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POST- AWARD CONTRACT MANAGEMENT AND PERFORMANCE OF KENYA NATIONAL HIGHWAY AUTHORITY PROJECTS IN KENYA

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ABSTRACT

Road construction projects in Kenya have been getting sustainability warnings owing to poor quality standards, frequent delays, and persistent cost overruns. These challenges have been largely attributed to weak post-award contract management practices, including insufficient risk control, poor communication, limited stakeholder involvement, and non-compliance with contractual and regulatory frameworks. Despite growing attention on procurement processes, the post-award phase which is crucial to actual project delivery remains understudied in Kenya's public infrastructure sector. This study examined the influence of post-award contract management on the performance of Kenya National Highways Authority (KeNHA) projects, with specific focus on communication and information flow and compliance management. The research adopted a cross-sectional survey design, targeting 543 KeNHA staff members directly involved in project implementation. A sample of 230 respondents was selected using the Yamane formula and purposive sampling techniques. Primary data were collected through structured questionnaires, and analysis was conducted using SPSS Version 23. Both descriptive statistics and inferential methods such as Pearson correlation and multiple linear regression were employed to test hypotheses and relationships. Findings revealed that each of the post-award contract management dimensions had a statistically significant positive influence on project performance. Strong communication mechanisms improved coordination and problem resolution. The study concludes that improving post-award contract management is critical to enhancing the performance of KeNHA road infrastructure projects. It recommends the institutionalization of post-award performance tracking systems, stakeholder inclusion frameworks, and continuous compliance audits. These measures will contribute to more efficient project delivery, reduced wastage of public funds, and improved road infrastructure outcomes. The findings provide empirical support for policy reforms aimed at strengthening contract execution in Kenya's public sector.

Key Words: Post-Award Contract Management, Project Performance, Communication and Information Flow, Compliance Management, Kenya National Highways Authority (KeNHA)

Background of the Study

Infrastructure development remains a critical pillar for economic growth, regional integration, and social development in Kenya. Among the key institutions mandated to deliver on this agenda is the Kenya National Highways Authority (KeNHA), which oversees the development, rehabilitation, and maintenance of national trunk roads. While substantial investments have been made in road infrastructure, many projects continue to suffer from delays, cost overruns, and quality deficiencies (World Bank, 2020; Auditor General's Report, 2019). This raises significant concerns regarding the effectiveness of post-award contract management, which encompasses all activities and processes after the contract has been signed, including performance monitoring, compliance enforcement, stakeholder coordination, and risk mitigation.

According to Ofori (2018), while pre-award processes such as tendering and contractor selection are often emphasized, it is the post-award phase that largely determines whether a project will achieve its intended performance outcomes. Poor contract management practices post-award can lead to weak accountability, contract disputes, and failure to mitigate emergent risks—factors that have been frequently cited in the underperformance of infrastructure projects in sub-Saharan Africa (Ghosh & Bhuiyan, 2019). In Kenya, specific challenges facing public road infrastructure projects include inadequate communication flows, regulatory non-compliance, and ineffective risk mitigation, (Ngugi & Were, 2017; KIPPRA, 2020).

Post-award contract management can be broadly understood through several key dimensions. These include: communication and information flow, which ensures timely and accurate exchange of project-related information (Kerzner, 2015); and compliance management, which ensures adherence to legal, environmental, and safety standards (ISO 21500, 2012). Each of these dimensions plays a crucial role in shaping project performance, typically measured in terms of timely delivery, cost control, and quality of road infrastructure (PMI, 2013).

Despite growing recognition of the importance of post-award contract management, empirical studies focusing on its influence on the performance of road infrastructure projects in Kenya, particularly within KeNHA, remain limited. This research, therefore, seeks to bridge this gap by examining how different aspects of post-award contract management influence the performance of KeNHA projects. The study is guided by a conceptual framework that integrates key constructs: communication and information flow and compliance management, and assesses their collective and individual impact on project performance.

