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POST-AWARD CONTRACT MONITORING AND EVALUATION AND PERFORMANCE OF NATIONAL GOVERNMENT ROAD PROJECTS IN KENYA; MODERATING ROLE OF REGULATORY FRAMEWORK ADOPTION

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ABSTRACT

This study sought to assess the impact of post-award contract monitoring and evaluation on performance in the road construction industry in Kenya and to establish the moderating impact of regulatory framework adoption on the relationship between post-award contract monitoring and evaluation and performance of national government road construction projects in Kenya. The study was guided by stakeholder theory. Cross-sectional survey research design was adopted. The research paradigm for this study was positivist. The target population for the research was all 255 on-going road projects by road agencies in Kenya which are Kenya National Highway Authority (KeNHA), Kenya Rural Roads Authority (KeRRA) and Kenya Urban Roads (KURA). Therefore, the target population was 255 road projects. The overall sample size for this study was determined using the Nassiuma (2000) formula. The sample size for the study was 127 projects. This study used stratified random sampling technique to select the sample. Primary data was obtained utilizing a semi-structured questionnaire. The Statistical Package for Social Sciences (SPSS) version 25 software was used to analyse the data. Qualitative data was analysed using content analysis and presented in prose form. Qualitative data was analysed using descriptive and inferential analysis. Pearson correlation coefficient was used for testing strength and direction between the independent and the dependent variables. A multiple regression model was used to test the significance of the influence of the independent variables on the dependent variable. The findings were presented in Tables and figures. The study found that a unit increase in post-award contract monitoring and evaluation leads to a 0.924-unit ($P < 0.05$) improvement in project performance. Finally, it was found that regulatory framework moderates the relationship between post-award contract monitoring and evaluation and performance, signifying that an improvement in regulatory frameworks positively influences the impact of Post-award contract monitoring and evaluation on performance. To enhance project performance, government agencies should invest in robust monitoring systems that track project progress, compliance with contract terms, and budget adherence. Regular evaluations should be conducted to identify areas for improvement and to ensure that contractors are held accountable for their commitments. Furthermore, training and capacity building programs for project personnel in post-award contract monitoring and evaluation practices should be implemented to ensure that the process is carried out efficiently and effectively.

Key Words: Post-award contract monitoring and evaluation, Performance, Regulatory framework

Introduction

For a sound post-contract project contract management Brown and Hyer (2017) identifies some critical success factors which include; the ability to identify metrics relevant to the project, that is, a balanced set of performance indicators; capacity to generate accurate information; visibility to team members to enable every individual player/stakeholder to know what is being measured and have ready access to information; ability to provide a basis for problem discovery and solution; the system should be in-built into the project plan right from the point of project planning stage; the capacity to generate timely decision making and corrective action.

Cleland and Bidanda (2017) explained that a robust post- contract management strategy ensures compliance with contractual and regulatory obligations such as change-order and dispute processes, notices, renewals, amendments, and reporting. It also addresses financially focused activities and obligations such as performance, pricing adjustments, invoicing, and discounts. Tools that focus on post- contract management can also help businesses: adhere to production, quality assurance, packaging, and delivery requirements; resolve claims and disputes; and measure performance. In addition, post-award contract management can help prevent the contracts' value from eroding over time (Brown & Hyer, 2017).

It is significant that the Kenyan road construction projects history is marked by ups and downs with high performance by the national government being perceived today and a decade ago as apprehended in the succeeding empirical studies (Wels, 2017). In Kenya, the practice of management of contracts is recommended to ensures each concerned agency to an agreement that satisfies their separate obligations competently and efficaciously to offer the operational goals vital from the contract and provide a price for cash (Gituro & Mwawasi, 2017). Effective road contract management lies in assessing contract performance through the safe, timely delivery of their duties (Chepkemoi, 2020). In various areas in Kenya, there is an attempt to overcome a risky and dangerous operating environment, where the construction companies give higher priority to contract management by employing various contract management strategies (Oyolla, 2019).

According to Parkera and Hartley (2017), currently, Kenya loses taxpayers' money to improper procurement processes, specifically poor contract management practices. Since the state requires to realize its value for money in the process of the serving its people, every state corporation is required to account for its expenses (Contract Monitoring Kenya Network, 2012). Therefore, contract management is a valuable step in public procurement as it ensures that service or product delivery is undertaken as per the contractual terms and conditions. The study helped unearth the post-post-award contract monitoring and evaluation on project performance in national government construction projects (KeNHA, KURA, and KeRRA).

Statement of the Problem

Nyika (2018) noted in a study that only 20.8 per cent of the road projects in Kenya were implemented on time and budget, while 79.2 per cent exhibited some form of failure. The major causes of failures were insufficient implementing capacity, poor project management, weak project design and political interference. Road construction projects in Kenya have been getting sustainability warning owing to poor quality standards; statistics by Kenya Roads Board has indicated that at least 6,212 km of tarmacked roads are classified as being in a fair condition, with 2,429 km classified as poor.

Aside from poor project quality other challenges are time and cost. For instance, in the construction of Thika Super Highway by Kenya National Highways Authority (KeNHA), the cost escalated from Kes.26.44 billion to Kes.34.45 billion (World Bank, 2014). In addition, the initial deadline of the Thika super highway project was July 2011, which was later revised to July 2013, a

difference of two whole years. Cleland and Bidanda (2017) explained that a robust post- contract management strategy ensures compliance with contractual and regulatory obligations such as change-order and dispute processes, notices, renewals, amendments, and reporting. Arguably, the contract management process after acquisition and sourcing is the most crucial stage for government agencies but has notoriously been given low visibility and insufficient resources (Ayangade et al., 2019). Owing to the challenges facing the road construction industry in Kenya, and the important role of post award contract management, this study sought to establish the effect of post-post-award contract monitoring and evaluation on its performance.

