahmeda, Hussain and Philbin (2021) conducted a study on the effect of senior management on project performance. A questionnaire survey method was adopted to collect data from project directors, project managers, civil and construction engineers, project supervisors, and experts from small, medium, and large construction companies in major cities in Pakistan. A response rate of 84% was obtained based on 310 valid responses from a sample of 368 potential participants that received the survey. The cross-sectional data were used to test direct relationships and moderating effects through regression analysis and the "process" method, respectively. The findings indicate that schedule delays in construction projects occur due to lack of commitment, insufficient site management, poor site coordination, lack of clarity in project scope, lack of communication, and substandard contracts, in addition to major delays owing to improper planning.

Muema and Ngugi (2021) examined the influence of top management support on the performance of water projects in Machakos County, Kenya. The study used a descriptive survey research design whereby 434 solar-powered new boreholes, 240 dams and pans, 216 river weirs, and 2 huge dams were assessed. This formed the study unit of analysis. The unit of observation was 184 project managers, project coordinators, independent contractors, technical staff, and community leaders, whereby a sample of 126 was picked using the Yamane formula. Primary data was collected using a questionnaire. The study findings established that top management support influences the performance of water projects in Machakos County, Kenya.

Wana, Ogolla and Datche (2019) conducted a study to determine the influence of project management practices on the performance of projects at the Port of Mombasa. The study employed a descriptive and inferential research design. The target population for the study was 203, with a sample size of 135 respondents from the Kenya Ports Authority and stakeholders from the Mombasa Port Development Authority Project (MPDP). The results revealed that there was a positive correlation between management support, project funding, monitoring, budget planning, and project performance.

Nguyen, Hai and Watanabe (2017) researched the impact of project organizational culture on the performance of construction projects. A total of 199 completed construction projects in Vietnam were analyzed with data gathering through questionnaires. The findings revealed that contractor commitment to contract agreements is the most significant cultural factor affecting project performance. In addition, the study established that goal alignment and reliance, contractor commitment, and worker orientation (i.e., commitment to workers) contribute to improved overall performance and participant satisfaction. Contractor commitment and cooperative orientation enhance labor productivity, whereas goal alignment, trust, and contractor commitment ensure learning from experience.

RESEARCH METHODOLOGY

Research philosophy is the foundation of knowledge, and the nature of that knowledge contains essential assumptions about how researchers view the world (Saunders, Lewis, & Thornhill, 2017). According to Cooper and Schindler (2018), the positivist research paradigm is founded on real facts, objectivity, impartiality, measurement, and the validity of results. The current study was therefore anchored on the positivism paradigm because it is highly structured in methodology,

which enables the generalization of quantifiable observations and the evaluation of results with the help of statistical methods. The research problem of the current study was studied through the use of a cross-sectional survey research design. This design suits the scenario where the correlation of two variables is to be determined at an instant in time (Mugenda, 2008; Cooper & Schindler, 2011).

The unit of analysis was the road construction projects implemented by National Government Road Agencies (KURA, KeRRA, and KeNHA) in Kenya and the management staff involved in implementing these road construction projects served as the unit of observation. The management employees include top managers (director general and directors), middle managers (project engineers and resident engineers), and low-level managers (site engineers and surveyors). Therefore, the target population for the research was 695 respondents, comprising director generals, directors, project engineers, residentengineers, site engineers, and surveyors involved in the implementation of these projects. The participants were targeted in the research as they are well versed in the management of road projects in Kenya and, more particularly, in the three road agencies in Kenya.

The overall sample size for this study was determined using a formula by Krejcie and Morgan (1970). Therefore, using the Krejcie and Morgan formula, the sample size for the study was 248 respondents. Stratified random sampling was used in selecting the sample for this study. In our study, the population was grouped into three strata, that is, projects by KURA, KeRRA, and KeNHA. The study then used simple random sampling to select a sample from each stratum. This study made use of web-based questionnaires to collect data.

According to Lancaster, Dodd, and Williamson (2019), the sample size for high-precision pilot studies should be between 1% and 10%. Twenty-four respondents from the three road authorities were given questionnaire samples or pilot-tested. The Statistical Package for Social Sciences (SPSS) version 25 software was used to analyze the data. Quantitative data was analyzed using descriptive statistics such as frequency, percentages, and means and summary graphs, pie charts, and frequency distribution tables to depict the data's sets of categories. The Pearson correlation coefficient was used to test associations between the independent and dependent variables. A multiple regression model was used to test the significance of the influence of the independent variables on the dependent variable. The validity of multi-regression models was tested in this study using ANOVA and the F distribution.