Statement of the Problem

Kenya continues to invest heavily in road infrastructure, with the Kenya National Highways Authority (KeNHA) at the forefront of implementing flagship road projects under Vision 2030 and the Medium-Term Plans. Despite these investments, the performance of many KeNHA projects remains suboptimal. According to the Auditor-General's Report (2020), over 35% of national road projects audited between 2017 and 2020 experienced cost overruns, while 42% suffered significant time delays, some extending up to three years beyond the scheduled completion dates. These inefficiencies have contributed to the escalation of project costs, wastage of public resources, and incomplete or poor-quality infrastructure.

One of the core issues underlying these project failures is weak post-award contract management. After the contract is awarded, critical aspects such as compliance enforcement, risk mitigation, stakeholder coordination, and communication breakdowns are often neglected or poorly executed. The Public Procurement Regulatory Authority (PPRA, 2021) noted that over 60% of complaints related to government procurement stem from the post-award phase, with common issues including failure to meet milestones, inadequate monitoring, and lack of timely contractor evaluations. This highlights a glaring gap in contract execution practices,

which undermines project delivery despite adherence to procurement procedures during the pre-award phase.

Moreover, a survey by the Institute of Economic Affairs (IEA Kenya, 2020) revealed that only 28% of public infrastructure projects were completed on time and within budget, with the roads sector performing below national average benchmarks. These delays and budget excesses are often linked to weak enforcement of contract terms, ineffective risk handling, and poor communication between implementing agencies and contractors. For instance, the Mombasa–Mariakani road expansion, initially scheduled for completion in 2019, faced a cost increase of over KES 6 billion and multiple extensions, largely due to contract administration inefficiencies during implementation.

Despite the availability of legal and institutional frameworks such as the Public Procurement and Asset Disposal Act (2015) and KeNHA's internal contract management manuals, the lack of structured approaches to managing post-award processes continues to hinder effective project execution. Additionally, most prior research in Kenya has predominantly focused on procurement planning and contractor selection, with limited empirical studies examining the post-award contract phase and its influence on project outcomes, particularly in large-scale infrastructure projects.

Therefore, this study sought to fill this gap by investigating how key dimensions of post-award contract management, namely communication and information flow, and compliance management, affect the performance of KeNHA projects. Addressing this problem is critical to enhancing efficiency, ensuring accountability, and maximizing value for money in public infrastructure investments.

Objectives of the Study

The general objective of this study was to examine the influence of post-award contract management on the performance of Kenya National Highways Authority (KeNHA) projects in Kenya.

Specific Objectives

The study was guided by the following specific objectives:

1. To evaluate the influence of communication and information flow on the performance of KeNHA projects in Kenya.
2. To determine the influence of compliance management on the performance of KeNHA projects in Kenya.

LITERATURE REVIEW

Theoretical Review

Systems Theory

Systems Theory, first developed by biologist Ludwig von Bertalanffy in the 1950s, is grounded in the idea that no element in a system functions in isolation; rather, the system's performance depends on the interaction and alignment of its internal components (Skyttner, 2005). Originally applied in biology, the theory has since been adapted to fields like engineering, healthcare, and management. Within organizational and project management contexts, Systems Theory underscores the importance of interdependence, feedback loops, and structured communication channels as critical to effective coordination and outcomes. It conceptualizes organizations as open systems that convert inputs (resources and information) into outputs (services, infrastructure, or results), requiring constant information flow to maintain coherence (Kast & Rosenzweig, 1972; Senge, 1990).

In post-award contract management, particularly in infrastructure projects, Systems Theory directly supports the role of communication and information flow as vital to successful project execution. For institutions such as the Kenya National Highways Authority (KeNHA), road projects involve a multitude of actors—contractors, engineers, consultants, and government officers—each operating at different points in the system. The theory suggests that communication breakdowns across these stakeholders can lead to systemic failure, such as decision-making delays, conflict, duplication of effort, and budget overruns (Office of the Auditor General, 2020; Transparency International Kenya, 2017). Effective communication structures—comprising reporting tools, real-time updates, escalation channels, and documentation—are therefore not just logistical necessities but critical enablers of coordination across the entire project ecosystem (Kerzner, 2015).