Objectives of the Study

The study was guided by the following specific objectives;

i. To assess the influence of post-award contract monitoring and evaluation on performance in the road construction industry in Kenya

ii. To establish the moderating influence of regulatory framework adoption on the relationship between post-award contract monitoring and evaluation and performance of national government road projects in Kenya

Research Hypothesis

This study sought to test the following research hypothesis;

i. **H_{01}:** Post-award contract monitoring and evaluation has no significant influence on performance of national government road projects in Kenya

ii. **H_{02}:** Regulatory framework has no significant moderating influence on the relationship between post-award contract monitoring and evaluation and performance of national government road projects in Kenya

Significance of the Study

The study is also important to the national government road agencies; KeRRA, KeNHA and KURA who should establish components of post-award contract management that should be put in place to ensure satisfactory performance of roads construction projects under their jurisdiction. The Development Partners are expected to gain confidence funding road agencies with robust post-award contract management frameworks as this will guarantee high levels of success in completion of the road projects.

Road contractors are the implementers of construction projects in Kenya while the Consultants supervise the road projects on behalf of the Road Agencies and the County Governments. They are therefore important stakeholders in roads construction projects. Consultants are expected to be aware of the road agencies post-award contract management practices. The Contractors on the other hand are expected to put in place adequate governance structures in their projects for example contracts with clients and agents, reporting mechanisms, and stakeholder management to ensure successful implementation of road projects.

This study is of value to scholars and researchers as it adds knowledge to the existing research on post-award contract management. The study explored the various gaps and trigger further research by scholars and other stakeholders. Excerpts of the research published in academic journals makes it accessible to students and scholars and give insight on the impact of post-award contract management on performance of national government road construction projects in Kenya.

LITERATURE REVIEW

Theoretical Review

Principal Agent Theory

Principal Agent Theory was expounded by Alchian and Demsetz (1972) and further developed by Jensen and Meckling (1976). The theory adequately explains the relationship linking the contractors and hiring entity, which may have an impact on the very last performance of road creation ventures. Being involved with enterprise relationships, the two events have a business enterprise relationship when they cooperate and engage in an affiliation where in one celebration (the primary) delegates selections and/or paintings to any other (an agent) to act on its behalf (Panda & Leepsa, 2017). While the district targets the goal of constructing high-quality roads, on the contrary, the contractors want to maximize profits out of the contracted projects, which lead them to do substandard work through minimizing inputs to Maximize profits. the vital assumptions underlying organization theory is that; capacity purpose conflicts exist among principals and retailers; every birthday party acts in its self-hobby; information asymmetry regularly exists among principals and marketers; sellers are greater danger averse than the most important, and performance is the effectiveness criterion.

Two capability troubles stemming from those assumptions might also get up in organization relationships: company trouble and a hazard-sharing hassle (Xingxing, 2020). A corporation problem appears when agents' desires vary from the principals' and it's miles tough or highly - priced to verify whether or not agents have as it should be done the delegated work (i.e. ethical risk). This trouble also arises whilst it's far hard or pricey to affirm that marketers have the expertise to carry out the delegated paintings (destructive choice) that they claim to have. A threat-sharing problem arises while principals and dealers have special attitudes toward hazards that cause disagreements approximately moves to be taken (Xingxing, 2020).

The theory defines the relationship between principals, such as shareholders and agents or company executives and managers. This theory relates to independent variable on post-award contract monitoring and evaluation where the principal delicates the running of the business to the managers, who are the shareholders agents (Clarke, 2004). Compliance with procurement rules and regulations that govern the contract management maybe as a result of the principal agent problem (Langevoort, 2002). In borrowing the concept, the theory will be useful in explaining the post-award contract monitoring and evaluation where reports and audits are taken and submitted to the principal who is in this case the government.

Conceptual Framework

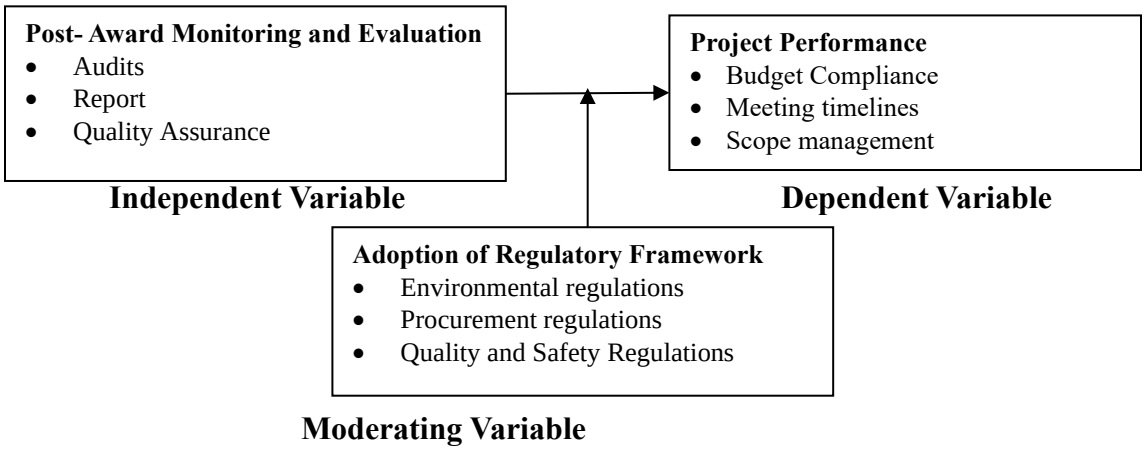

Figure 1: Conceptual Framework

Post-Award contract monitoring and evaluation

Given the multitude of supplements, the establishment of an appropriate operational unit for post-contract management is essential in order to minimize open claims, conflict potential and related handling time by means of process optimization (Aberdeen, 2017). Performance review is a comparison of the performance of the goods, works, materials and services against the quoted, specified and agreed criteria. As has already been pointed out, measurement is a vital part of the contracting process, yet it is sometimes forgotten once a contract has been completed and contracting authorities have moved on to another project. With a large procurement, a post contract review is always an appropriate tool (Abeeden, 2017).

In a study that was conducted by Mlinga, (2018) on contract audit found out that there is a relationship between proper contract audits and customer satisfaction while managing contracts, hence for proper contract deliver proper auditing needs to be carried out. According to CIPS (2019), post-award contract monitoring and evaluation is important for in that it contributes to success of a project, thus impacting on supply chain performance, which in overall contributes towards the organizations competitive advantage.