RESEARCH FINDINGS AND DISCUSSION

A total of 248 grade 1–6 employees working on road construction projects were selected as the sample for this study. The returned questionnaires were verified for accuracy and completeness, and 222 were found to be valid, reliable, and suitable for further analysis and reporting. The response rate for the study was 89.7%, which is considered excellent according to Sekaran and Bougie's (2016) criteria. They suggest that a response rate of 50% or above is adequate, 60% or above is good, and 70% or above is excellent for analysis. Therefore, the response rate of 89.7% is excellent and provides a solid foundation for further analysis and reporting.

Descriptive Analysis

Top Management Support

The first objective of the study was to determine the influence of top management support on the performance of road construction projects in Kenya. Respondents were therefore asked to indicate their level of agreement with statements on top management support for road projects. Table 1

presents a summary of the findings obtained. Regarding resource provision, the respondents were in agreement that top management ensures the availability of necessary resources to support project teams during crises (M = 3.923, SD = 0.845) and that top management provides adequate resources to facilitate system adaptations in the organization (M = 3.654, SD = 0.797). The study findings underscores the importance of top management's role in ensuring that project teams have the necessary resources to manage crises effectively, which can ultimately improve the performance of road construction projects in Kenya. The findings agree with Kerzner (2019) that effective management requires a proactive approach from top management to provide the necessary resources to project teams. This includes ensuring that project teams have access to the necessary financial, technical, and human resources to manage the projects effectively.

The findings further show that the respondents were neutral on the idea that top management provided adequate resources to encourage a supportive stakeholder environment for successful project completion (M = 3.385, SD = 0.983), and that top management provided adequate resources for successful implementation of the projects (M = 3.308, SD = 1.258). Lack of adequate resources can lead to delays, cost overruns, and project failure. The neutral response suggests that there may be room for improvement in the provision of resources for road construction projects in Kenya. The finding highlights the importance of top management's commitment to providing adequate resources for successful project implementation. This finding is consistent with that of Muller, Pemsel, and Shao (2015), who emphasize the role of top management support in ensuring project success by providing resources, setting priorities, and creating a culture that supports project success.

Regarding expertise, respondents agreed that top management often recognizes the changes and implications related to project implementation (M = 4.077, SD = 0.560), and that top management possesses relevant expertise and experience in project management (M = 4.000, SD = 0.938). They were also in agreement that top management recognized the power and interest of stakeholders around the project (M = 3.962, SD = 1.038), and that top management motivated the project team to achieve project objectives and enhance organizational performance (M = 3.577, SD = 1.172). The study findings agree with Wana, Ogolla and Datche (2019) that the success of a project is highly dependent on the expertise and experience of top management in project management, their ability to anticipate and respond to changes in the project environment, their ability to manage stakeholder relationships effectively, and their ability to motivate project teams to achieve project objectives.

On dispute resolution, respondents were in agreement that top management exercises its authority to resolve arising disputes (M = 4.077, SD = 0.688); that top management investigates the source of disputes in order to find an acceptable solution (M = 3.808, SD = 0.895); that top management protects the project team members fallout by solving arising disputes (M = 3.577, SD = 0.902); and that top management uses joint problem solving as a dispute resolution strategy (M = 3.539, SD = 1.104). Research by Gitagia (2015) showed that conflicts are inevitable in project management and, if not properly managed, can lead to project failure. The study findings suggest that top management plays a critical role in resolving disputes in road construction projects in Kenya. This agrees with Iyiola and Rjoub (2020) that by exercising their authority, investigating the source of disputes, protecting project team members, and using joint problem-solving strategies, top management can create a supportive and collaborative environment that promotes successful project completion. This highlights the need for project managers to develop effective

conflict resolution skills and for organizations to have clear policies and procedures in place to manage conflicts.