Moreover, Systems Theory advocates for responsive and bidirectional communication, especially in managing uncertainty and adapting to site-specific challenges such as resource shortages or regulatory issues. When communication flows are weak, projects often suffer from issues like scope creep, contractor disputes, and missed deadlines. However, Systems Theory is not without critique. It tends to assume that all components will naturally align if properly connected, often overlooking the political and institutional barriers common in public projects. Hierarchies, competing interests, and deliberate obstruction of communication are realities that the theory does not adequately address (Checkland, 1999; Mintzberg, 1983). Still, as a conceptual tool, it offers valuable insight into how communication contributes to systemic cohesion and successful project delivery in complex environments like public infrastructure.

Institutional Theory

Institutional Theory provides a robust framework for understanding how organizations respond to the broader structures—laws, norms, and societal expectations—within which they operate. Initially articulated by scholars such as Meyer and Rowan (1977), and later expanded by DiMaggio and Powell (1983) and Scott (2001), the theory argues that organizational behavior is shaped not only by efficiency goals but also by the pursuit of legitimacy. Organizations conform to institutional pressures—both formal and informal—to secure support, stability, and continuity. In doing so, they often replicate industry standards, adhere to legal regulations, and align with societal norms.

The theory distinguishes between three pillars: the regulative, which refers to rules and enforcement mechanisms; the normative, encompassing professional standards and social expectations; and the cognitive, involving shared beliefs and cultural frameworks (Scott, 2001). This triadic model is especially pertinent in public sector infrastructure delivery, where organizations like KeNHA must navigate complex institutional environments. Compliance management, a core function of post-award contract management, is governed by legal frameworks such as the Public Procurement and Asset Disposal Act (2015), along with environmental, safety, and reporting standards. Adherence to these norms is not merely procedural—it signals credibility to external stakeholders including government regulators, international donors, and the general public (World Bank, 2020).

Institutional Theory also helps explain inconsistencies in organizational behavior through the concept of "decoupling"—where compliance structures exist on paper but are poorly implemented in practice (Meyer & Rowan, 1977). This is a common issue in Kenya's public procurement sector, where compliance checklists may be completed, but enforcement is undermined by weak oversight or political interference. In such environments, compliance becomes a ritualized activity rather than a functional one. The theory further illuminates how public institutions adopt visible compliance routines more for symbolic legitimacy than for actual operational rigor, leading to gaps between stated policies and real-world practices.

Despite its relevance, Institutional Theory faces criticism for overemphasizing conformity while underappreciating agency and innovation. In infrastructure settings, rigid adherence to institutional norms can cause bureaucratic inertia, delaying decision-making and stifling adaptive responses to project challenges (Greenwood et al., 2008). Furthermore, the theory does not fully account for power asymmetries or corrupt practices that distort compliance, such as rent-seeking, political manipulation, or elite capture—factors that are well-documented in the Kenyan public procurement landscape (Obanda, 2010). Still, Institutional Theory offers a powerful lens for examining how legal and social systems shape the behavior of agencies like KeNHA, and how compliance—or the lack thereof—can significantly influence infrastructure project outcomes.

Conceptual Framework

A conceptual framework is a structured set of concepts and variables that visually or narratively illustrates the presumed relationships between the independent and dependent variables in a study. It acts as a roadmap for research, helping to clarify how key constructs interact and influence each other based on theoretical foundations and empirical evidence (Adom, Hussein, & Agyem, 2018). The framework guides the research design, data collection, and analysis by outlining the logical structure of inquiry. In this study, the conceptual framework was developed to examine the influence of post-award contract management practices on the performance of road infrastructure projects managed by the Kenya National Highways Authority (KeNHA). The framework is anchored on four independent variables communication and information flow, and compliance management—which are theorized to influence the dependent variable, project performance.