Monitoring in construction projects is defined as encompassing the tracking, collection and analysis of projects' achievements and overall performance, and is intended to inform operational decision-making, including project design, and to maintain operational focus on results through the measurement of outcomes, outputs and processes for programmes worldwide (Samuels, 2021). A secondary objective of monitoring is to generate data for evaluative purposes, corporate reporting and further evidence-building at all organizational levels.

In recent years the Monitoring Unit has invested significant efforts in setting up comprehensive normative guidance in line with the organization’s strategic plan, and in delivering targeted support to country offices. In line with the recently approved projects Corporate Monitoring Strategy that focuses on staffing and resourcing, the Monitoring Unit has launched a workforce and skills gap assessment exercise which aims to enhance monitoring capacity across the organization (Lifard, 2020). Emphasis on monitoring as a corporate reporting function resulted in incomplete and/or inconsistent implementation of monitoring practices, impacting the level of confidence in data collected and related analyses.

Shared monitoring refers to a collaborative approach to monitoring and evaluation in which multiple stakeholders participate in the process. It involves the active involvement and engagement of various parties, such as project teams, implementing agencies, beneficiaries, and other relevant stakeholders. This collaborative approach promotes transparency, inclusivity, and accountability, allowing diverse perspectives and expertise to contribute to the monitoring process (World Bank, 2011).

Shared monitoring enhances the effectiveness of monitoring efforts by leveraging the knowledge and resources of multiple stakeholders. It leads to more comprehensive and accurate assessments of project performance, as different stakeholders may have unique insights and access to different types of information. Additionally, shared monitoring fosters ownership and commitment among stakeholders, as they are actively involved in the monitoring process and have a stake in the project's success (USAID, 2015).

Regulatory Framework

Transparency, fairness and competition in procurement bring to public light mistakes, errors in judgments and bad practices that affect the management and administration of a country (World Bank, 2017). They allow citizens to challenge unfair public officials and make them more accountable to the people. Efficiency and effectiveness in procurement ensures expenditure control

since they minimise cost and ensures value for money. Again ethical approach (i.e. Adhering to procurement laws) as a principle of procurement leads to bureaucracy in financial management (Kluwer, 2020). The relationship between ethical approach and bureaucracy is to avoid personal interest and promote public interest.

Kenya's public Regulatory Framework have recently undergone and continue to undergo major changes (Ombaka, 2019). Regulations have been put in place for domestic purposes, with individual governments using them to promote domestic goals (Otieno, 2018). The Public Procurement and Asset Disposal Act of 2015 have set new standards for public procurement in Kenya. Getting value for money, preventing corruption, promoting industrial or social policies in developing market economies, and also as a method of improving their existing market-based procurement systems supported by the UNICITRAL Model Law are among the most important reasons for Kenya's public procurement system transformation (Thai, 2018). A good public procurement system may improve accountability by making processes explicit and allowing compliance to be verified.

The Public Procurement and Disposal Act of 2005 and the Public Procurement and Asset Disposal Act of 2015 in Kenya established mechanisms for public organizations to purchase and dispose of unserviceable, outdated, or excess goods and equipment. The Act established three independent bodies to regulate the act; National treasury, the Public Procurement Regulatory Authority (PPRA) and the Public Procurement Administrative Review Board (PPARB). These regulations and acts give the conceptual framework in which procurement of goods, services and works should be performed right from user identification, specification development, supplier sourcing and selection, contract management, expediting, contract execution and delivery to receiving and disposal.

Performance of National Government Road Projects

Project management is 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, of managing relatively short-term efforts, having finite beginning and ending points, usually with a specific budget, and it must meet or exceed 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; 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, Lazarević, Prlinčević, Stajčić, and Miletić (2018) submits that one of the biggest problems of project managers is to harmonize 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 of one influence on the other two. Project managers therefore typically try to balance the three when meeting project objectives, but they may make trade-offs among the three during project implementation in order to meet objectives and satisfy customers.

According to PricewaterhouseCoopers (PWC, 2013) construction projects especially mega-projects, those typically defined as exceeding $1 billion exceed their budgets by as much as 50%. This is occasioned by shortcomings in project controls, and failure to realize the severity of delays and cost overruns until well after a project has foundered. In project management, time is an intangible resource that is unique because it is absolutely finite and time availability of a project

is defined as the availability of time needed to do a job assigned (Anuar & Ng, 2017). Project time management is based predominantly on planning, and then it's all control and execution. Planning for project schedules may stem from deadlines, customer demands, hard and soft logic, and a bit of prediction.

Factors that contribute to cost overrun in construction industry include: inaccurate or poor estimation of original cost, inflation of project costs, improper planning, fluctuation in price of raw materials, poor project management, lack of experience, obsolete or unsuitable construction equipment and methods, unforeseen site conditions, mistake in design, insufficient fund, poor contract management, high cost of machineries, construction cost underestimation (Ali & Kamaruzzaman, 2019). In addition to poor project management, the problem of cost overruns is also attributed to economic factors, and natural environmental conditions. Factors ascribable to project management include inadequate project formulation, lack of proper planning and poor project implementation (Elanga, Louzolo-Kimbembe, & Pettang, 2018).

Time management is critical for any successful project with the most common cause of bloated project budgets being lack of schedule management leading to time overrun (Stojčetović *et al.,* 2018). Time overrun is any delay beyond the baseline construction schedule (Memon, Rahman, Abdullah, & Aziz, 2017). According to Alade *et al.* (2016), causes of delay in the construction industry of developing economies can be classified into three: shortages or inadequacies in industry infrastructure, mainly supply of resources; problems caused by clients and consultants; and problems caused by incompetence of contractors. In construction industry, it is important to have control on cost performance of projects to ensure the construction cost is within the budget. So, project cost management is needed to keep the project within its defined budget. Project cost management include: estimate costs (approximation of the monetary resources needed to complete project activities); determine budget (aggregating the estimated costs to establish cost baseline) and; control (monitoring the status of the project and managing changes to the cost baseline). Cost overrun is a very common phenomenon in the construction industry. Cost overrun occurs when the final cost or expenditure of the project exceeds the original estimation cost.