Table 1: Descriptive Statistics on Top Management Support

	Mean	Std. Dev.
Resources provision		
Top management provide adequate resources for successful implementation of the projects	3.308	1.258
Top management provided adequate resources to encourage a supportive stakeholder environment for successful projects completion.	3.385	0.983
Top management ensure availability of necessary resources to support project teams during crises	3.923	0.845
Top management provide adequate resources to facilitate system adaptations in the organizational.	3.654	0.797
Expertise		
Top management possesses relevant expertise and experience in project management	4.000	0.938
Top management often recognized the changes and implications related to project implementation	4.077	0.560
Top management recognized the power and interest of stakeholders around the project	3.962	1.038
Top management motivated the project team to achieve project objectives and enhance organizational performance.	3.577	1.172
Dispute Resolution		
Top management protect the project team members fallout by solving arising disputes	3.577	0.902
Top management investigates the source of disputes in order to find an acceptable solution	3.808	0.895
Top management use joint problem solving as dispute resolution strategy	3.539	1.104
Top management exercise its authority to resolve arising disputes.	4.077	0.688
Aggregate Score	**3.740**	**0.932**

Organizational Culture

The second objective of the study was to examine the moderating effect of organization culture on the relationship between top management support and performance of road construction projects in Kenya. Respondents gave their level of agreement on statements on organizational culture and the performance of road construction projects. Table 2 presents a summary of the findings obtained. From the findings on role culture, the study found that respondents agreed that in their organization, roles are delegated according to individual education qualification and specialization (M = 3.846, SD = 1.008); that individuals have authority in positions they occupy (M = 3.885, SD = 0.909); and that when assigning tasks, individual educational qualification and interests are considered (M = 3.500, SD = 1.030). The findings agree with those of Gopalakrishnan and Sundaravadivelu (2015), who found that assigning tasks based on individual education qualifications and interests was critical for project success in the construction industry. It also agrees with Huang (2018) that giving individuals authority in the positions they occupy is important for job satisfaction and employee performance. Also, Odeyinka and Yusif (2017) emphasized the importance of assessing individual educational qualifications and specializations when delegating tasks in construction project management. The authors suggest that project managers should prioritize assessing individual skills and expertise to ensure that the right person is assigned to the right task, which can improve project outcomes and reduce the risk of errors and delays.

On power culture, respondents agreed that subordinates in their organization have to strictly follow their superior's instructions (M = 3.769, SD = 0.765). This is consistent with Weber's (2017) concept of authority, which argues that legitimate power is based on a belief in the legitimacy of the rules and the individuals who enforce them. In this view, power is not inherently negative or

oppressive, but rather a necessary aspect of organizational functioning. Therefore, subordinates may agree that they have to strictly follow their superiors' instructions because they believe in the legitimacy of their superiors' authority. The findings further showed that the respondents were neutral on the statement that in their organization, power remains in the hands of few individuals (M = 3.308, SD = 1.258) and that decision-making in their organization is made by few individuals who have power (M = 3.231, SD = 1.177). This is consistent with March and Olsen (2017) observations on organizational power and decision-making, which suggest that power can be both centralized and decentralized in organizations.

Further, the study found on task culture that respondents were in agreement that in their organization, teams are formed to achieve set targets (M = 3.923, SD = 0.796) and that critical problems are solved in teams (M = 3.731, SD = 0.874). Findings also showed that respondents agreed that their organization depends on teamwork to produce results (M = 3.615, SD = 0.983). This agrees with Iqbal *et al.* (2018) on the importance of teamwork and collaboration, which have been highlighted in the literature on organizational culture, where it is argued that a task-oriented culture can enhance organizational effectiveness and performance. Respondents were, however, neutral on the idea that team members in their organization have to contribute equally to accomplish tasks (M = 2.923, SD = 1.129). This could suggest that there may be some uneven distribution of work or contributions within the team. This is consistent with Karau and Williams (2017), who suggested that issues such as free-riding, social loafing, and unequal contributions can be detrimental to team effectiveness.

Table 2: Descriptive Statistics on Organizational culture

	Mean	Std.Dev.
Role culture		
In my organization, roles are delegated according to individual education qualification and specialization	3.846	1.008
When assigning tasks, individual educational qualification and interests are considered	3.500	1.030
Individuals have authority in positions they occupy	3.885	0.909
Power culture		
In my organization, power remains in the hands of few individuals	3.308	1.258
Decision making in my organization is made by few individuals who have power	3.231	1.177
Subordinates in my organization have to strictly follow their superior's instructions	3.769	0.765
Task culture		
In my organization, teams are formed to achieve set targets	3.923	0.796
In my organization, critical problems are solved in teams	3.731	0.874
Team members in my organization have to contribute equally to accomplish tasks	2.923	1.129
My organization depends on teamwork to produce results	3.615	0.983
Aggregate Score	**3.573**	**0.993**

Performance of Road Projects

The main objective of the study was to examine the influence of project communication on the performance of road construction projects in Kenya. Respondents were therefore requested to indicate their level of agreement with statements on the performance of road construction projects. Table 3 presents a summary of the findings obtained.