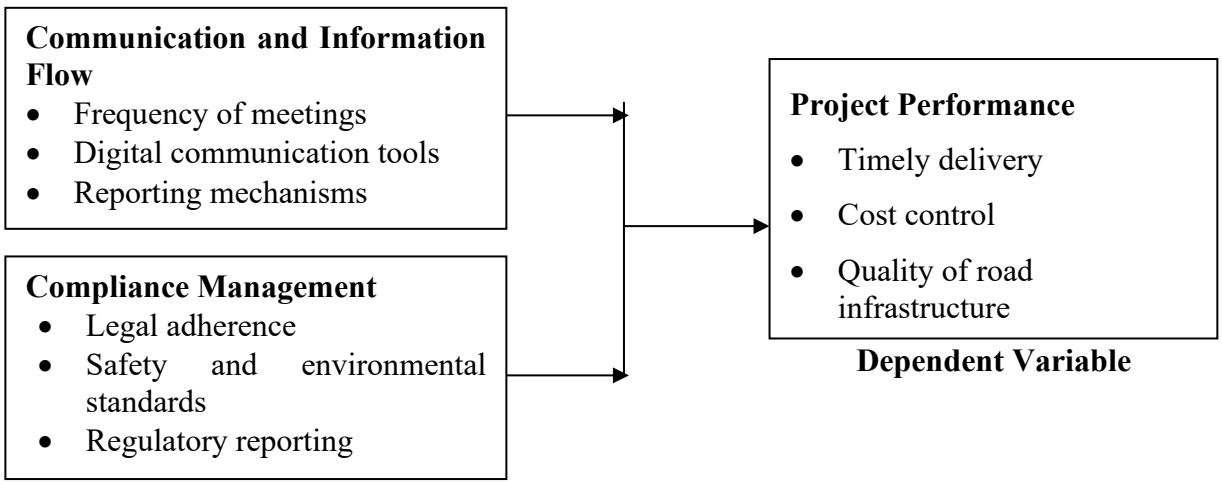

Figure 2. 1: Conceptual Framework

Communication and Information Flow

Communication and information flow refer to the processes by which data, instructions, progress updates, and feedback are exchanged among stakeholders involved in a project. In post-award contract management, this entails the structured dissemination, reception, and interpretation of information between clients, contractors, consultants, regulatory bodies, and other relevant actors during project implementation (Kerzner, 2015). Efficient communication ensures that all stakeholders remain informed, aligned, and responsive to evolving project conditions.

In infrastructure project execution especially road projects managed by agencies like the Kenya National Highways Authority (KeNHA) the role of communication cannot be overstated.

These projects are often geographically dispersed, involve multiple technical teams, and require coordination across various administrative layers. Poor communication in such settings may result in misinterpretation of contract terms, delayed approvals, inconsistent documentation, unaddressed site issues, and ultimately, performance failure (PMI, 2013). According to Müller and Turner (2010), communication quality is one of the top predictors of project success across industries.

Effective communication systems typically include project meetings, written reports, digital dashboards, construction management software, escalation protocols, and real-time alerts. These tools facilitate timely decision-making, reduce misunderstandings, and promote transparency. Moreover, bidirectional communication where feedback from contractors and field staff informs higher-level decisions is essential for resolving issues and adapting plans to ground realities (Mazur, Pisarski, & Chang, 2014).

Information flow also plays a critical role in monitoring and control. Post-award activities such as progress tracking, financial reporting, and quality assurance depend on the regular flow of accurate and verifiable information. As noted by Zwikael and Smyrk (2011), without reliable data exchange, project teams struggle to evaluate progress, identify deviations, or enforce contractual obligations. This can lead to project delays, cost overruns, or regulatory non-compliance.