Empirical Literature Review

Post-award contract monitoring and evaluation and Project Performance

Mohd Khairul, Syuhaida and Abd (2018) researched on contractor's monitoring and evaluation system in the Malaysian construction industry: current practice, perception and understanding. The study specifically sought to: (1) determining the current practice of contractor's monitoring and evaluation system in the Malaysian construction industry; and (2) examining the construction players' perception and understanding on the existing contractor's monitoring and evaluation system in the Malaysian construction industry. A set of questionnaires is designed and distributed to 157 contractors from G1 to G7 class. The paper found that: (1) contractor's monitoring and evaluation system is benefiting the contractors yet should be improved for its efficiency; and (2) construction players have sufficient understanding on contractor's monitoring and evaluation system.

Mohammed (2018) sought to establish the influence of performance contracting on banking industry's operational performance. Buyers and service users frequently discuss a supplier's performance and value for money, especially to compare it with another supplier. It is well documented that this process helps the organization to be more effective. Considering this, and the increasing dependency on bought-in goods and services, it seems odd that supplier monitoring and evaluation isn't more prevalent in procurement. This could be due to procurement's lack of experience in this area or perception that it is a low priority activity and that if problems do occur they can be sorted out at times (CIPS, 2019).

Regulatory Framework on Project Performance

Sarfo and Baah-Mintah (2017) assessed the effect of the Procurement Act (663) on the public financial management in Ashanti Region. This article discussed the extent to which the Public Procurement Act (654) has achieved transparency in the use of state resources, causes of delays in the procurement process and effects of the Procurement Act on government expenditure in the Ashanti Region. The descriptive and explanatory research designs were used for the study. The study relied on both probability and non-probability sampling techniques. The study revealed that procurement activities and procedures were transparent because decisions on procurement activities followed the rules and regulations of the Act. It was further revealed that contractors were not paid on time after execution of contracts and this affected their organisational management. It was concluded that the Procurement Act had reduced government expenditure considerably in the sense that the Procurement Act has reduced wastage and leakage of financial resources through effective auditing, expenditure monitoring and cost effectiveness and competition which has brought value for money.

Mutangili (2019) studied the effects of procurement law on procurement performance: a case of Kenya National Highway Authority. The specific objectives of the study were; to establish the effect of procurement law implementation on procurement performance of Kenya National Highway Authority, to establish the challenges facing the implementation of procurement laws by Kenya National Highway Authority. The study used a desk study review methodology where relevant empirical literature was reviewed to identify main themes. The study results indicated positive relationship between procurement law implementation and procurement performance. The study concluded that, Procurement policy implementation has a positive influence on performance of procurement function. The study recommended that Kenya National Highway Authority should appoint a procurement oversight committee to oversee implementation of the procurement law and government policies on procurement.

RESEARCH METHODOLOGY

The research problem of the current study was studied through use of 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). The research paradigm for this study was positivist. This is because Saunders, Lewis and Thornhill (2009) affirm that through positivism the researcher is concerned with facts and not opinions. It facilitates a study through collection of facts and figures. The target population for the research was all on-going construction projects whose completion date was not earlier than December of 2023 by the three agencies in Kenya which are Kenya National Highway Authority (KeNHA), Kenya Rural Roads Authority (KeRRA) and Kenya Urban Roads (KURA). The study mainly focused on contractors of the projects as they play a critical role in providing the requisite data and information for the finalization of the research. Therefore, the target population for this study was 255 on-going projects by the national government.

The overall sample size for this study was determined using the Nassiuma (2000) formula. Therefore, using Nassiuma (2000) formula, the sample size for the study was 127 projects. Stratified random sampling is the technique was used in selecting the sample for this study. Because they are cost-effective and convenient to collect and summarize replies, primary data was obtained utilizing a semi-structured questionnaire in this project (Zikmond, 2013).

The Statistical Package for Social Sciences (SPSS) version 25 software will be 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. This study conducted inferential statistics through correlation analysis. A multiple regression model was used to test the significance of the influence of the independent variables on the dependent variable. T test was used to determine the significance of the regression coefficient.

RESEARCH FINDINGS

A total of 127 were selected as the sample for this study. The returned questionnaires were verified for accuracy and completeness, and 113 were found to be valid and reliable, and suitable for further analysis and reporting. The response rate for the study was 89.0%, 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% is excellent and provides a solid foundation for further analysis and reporting

Descriptive Analysis of Study Variables

Post-award contract monitoring and evaluation

The first objective of the study was to assess the effect of post-award contract monitoring and evaluation on performance in the road construction industry in Kenya. Respondents were requested to indicate their level of agreement with statements on the impact of post-award contract monitoring and evaluation on performance in the road construction industry in Kenya. Table 1 presents summary of the findings obtained. Based on the findings, the respondents were in agreement of average with the statements on audits that proper auditing is a precursor for proper contract delivery (M= 4.005, SD= 0.972); that contract audit affects procurement cycle time of projects (M= 3.781, SD= 0.312); and that contract audits ensure that contracts have complied with requirements and standards set forth in the contract (M= 3.691, SD= 0.449). Respondents also agreed on reports that contract reports affect satisfaction of the public with the road projects (M= 3.989, SD= 0.52); that contract reports affects supplier defects rate (M= 3.826, SD= 0.526); and that contract reports affects quality of road projects (M= 3.639, SD= 0.61). Furthermore, on shared monitoring, the respondents were in agreement that conducting regular monitoring activities have helped them to maintain operational focus (M= 3.875, SD= 0.126); that once projects have been completed, they track its achievement (M= 3.673, SD= 0.097); and that they regularly collect and analyse projects' achievements (M= 3.632, SD= 1.022).

Based on the findings above and supported by an aggregate mean of 3.790 (SD= 0.515), it is evident that the respondents were in agreement that post-award contract monitoring and evaluation affects performance in the road construction industry in Kenya. The study findings agree with studies that have emphasized on the importance of effective post-award contract monitoring and evaluation in ensuring project success. For example, a study by Akintoye et al. (2019) found that effective monitoring and evaluation of construction contracts is crucial for ensuring that projects are completed on time, within budget, and to the required quality standards. Similarly, a study by Kaming et al. (2017) identified post-award contract monitoring and evaluation as a critical factor in project success, and highlighted the need for regular monitoring to identify and address potential issues before they become major problems. Another study by Ali et al. (2018) on the factors affecting project success in the construction industry in Pakistan found that effective post-award contract monitoring and evaluation was one of the key factors influencing project success.