The findings show the mean values and standard deviations for various aspects of project performance, including timely completion, cost of the project, project quality, and scope adherence. The mean values for most of the performance aspects were below the neutral range of 2.5–3.4, indicating a negative perception of project performance by the respondents. The standard

deviations were within an acceptable range, indicating a moderate level of agreement among the respondents.

The results suggest that there is room for improvement in various aspects of project performance in road construction projects in Kenya. For instance, the mean values for timely completion (M =2.350, SD = 0.689) and cost of the project (M = 2.423, SD = 0.857) were below the neutral range, indicating that the projects are not being completed on time or within budget. This finding is consistent with those of Kithae et al. (2019), who identified time and cost overruns as major challenges in road construction projects. On the other hand, project quality had means above 3.5, meaning the project quality was satisfactory (M = 3.539, SD = 1.029), and stakeholders were satisfied with completed projects (M = 3.654, SD = 0.797). This finding aligns with Wambua et al. (2018), who emphasized the importance of project quality and stakeholder satisfaction as key measures of project success. Also, scope adherence had means below 3.5, which means that some projects are finished according to the defined scope while others are not (M = 3.385, SD = 1.023); and project execution adheres to all of the project's key elements sometimes and not (M = 3.346, SD = 0.977). Muthoka (2018) argued that a project is considered underperforming when it has not delivered what was required in line with expectations of cost, scope adherence, quality, and time. Consistent with this argument, Stojčetović *et al*. (2018) submit that one of the biggest problems for project managers is harmonizing project cost, time, scope, and quality.

The findings suggest that there is a need to improve project performance in various aspects, particularly timely completion and cost management. These findings are consistent with previous research (Kithae *et al*., 2019; Nduta *et al*., 2019) that has identified time and cost management as critical challenges in road construction projects. Therefore, efforts should be made to address these challenges to improve the overall performance of road construction projects in Kenya.

Table 3: Descriptive Statistics on Performance of Road Projects

	Mean	Std. Dev.
Timely completion		
Projects are finished on time.	2.350	0.689
Projects activities were carried out as scheduled.	2.423	0.857
Cost of project		
The projects are finished within budget.	2.423	0.758
There are no project cost overrun incurred	1.885	0.766
Project quality		
The project quality was satisfactory	3.539	1.029
Stakeholders are satisfied with completed projects	3.654	0.797
Scope adherence		
The projects was completed as per the defined scope	3.385	1.023
Project execution adheres to all of a project's key elements.	3.346	0.977
Aggregate Score	**2.875**	**0.862**

Inferential Analysis

Correlation Analysis

The study found a positive and significant correlation between top management support (TMS) and the performance of road construction projects (r = 0.809, p = 0.000). This implies that higher TMS can lead to improved project performance. This finding is consistent with Iyiola and Rjoub (2020), who argue that TMS can help project teams obtain necessary resources and create a supportive environment for project success.

Table 4: Correlation Analysis

		Performance	Top management support
Performance of road construction projects	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	222	
Top management support	Pearson Correlation	.809**	1
	Sig. (2-tailed)	.000	
	N	222	222

**Correlation is significant at the 0.05 level (two-tailed)

Test for Hypothesis One

The first objective of the study was to examine the influence of top management support on the performance of road construction projects in Kenya. The associated null hypothesis was that there is no significant influence of top management support on the performance of road construction projects in Kenya. A univariate analysis was conducted to test the null hypothesis.

R is the correlation coefficient, which indicates the strength and direction of the relationship between the predictor and outcome variables. In this case, R = .843 suggests a strong positive relationship between top management support and the outcome variable (performance of road construction projects in Kenya). R Square is the coefficient of determination, which indicates the proportion of variance in the outcome variable that can be explained by the predictor variable. In this case, R Square = .711 suggests that 71.1% of the variation in the performance of road construction projects in Kenya can be explained by top management support.