In Kenya, communication gaps have been cited as a recurring weakness in public infrastructure delivery. The Office of the Auditor General (2020) reported instances where delayed communication between KeNHA and contractors resulted in stalled projects, unresolved variations, and late payments undermining project performance. The fragmentation of reporting systems, lack of integration between project offices and headquarters, and weak documentation practices further compound the issue. From a systems perspective, effective communication contributes to the overall coherence and resilience of the project environment (Skyttner, 2005). It enables all actors to respond to risks, align their actions, and collectively deliver value. When communication flows are well-established, projects are more likely to meet performance targets related to time, cost, quality, and stakeholder satisfaction.

Compliance Management

Compliance management refers to the process of ensuring that all actions, decisions, and operations within a project conform to applicable laws, regulations, standards, contractual obligations, and ethical expectations. In post-award contract management, it involves monitoring adherence to procurement rules, contract specifications, labor laws, environmental guidelines, safety regulations, and reporting requirements (OECD, 2016). It is a fundamental function in public infrastructure projects, where public accountability, transparency, and legal scrutiny are paramount.

In Kenya, agencies such as the Kenya National Highways Authority (KeNHA) operate within a regulated institutional framework defined by instruments like the Public Procurement and Asset Disposal Act (2015), the Environmental Management and Coordination Act (EMCA), and sector-specific policies. Compliance management in this context requires routine audits, performance reviews, documentation protocols, contractor inspections, and adherence to timelines and quality benchmarks (World Bank, 2020). It serves to ensure not only legality and accountability but also alignment with donor conditions, national development priorities, and community expectations.

Post-award compliance management is critical to project performance for several reasons. First, it reduces the risk of project suspension, penalties, or legal action due to regulatory violations. Second, it enhances transparency and reduces opportunities for corruption, collusion, or unauthorized contract variations. Third, it ensures that health, safety,

environmental, and quality standards are upheld throughout project implementation. According to Arrowsmith (2010), robust compliance systems in public procurement significantly increase the likelihood of timely and cost-effective project completion.

Studies have shown a positive correlation between strong compliance practices and infrastructure project performance. For example, Osei-Kyei and Chan (2017) found that projects with active compliance monitoring mechanisms in place were more likely to achieve their contractual objectives in terms of time, budget, and quality. Similarly, in the Kenyan context, the Office of the Auditor General (2020) has flagged several stalled or non-performing road projects due to weak post-award compliance, such as failure to follow up on contractor obligations, poor record-keeping, and non-enforcement of penalties.

Compliance management also intersects with risk mitigation. A project that fails to comply with environmental impact conditions, for example, may face resistance from communities or legal injunctions that delay progress. Likewise, non-compliance with technical specifications may lead to rework or reputational damage. Thus, effective compliance is not only about following rules it is a strategic tool for maintaining control over project execution and safeguarding public resources (Koppenjan, 2005).

However, implementing compliance management in practice is often challenged by limited institutional capacity, political interference, and inadequate training of project personnel. In some cases, compliance is reduced to a box-ticking exercise, with little real enforcement or feedback. This undermines the credibility of the process and allows non-compliance to persist. To be effective, compliance systems must be backed by empowered oversight institutions, transparent reporting channels, and a culture of accountability (Transparency International Kenya, 2017).

Project Performance

Project performance refers to the extent to which a project meets its planned objectives in terms of time, cost, quality, and stakeholder satisfaction. In the context of infrastructure projects, especially public road construction, performance encompasses not only technical efficiency but also compliance with contractual terms, safety standards, and environmental or social obligations (PMI, 2013; Atkinson, 1999). It is a multidimensional construct that reflects both tangible outcomes such as physical delivery and intangible results, such as user satisfaction and institutional learning.