Table 1: Descriptive Statistics on Post-award contract monitoring and evaluation

Statements	Mean	Std. Dev.
Contract audit affects procurement cycle time of projects	3.781	0.312
Proper auditing is a precursor for proper contract delivery	4.005	0.972
Contract audits ensure that contracts have complied with requirements and standards set forth in the contract.	3.691	0.449
Contract reports affects satisfaction of the public with the road projects	3.989	0.52
Contract reports affects supplier defects rate	3.826	0.526
Contract reports affects quality of road projects	3.639	0.61
Once projects have been completed, we track its achievement	3.673	0.097
We regularly collect and analyse projects' achievements	3.632	1.022
Conducting regular monitoring activities have helped us to maintain operational focus	3.875	0.126
Aggregate score	**3.790**	**0.515**

Regulatory Framework

The second objective of the study was to establish the moderating effect of Regulatory Framework on the relationship between post-award contract monitoring and evaluation and performance of national government road projects in Kenya. Respondents were therefore requested to indicate their level of agreement with statements on Regulatory Framework on performance of national government road construction projects in Kenya. Table 2 presents summary of findings obtained.

Based on the findings, respondents agreed on average that accountability is ensured through Regulatory Framework (M= 4.005, SD= 0.833); that Regulatory Framework provides institutional framework that arranges for carrying out public procurement (M= 3.958, SD= 0.358); and that Regulatory Framework provides framework of implementation and management of all steps in procurement cycle (M= 3.912, SD= 0.876). They also agreed that Regulatory Framework provides framework of administration of procurement contracts (M= 3.883, SD= 0.461); and that Regulatory Framework provides framework of item judgment and application of discretion to procurement decision such as e-procurement (M= 3.622, SD= 0.657). Furthermore, they agreed that Regulatory Framework provide required procurement document, records management (M= 3.616, SD= 0.965); that procurement regulation allows fairness in procurement which bring to public light mistakes and errors that affect contract management (M= 3.609, SD= 0.813); and that procurement regulation provides guidelines to ensure transparency in government projects (M= 3.6, SD= 0.273).

The findings above also supported by an aggregate mean of 3.776 (SD= 0.655) show that Regulatory Framework affect performance of national government road construction projects in Kenya. The finding is consistent with the literature on public procurement and project management. For example, research by Manley et al., (2018) has shown that Regulatory Framework can have a significant impact on project outcomes, including cost, quality, and delivery time. Effective Regulatory Framework can help to ensure transparency, fairness, and accountability in the procurement process, which can in turn promote competition and improve the quality of the bids received (OECD, 2017). In addition, Regulatory Framework can help to ensure that the procurement process is efficient and effective, reducing the risk of delays, cost overruns, and other performance issues. However, inadequate Regulatory Framework or poor implementation can lead to negative outcomes, including corruption, favoritism, and substandard quality (Manley et al., 2018). Therefore, effective Regulatory Framework are a critical component of project success in the road construction industry in Kenya, and can impact performance in a

range of ways. By ensuring transparency, fairness, and accountability in the procurement process, Regulatory Framework can help to promote competition and improve the quality of bids received, leading to better project outcomes.

Table 2: Descriptive statistics on Regulatory Framework

Statements	Mean	Std. Dev.
Accountability is ensured through Regulatory Framework	4.005	0.833
Regulatory Framework provides institutional framework that arranges for carrying out public procurement	3.958	0.358
Regulatory Framework provides framework of implementation and management of all steps in procurement cycle	3.912	0.876
Regulatory Framework provides framework of administration of procurement contracts	3.883	0.461
Regulatory Framework provides framework of item judgment and application of discretion to procurement decision such as e-procurement	3.622	0.657
Regulatory Framework provides required procurement document, records management	3.616	0.965
Procurement regulation allows fairness in procurement which bring to public light mistakes and errors that affect contract management	3.609	0.813
Procurement regulation provides guidelines to ensure transparency in government projects	3.6	0.273
Aggregate Score	**3.776**	**0.655**

Performance of Road Projects

The main objective of the study was to establish the effect of post-award contract monitoring and evaluation on performance of national government road projects in Kenya. Respondents were therefore asked to indicate their level of agreement with the following statements on performance of roads construction projects. Table 3 presents summary of findings obtained. Based on the findings, respondents agreed on average that organization learns from projects (M= 4.021, SD= 0.133); that in the projects the effectiveness of work is considered (M= 3.982, SD= 0.413); and that projects focus on satisfaction of the general public (M= 3.981, SD= 0.9). They also agreed that organizations show competence to defined standards (M= 3.967, SD= 0.904); that projects comply with environmental regulations (M= 3.959, SD= 0.854); that improvement in organization capacity is possible through projects (M= 3.934, SD= 0.594); that smooth handover of project outputs determine their success (M= 3.929, SD= 0.812); and that projects activities are carried out as scheduled (M= 3.922, SD= 0.77). Further, respondents agreed that current projects enable other projects work in future (M= 3.889, SD= 0.152); that project team satisfaction is crucial for project success (M= 3.854, SD= 0.331); that projects meet safety standards (M= 3.824, SD= 0.729); and that projects help organizations to gain knowledge/ understanding (M= 3.711, SD= 0.760). They were also in agreement that project completed achieved its purpose (M= 3.701, SD= 0.695); that sponsor satisfaction is key in every project (M= 3.689, SD= 0.398); that projects are finished on time and within budget (M= 3.646, SD= 0.205); that projects have impacts on public that are visible (M= 3.634, SD= 0.674); that organizations ensures that general public is satisfied with projects (M= 3.625, SD= 0.096); and that projects work on ensuring suppliers are satisfied (M= 3.581, SD= 0.176).

The findings on the importance of organizational learning, adherence to environmental and safety regulations, and project completion within budget and on time are consistent with previous literature on project management best practices (Pinto & Slevin, 2019). The focus on public satisfaction and visible impacts also aligns with the increasing emphasis on stakeholder

engagement and social responsibility in project management (Packendorff, 2017). Additionally, the importance placed on project team satisfaction and sponsor satisfaction is consistent with the research on the importance of stakeholder management in project success (Cooke-Davies, 2018). The finding that projects enable organizations to gain knowledge and understanding is also consistent with the notion of project-based learning and knowledge management (Dinsmore & Cabanis-Brewin, 2017).