The remaining 28.9% variation in performance of road construction projects suggests that there are other important factors that influence the outcome variable, and further research may be needed to identify these factors and improve the predictive accuracy of the model.

Table 5: Model Summary for Top Management Support

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.843[a]	.711	.712	.44086

a. Predictors: (Constant), Top management support

The analysis of variance was used to determine whether the regression model was a good fit for the data. From the analysis of variance (ANOVA) findings in Table 6, the study found out that Prob>F (1, 220) = 0.000 was less than the selected 0.05 level of significance. This suggests that the model as constituted was fit to predict the performance of road construction projects in Kenya. Further, the F-calculated value from the table (29.541) was greater than the F-critical value from F-distribution tables (3.884), supporting the findings that top management support can be used to predict the performance of road construction projects in Kenya.

Table 6: Analysis of Variance for Top Management Support

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.742	1	5.742	29.541	.000[b]
	Residual	42.68	220	.194		
	Total	48.422	221			

a. Dependent Variable: Performance of road construction projects

b. Predictors: (Constant), Top management support

From the results in Table 7, the following regression model was fitted.

$$Y = 1.161 + 0.812 X_1$$

(X_1 is Top management support)

The results showed that the constant had a coefficient of 1.161, suggesting that if top management support was held constant at zero, the performance of road construction projects in Kenya would be 1.161 units. In addition, results showed that the top management support coefficient was 0.812, indicating that a unit increase in top management support would result in an 81.2% improvement in the performance of road construction projects in Kenya. It was also noted that the P-value for the top management support coefficient was 0.000, which is less than the set 0.05 significance level, indicating that project portfolio management was significant.

Based on these results, the study rejected the null hypothesis and accepted the alternative that there is a significant positive influence of top management support on the performance of road construction projects in Kenya. The findings concur with Wana, Ogolla and Datche (2019), who found that top management support was a significant factor in determining project performance and that effective support from top management was positively associated with project success. Similarly, a study by Gitagia (2015) found that top management support had a significant positive influence on project success and that effective support from top management improved project performance.

Table 7: Beta Coefficients for Top Management Support

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.161	0.165		7.036	.001
	Top management support	.812	.149	.743	5.435	.000

a. Dependent Variable: Performance of road construction projects

Test for Hypothesis Two

A hierarchical regression model was used to test for the moderating effect. This helped to test the fifth research hypothesis. The fifth objective of the study was to examine the moderating effect of organizational culture on the relationship between top management support and the performance of road construction projects in Kenya. The study therefore computed a moderating effect regression analysis.

Ho2: There is no significant moderating effect of organizational culture on the relationship between top management support and the performance of road construction projects in Kenya.

The study used stepwise regression to establish the moderating effect of organizational culture (M) on the relationship between top management support (X) and the performance of road construction projects in Kenya (Y).

From the model summary findings in Table 8, the first model is the regression between top management support (X) without moderator and interaction, the value of R-squared was 0.693 which suggests that 69.3% change in performance of road construction projects in Kenya can be

explained by changes in top management support. The p-value for the first model (0.000) was less than the selected level of significance (0.05), suggesting that the model was significant.

The findings in the second model, which used top management support, organization culture, and interaction term (X*M) as predictors, had an R-Squared of 0.711. This implies that the introduction of organization culture in the second model led to a 0.100 increase in r-squared, showing that organization culture positively moderates the relationship between top management support and the performance of road construction projects in Kenya. This agrees with Aibinu and Jagboro (2018), who found that a positive organizational culture moderated the relationship between top management support and project performance, such that effective governance practices had a greater impact on project success in organizations with positive cultures.

Table 8: Model Summary for Moderation Effect

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.832[a]	.693	.634	.39019	.612	37.814	1	24	.000
2	.844[b]	.711	.672	.36941	.100	18.085	2	22	.038

a. Predictors: (Constant), top management support
b. Predictors: (Constant), top management support, organization culture , X*M

From the model summary findings in Table 9, the F-calculated value for the first model was 37.814 and for the second model it was 18.085. Since the F-calculated values for the two models were higher than the F-critical values of 3.884 (the first model) and 2.650 (the second model), the two models were a good fit for the data. Also, the p-values for both models were less than 0.05, an indication that they were significant. Therefore, the model could be used to predict the moderating effect of organizational culture on the relationship between top management support and the performance of road construction projects in Kenya.