Traditionally, project performance has been measured using the "iron triangle" of time, cost, and quality (Atkinson, 1999). Time performance refers to whether the project is completed within the scheduled duration; cost performance assesses whether it is delivered within the approved budget; and quality measures whether the output meets design and technical specifications. These three indicators remain fundamental, particularly in evaluating the execution phase of infrastructure contracts.

In more recent years, scholars and practitioners have recognized that project performance also includes broader dimensions, such as regulatory compliance, safety records, and environmental sustainability (Toor & Ogunlana, 2010). For instance, a road project that is completed on time and within budget but fails to meet environmental requirements or community expectations may still be considered underperforming. In Kenya, this expanded view is essential given the social, political, and ecological complexity of infrastructure projects managed by institutions such as KeNHA.

Empirical studies emphasize that post-award contract management practices significantly influence project performance outcomes. For example, Zwikael and Smyrk (2011) found that projects with strong execution-stage controls such as risk management, stakeholder communication, and compliance enforcement were more likely to succeed. Similarly, Ika,

Diallo, and Thuillier (2012) observed that implementation-focused capabilities often determine whether infrastructure projects in developing countries achieve intended results.

In the case of KeNHA, project performance can be evaluated based on indicators such as on-time completion, budget adherence, construction quality, number of completed projects, and user satisfaction. National audit reports and donor performance assessments often rely on these criteria to assess how well government agencies manage public infrastructure (Office of the Auditor General, 2020; World Bank, 2020).

Poor project performance in Kenya's road sector has been widely documented and is frequently attributed to delays in disbursement, weak contract supervision, non-compliance with specifications, and inadequate post-award risk management (KIPPRA, 2019). This reinforces the relevance of the current study, which seeks to link post-award contract management variables to performance outcomes in a structured and empirical way.

In conclusion, project performance is the ultimate outcome variable that reflects the effectiveness of all upstream project management activities. In this study, it is influenced by four key post-award management dimensions: communication and information flow, and compliance management. Understanding this relationship is vital for improving the delivery and impact of KeNHA-managed infrastructure projects in Kenya.

Empirical Literature Review

Communication and Information Flow and Project Performance

Abdul-Rahman, Wang, and Mohamad (2010) conducted a study on communication effectiveness in construction project delivery in Malaysia. The study aimed to identify the barriers to effective communication among project teams and their effect on project outcomes. Using survey data from 112 construction professionals, the study found that delays in information sharing, lack of clarity in reporting, and poor documentation were directly linked to cost overruns and rework. The study concluded that communication breakdowns during the post-award phase often led to misalignment between contractors and clients, reducing the likelihood of successful project delivery.

Kiprotich, Wanyonyi, and Korir (2015) investigated the role of communication on performance of road construction projects in Uasin Gishu County, Kenya. The researchers employed a descriptive survey design and administered questionnaires to 96 project staff from government agencies and private contractors. The findings revealed that project teams with structured communication channels, including progress meetings, reporting templates, and escalation protocols, demonstrated better performance. In contrast, projects with informal or irregular communication recorded higher incidences of conflict, scope creep, and delayed approvals.

A study by Arditi and Gunaydin (1997) explored the impact of communication tools on the coordination of large construction projects in Turkey. The researchers used case study data from five infrastructure projects and found that the adoption of information technology tools such as electronic data interchange (EDI), construction management software, and digital dashboards greatly improved coordination, decision-making, and tracking of milestones. The study concluded that real-time communication enhanced collaboration and reduced decision-making delays, leading to improved performance.

Makori, Wanyoike, and Kyalo (2017) examined the influence of communication systems on project performance in government road projects in Nairobi County, Kenya. A sample of 130 respondents was surveyed using structured questionnaires. The study found that effective internal communication among stakeholders, timely circulation of updates, and comprehensive documentation contributed significantly to project efficiency. Projects that adopted

communication schedules and formal reporting structures were more likely to be completed on time and within budget.