Table 3: Descriptive Statistics on Performance of Road Projects

Statements	Mean	Std. Dev.
Organization learns from projects.	4.021	0.133
In the projects the effectiveness of work is considered.	3.982	0.413
Projects focus on satisfaction of the general public.	3.981	0.900
Organizations show competence to defined standards.	3.967	0.904
Projects comply with environmental regulations.	3.959	0.854
Improvement in organization capacity is possible through projects	3.934	0.594
Projects activities are carried out as scheduled.	3.922	0.770
Current projects enable other projects work in future.	3.889	0.152
Projects meet safety standards	3.824	0.729
Projects help organizations to gain knowledge/ understanding	3.711	0.760
Project completed achieved its purpose	3.701	0.695
Sponsor satisfaction is key in every project	3.689	0.398
Projects are finished on time and within budget.	3.646	0.205
Projects have impacts on public that are visible.	3.634	0.674
Organizations ensures that general public is satisfied with projects.	3.625	0.096
Projects work on ensuring suppliers are satisfied	3.581	0.176
Aggregate Score	**3.825**	**0.533**

Diagnostic Test Findings

Normality Assumption

This study used Shapiro Wilk test to determine if the variables follow a normal distribution (Cooper & Schindler, 2016). If the p-value is greater than 0.05, then the null hypothesis is not rejected since there is enough evidence that the data is not normally distributed. From the findings in Table 4, post-award contract monitoring and evaluation had p-value=0.127>0.05; Regulatory Framework had p-value=0.427>0.05; and project performance of national government road projects in Kenya had p-value = 0.665>0.05. All the variables had p-values greater than 0.05 and therefore the variables were normally distributed and hence the data meets the regression analysis assumption of normality of data.

Table 4: Tests of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
Post-award contract monitoring and evaluation	.579	113	.127
Regulatory Framework	.879	113	.427
Project Performance	.970	113	.665

Multicollinearity

Variance Inflation Factor (VIF) was used, which measures multicollinearity in the regression model. The general rule of thumb is that VIF exceeding 5 warrant further investigations, if there are two or more variables that would have a VIF around or greater than 5, one of these variables must be removed from the regression model (Bryman & Cramer, 2018). All the VIF values were below 5, and were found that there was no multicollinearity among the independent variables.

Table 5: Multicollinearity Test Statistics

Variable	Collinearity Statistics	
	Tolerance	VIF
Post-award contract monitoring and evaluation	.360	2.781
Regulatory Framework	.436	2.293
Project Performance	.689	1.451

Heteroscedasticity

In this study Heteroscedasticity was tested by performing the Breusch-Pagan /Cook-Weisberg test. Homoscedasticity was evident when the value of "Prob > Chi-squared" is greater than 0.05 (Park, 2008). The findings in Table 6 shows that the constant variance ($Chi^2 = 1.3457$) is insignificant ($P = 0.3241$). Therefore, there is no instance of heteroscedasticity in the data.

Table 6: Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

Ho: Constant variance			
Statistics	Df	Stat value	p-value
Chi-squared	1	1.3457	0.3241

Autocorrelation Test

Autocorrelation was checked using Durbin-Watson test. The d value ranges from 0 to 4, if the value is found to be less or equal to 2 then it implies absence of autocorrelation. If the d values are; $1.5 < d < 2.5$ it implies absence of autocorrelation in the data. Durbin-Watson test was used to analyze linear autocorrelation for only direct neighbors being the effects of first order. Findings presented in Table 7 show that the d-value was 1.990; since the value lies within the range $1.5 < d < 2.5$, then we conclude that there is no autocorrelation in the data and therefore regression analysis can be computed.

Table 7: Durbin-Watson Autocorrelation Test

Model	Std. Error of the Estimate	Durbin-Watson
1	1.29748	1.990

Linearity Test

One of the other assumptions in regression analysis is that the predictor (independent) variables and predicted (dependent) variable relationships are linear in nature. The study used scatter plot to test whether the assumption has been met. Linear relationship tends to exist when the values of the dependent variable(Y) and the values of the independent variable (X) are apparently in a straight line when plotted on a graph. As shown in Figure 2, there was a linear structure relationship with the dependent variable and the independent variables. Therefore, linearity test has been met and it is safe to compute regression analysis.