Table 9: ANOVA for Moderation Effect

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.366	1	6.366	37.814	.000[b]
	Residual	36.96	220	.168		
	Total	43.326	221			
2	Regression	7.404	3	2.468	18.085	.000[c]
	Residual	26.928	198	.136		
	Total	34.332	221			

a. Dependent Variable: Performance of road construction projects
b. Predictors: (Constant), top management support
c. Predictors: (Constant), top management support, organization culture , X*M

Further, by substituting the beta values as well as the constant term from the coefficient's findings in Table 10 for the first step of regression modeling, the following regression model will be fitted:

$$Y = 1.435 + 0.884\ X$$

By substituting the beta values as well as the constant term from model 2 emanating from the second step in regression modeling, the following regression model was fitted:

$$Y = 1.861 + 3.986\,X + 3.209\,M + 0.868\,X*M$$

In Model 1, the results indicate that top management support has a significant positive influence on the performance of road construction projects (Beta = .884, $p < .05$). In Model 2, the results show that top management support (Beta = 3.989, $p = .002$) and organizational culture (Beta = 3.209, $p = .012$) have significant positive effects on the performance of road construction projects. Additionally, the interaction effect between top management support and organizational culture (X*M) is also significant and positive (Beta = .868, $p = .012$).

These findings suggest that effective top management support and a positive organizational culture are important factors in enhancing the performance of road construction projects in Kenya. The positive interaction effect between top management support and organizational culture indicates that a positive organizational culture can amplify the positive effects of effective top management support practices on project performance. These findings are consistent with previous research in project management (Priyono & Djojopranoto, 2020; Pinto & Slevin, 2017), which has emphasized the importance of effective top management support and a positive organizational culture in achieving project success.

Table 10: Beta Coefficients for Moderation Effect

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.435	.544		2.638	.002
	Top management support	.884	.144	.782	6.149	.000
2	(Constant)	1.861	.379		4.910	.010
	Top management support	3.989	1.139	3.530	3.502	.002
	Organization culture	3.209	1.168	2.066	2.746	.012
	X*M	.868	.315	3.878	2.752	.012

a. Dependent Variable: Performance of road construction projects

Conclusions

The null hypothesis for this variable was, 'There is no significant influence of top management support on performance of road construction projects in Kenya.' However, the study found that top management support is statistically significant in explaining the performance of road construction projects in Kenya. The influence was found to be positive, indicating that an increase in top management support would lead to an increase in project performance. Therefore, the study concluded that top management support has a positive and significant relationship with the performance of road construction projects in Kenya.

The second research hypothesis tested was that 'There is no significant moderating effect of organizational culture on the relationship between top management support and performance of road construction projects in Kenya'. However, the study found that organizational culture is statistically significant in explaining the top management support and project performance in road construction projects in Kenya. The influence was found to be positive, indicating that an organization culture that values innovation, risk-taking, and continuous improvement would lead to better project outcomes. Conversely, an organizational culture that is bureaucratic, hierarchical, and risk-averse would hinder innovation and limit project team creativity. Therefore, the study concluded that organizational culture has a significant positive moderating effect on the

relationship between top management support and the performance of road construction projects in Kenya.

Recommendations of Policy and Practice

The study found that top management support is crucial to the successful delivery of road construction projects in Kenya. Therefore, it is recommended that top management provide visible and consistent support for projects, both in terms of resource allocation and guidance. Additionally, top management should continue ensuring adequate and qualified human resources are available for project work to enhance the performance of road construction projects.

The study found that organizational culture can have a significant impact on the success of road construction projects in Kenya. Therefore, it is recommended that organizations introduce shared governance models where decisions are made collectively by representatives from different departments or units. This ensures that decisions are more representative of the organization as a whole and not limited to a select few. In addition, the organization should rotate leadership roles and decision-making responsibilities periodically among qualified individuals. This not only prevents power from being concentrated but also provides individuals with a broader perspective on the organization.

Recommendations for Further Studies

This study focused on the road construction industry in Kenya. Future studies could examine the impact of top management support on project performance in other industries and regions. The current study focused on the immediate impact of the variables on project performance. Further research could investigate the long-term impact of these variables on project performance and outcomes. The current study used a cross-sectional research approach to explore the impact of the variables on project performance. Future studies could use mixed-methods research to gain a deeper understanding of the impact of the variables on project performance, including qualitative data collection methods such as interviews, focus groups, and case studies.

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