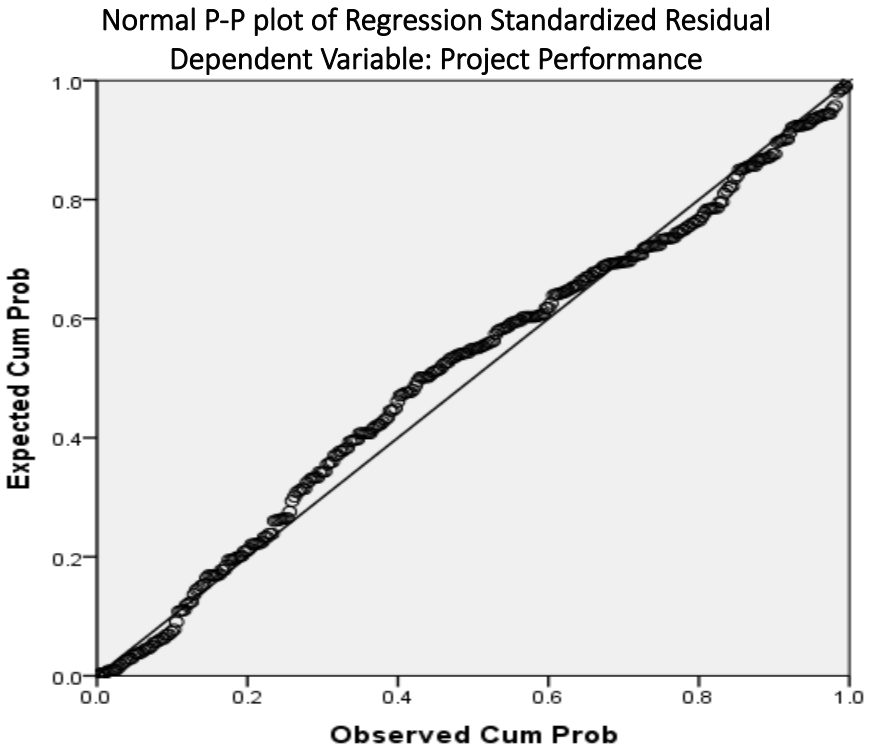

Figure 2: Linearity Test

Correlation Analysis

The correlation analysis revealed a significant positive correlation between project performance and post-award contract monitoring and evaluation ($r = 0.707$, $p < 0.05$). This finding suggests that as post-award contract monitoring and evaluation improves, there is a corresponding improvement in project performance. This result is consistent with previous research by Smith and Johnson (2019) that effective monitoring and evaluation practices enable project managers to identify and address potential issues or deviations from the contract, ensuring that project objectives are met. The significant correlation underscores the importance of diligent monitoring and evaluation activities in achieving favourable project outcomes.

Table 8: Correlation Analysis

		Project Performance	Post-award contract monitoring and evaluation
Project Performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	113	
Post-award contract monitoring and evaluation	Pearson Correlation	.707**	1
	Sig. (2-tailed)	.000	
	N	113	113

Test of Hypotheses

To test the hypotheses, the study conducted univariate regression analysis in which performance of national government road projects in Kenya was regressed on each of the independent variables. The predictive power of the model was based on R^2 while F-statistic was used to determine the fitness of the model at $P < 0.05$. The significance of the study variables was also based on P-values at 0.05 significance level.

Test for Hypothesis One

The first specific objective of the study was to assess the effect of post-award contract monitoring and evaluation on performance in the road construction industry in Kenya. The associated null hypothesis was that post-award contract monitoring and evaluation has no significant effect on performance of national government road projects in Kenya. A univariate analysis was conducted in which performance of national government road projects in Kenya was regressed on post-award contract monitoring and evaluation.

The R-Squared depicted the variation in the dependent variable that can be explained by the independent variables. As indicated in Table 9, the adjusted R-squared for the relationship between post-award contract monitoring and evaluation and performance of national government road projects in Kenya was 0.505; this is an indication that at 95% confidence interval, 50.5% of variation in performance of national government road projects in Kenya can be attributed to changes in post-award contract monitoring and evaluation. Therefore, post-award contract monitoring and evaluation can be used to explain 50.5% of changes in performance of national government road projects in Kenya but there are other factors that can be attributed to 49.5% change in performance of national government road projects in Kenya other than post-award contract monitoring and evaluation.

Table 9: Model Summary for Post-award contract monitoring and evaluation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.714[a]	.509	.505	.59431

a. Predictors: (Constant), Post-award contract monitoring and evaluation

The analysis of variance was used to determine whether the regression model is a good fit for the data. It also gave the F-test statistic; the linear regression's F-test has the null hypothesis that there is no linear relationship between the two variables. From the analysis of variance (ANOVA) findings in Table 10, the study found out that that Prob>$F_{1,111}$= 0.000 was less than the selected 0.05 level of significance. This suggests that the model as constituted was fit to predict performance of national government road projects in Kenya. Further, the F-calculated, from the table (115.266) was greater than the F-critical, from f-distribution tables (3.927) supporting the findings that post-award contract monitoring and evaluation can be used to predict performance of national government road projects in Kenya.

Table 10: ANOVA for Post-award contract monitoring and evaluation

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.713	1	40.713	115.266	.000[b]
	Residual	39.206	111	.353		
	Total	79.919	112			

a. Dependent Variable: Project Performance

b. Predictors: (Constant), Post-award contract monitoring and evaluation

From the results in Table 11, the following regression model was fitted.

$$Y = 0.127 + 0.924\ X_1$$

(X_1 is Post-award contract monitoring and evaluation)

The coefficient results showed that the constant had a coefficient of .127 suggesting that if post-award contract monitoring and evaluation was held constant at zero, performance of national government road projects in Kenya would be at 0.127 units. In addition, results showed that post-award contract monitoring and evaluation coefficient was 0.924 indicating that a unit increase in post-award contract monitoring and evaluation would result in a 0.924 improvement in performance of national government road projects in Kenya. It was also noted that the P-value for post-award contract monitoring and evaluation was 0.000 which is less than the set 0.05

significance level indicating that post-award contract monitoring and evaluation was significant. Based on these results, the study rejected the null hypothesis and accepted the alternative that post-award contract monitoring and evaluation has positive significant effect on performance of national government road projects in Kenya.

The study findings agree with Liu et al. (2017) that robust post-award contract monitoring and evaluation processes contributed to enhanced project performance. Similarly, Osei-Kyei and Chan (2015) reviewed studies on critical success factors for public-private partnership projects and emphasized the significance of effective monitoring and evaluation in achieving project success. The findings also align with Chinyio and Olomolaiye (2019) who emphasized the importance of performance improvement in construction projects and highlighted the role of effective monitoring and evaluation practices in driving positive project outcomes.

Table 11: Beta Coefficients for Post-award contract monitoring and evaluation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.127	.037		3.432	.007
	Post-award contract monitoring and evaluation	.924	.086	.714	10.736	.000

a. Dependent Variable: Project Performance

Test for Hypothesis Two

The fifth objective of the study was to establish the moderating effect of regulatory framework on the relationship between post-award contract monitoring and evaluation and the performance of national government road projects in Kenya. The null hypothesis (**H_{05}**) states that Regulatory Framework has no significant moderating effect on the relationship between post-award contract monitoring and evaluation and performance of national government road projects in Kenya.

To test this hypothesis, the study conducted regression analysis, including post-award contract monitoring and evaluation as the independent variable, performance of national government road projects as the dependent variable, and Regulatory Framework as the moderating variable. The model summary results in Table 12 show that the R-squared value for the first model (without the moderating variable) is 0.684, indicating that approximately 68.4% of the variation in project performance can be explained by changes in post-award contract management. The adjusted R-squared value is 0.681, suggesting a good fit even after controlling for other factors. The findings in the second model included both post-award contract monitoring and evaluation and Regulatory Framework as predictors, along with their interaction term. The R-squared value for this model increased to 0.875, indicating that the introduction of Regulatory Framework as a moderating variable led to a 19.2% increase in the amount of variation explained by the model. This suggests that Regulatory Framework positively moderate the relationship between post-award contract monitoring and evaluation and project performance.

Table 12: 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	.827[a]	.684	.681	.47714	.684	240.038	1	111	.000
2	.936[b]	.875	.873	.30077	.192	169.359	1	110	.000

a. Predictors: (Constant), Post-award contract monitoring and evaluation

b. Predictors: (Constant), Post-award contract monitoring and evaluation, Regulatory Framework

The analysis of variance (ANOVA) results in Table 13 reveal that the first regression model is statistically significant. The Prob>F value of 0.000 is less than the significance level of 0.05, indicating a good fit for predicting the performance of national government road projects. The F-

calculated value of 240.038 is greater than the F-critical value (3.927), providing further evidence of the significance of the model. In the second model, the R-squared value increases to 0.875, indicating that the addition of the moderating variable improves the explanation of project performance. The F-calculated value of 256.702 is highly significant (sig. = 0.000), supporting the finding that Regulatory Framework have a moderating effect.

Table 13: ANOVA for Moderation Effect

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	54.648	1	54.648	240.038	.000[b]
	Residual	25.271	111	.228		
	Total	79.919	112			
2	Regression	70.010	3	23.337	256.702	.000[c]
	Residual	9.909	109	.091		
	Total	79.919	112			

a. Dependent Variable: Project Performance
b. Predictors: (Constant), Post-award contract monitoring and evaluation
c. Predictors: (Constant), Post-award contract monitoring and evaluation, Regulatory Framework , Interaction

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

$$Y= 0.413 + 0.360 X + 0.581 M + 0.653 X*M$$

Where X is Post-award contract monitoring and evaluation; M is Regulatory Framework and X*M is the interaction term between Post-award contract monitoring and evaluation and Regulatory Framework.

The findings show that when Post-award contract monitoring and evaluation, Regulatory Framework and the interaction term (X*M) are held to a constant zero, performance of national government road projects in Kenya will be at a constant value of 0.431. The model also indicated that Post-award contract monitoring and evaluation had a positive and statistically significant effect on performance of national government road projects in Kenya as shown by a regression coefficient of 0.360 (p-value= 0.000). It is also seen that Regulatory Framework had a positive and significant effect on performance of national government road projects in Kenya as shown by a regression coefficient 0.581. On the other hand, interaction of Post-award contract monitoring and evaluation and Regulatory Framework (X*M) also had a positive and significant effect on performance of national government road projects in Kenya as shown by a regression coefficient of 0.653 (p-value= 0.000).

Based on these findings, the null hypothesis ($\mathbf{H_{02}}$) that Regulatory Framework have no significant moderating effect on the relationship between Post-award contract monitoring and evaluation and the performance of national government road projects in Kenya is rejected. The study provides evidence supporting the alternative hypothesis, indicating that Regulatory Framework do have a positive significant moderating effect on this relationship between Post-award contract monitoring and evaluation and performance of national government road projects in Kenya.

The study's findings align with Smith and Andrews (2018) who highlighted the importance of Regulatory Framework in ensuring transparency, accountability, and fairness in government contracts. They emphasized that effective regulations create a conducive environment for proper contract management, ultimately leading to improved project performance.

Table 14: Beta Coefficients for Moderation Effect

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.206	.099		2.081	.031
	Post-award contract management	.916	.059	.827	15.493	.000
2	(Constant)	.431	.121		3.580	.001
	Post-award contract management	.360	.057	.325	6.339	.000
	Regulatory Framework	.581	.045	.666	13.014	.000
	Interaction (X*M)	.653	.115	.749	5.660	.000

Conclusions

The study's analysis revealed that post-award contract monitoring and evaluation indeed has a statistically significant influence on the performance of national government road projects in Kenya. This signifies that a rigorous approach to monitoring and evaluating contracts positively contributes to project performance. Consequently, the null hypothesis H_{01}, which suggested no effect of post-award contract monitoring and evaluation on performance, was rejected. The study concludes that effective post-award contract monitoring and evaluation plays a crucial role in enhancing the performance of national government road projects in Kenya.

The study's findings revealed a significant moderating effect of the regulatory framework on the relationship between post-award contract monitoring and evaluation and the performance of national government road projects in Kenya. This suggests that as regulatory frameworks improve, the influence of post-award contract monitoring and evaluation on project performance becomes more pronounced. Consequently, we reject the null hypothesis H_{05}, which posited that regulatory framework has no moderating influence. The study concludes that as regulatory framework is crucial, it does significantly alter the relationship between post-award contract monitoring and evaluation and project performance in the context of national government road projects in Kenya.

Recommendations

Effective post-award contract monitoring and evaluation should be a top priority for national government road projects in Kenya. To enhance project performance, government agencies should invest in robust monitoring systems that track project progress, compliance with contract terms, and budget adherence. Regular evaluations should be conducted to identify areas for improvement and to ensure that contractors are held accountable for their commitments. Furthermore, training and capacity building programs for project personnel in post-award contract monitoring and evaluation practices should be implemented to ensure that the process is carried out efficiently and effectively.

Since the regulatory framework was found to have significant moderating influence on the relationship between post-award contract monitoring and evaluation and project performance, it remains a critical aspect of project governance. National government agencies should continually assess and update the regulatory framework to align with best practices and industry standards. Moreover, they should strive to streamline and simplify regulatory processes to reduce bureaucratic hurdles that may hinder project progress. Effective collaboration between regulatory authorities and project management teams can help ensure that projects are conducted in compliance with all relevant laws and regulations.

Recommendations for Further Studies

While the study focused on the national government road projects, future research should consider extending the investigation to other industries like services, retail, or agriculture. Assessing how the identified post-award contract monitoring and evaluation practices impact performance in diverse sectors can provide valuable insights into the generalizability and transferability of the findings.

Present study focused on moderating influence of regulatory framework. Future studies could explore alternative moderating variables such as organizational culture, or even information technology integration. Investigating these different moderators can help build a more comprehensive understanding of how various factors interact within the post-award contract management-performance relationship.

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