Similarly, Gwaya, Masu, and Wanyona (2014) studied communication practices and their effect on project performance in public construction projects in Kenya. Their study included site engineers, contractors, and project managers from Nairobi-based infrastructure projects. It was observed that unstructured communication and inadequate information sharing during implementation phases led to confusion, errors in execution, and contractual disputes. The study recommended incorporating communication planning into post-award management frameworks to enhance accountability and alignment.

Compliance Management and Project Performance

Arrowsmith and Kunzlik (2009) conducted a comparative study on the role of compliance in public procurement systems across the European Union. Their analysis highlighted that countries with strong legal compliance mechanisms, including enforcement of procurement laws and regular auditing, experienced more consistent performance outcomes in infrastructure projects. The study emphasized that post-award compliance with contractual and regulatory frameworks reduced the frequency of project overruns, fraud, and contract disputes, ultimately enhancing project delivery and value for money.

Chepkwony and Mwangangi (2017) researched the influence of procurement compliance on the performance of road construction projects in Kenya. Targeting 110 respondents drawn from KeNHA and other road agencies, the study adopted a descriptive survey design. Findings indicated that non-compliance with procurement procedures, safety codes, and environmental regulations was a significant factor contributing to project delays and cost escalations. Projects that demonstrated high levels of compliance had better time management, fewer legal disputes, and improved stakeholder satisfaction.

Mutegi and Moronge (2018) studied the effects of regulatory compliance on project performance among water infrastructure projects in Nairobi County, Kenya. The researchers collected data from 138 project staff, and the results showed that strict adherence to legal, environmental, and financial reporting obligations led to better planning and execution. Non-compliant projects, on the other hand, faced frequent regulatory sanctions and suspension, negatively impacting completion timelines and cost efficiency.

Makori and Ombati (2019) evaluated the relationship between compliance monitoring and performance of public infrastructure projects in Kisii County, Kenya. Their research revealed that projects with active monitoring mechanisms, including scheduled inspections, performance audits, and reporting standards, recorded significantly higher performance outcomes. Compliance monitoring not only ensured that project milestones were achieved but also prevented unauthorized changes and deviations from scope.

Similarly, Mugo and Moronge (2016) assessed the effect of legal and institutional compliance on road construction project performance in Nairobi. Their study involved 120 practitioners, and results showed a positive correlation between contractual compliance and delivery of projects on time, within budget, and at the required quality standards. The study emphasized that effective compliance frameworks helped mitigate corruption, promote accountability, and reduce conflict among stakeholders.

RESEARCH METHODOLOGY

This study adopted a cross-sectional research design, which involves the collection of data from a defined population at a single point in time (Mugenda & Mugenda, 2003; Bryman, 2016). the target population comprised employees of the Kenya National Highways Authority (KeNHA) who are involved in the implementation, supervision, and oversight of road infrastructure

projects. The population was stratified according to job grades and designations, ensuring coverage of both managerial and operational levels involved in post-award contract management activities. According to the KeNHA Strategic Plan 2018/2019–2022/2023, the total target population was 543 employees.

This study employed a stratified random sampling technique, which allowed for proportionate representation across KeNHA's different job grades and designations. Stratification ensured that key insights were obtained from both senior management and technical/operational staff involved in post-award contract management. The overall sample size was determined using Yamane formula. Thus, the sample size for the study was 230 respondents.

The study employed a stratified random sampling procedure to ensure representation from all job categories within the Kenya National Highways Authority (KeNHA). Stratification was based on the official job grades and designations outlined in the KeNHA Strategic Plan (2018/2019–2022/2023), which grouped employees into distinct cadres ranging from senior management to support staff. After determining the overall sample size of 230 respondents. Once the proportional allocation was completed, simple random sampling was used within each stratum to select specific individuals, ensuring that every member of the population had an equal and known chance of being included in the study. This method reduced bias and enhanced the representativeness and reliability of the sample. The sample size was as shown in Table

Table 1: Sample size

Job Grade	Designation	Target Population	Sample Size
1	Director General	1	1
2	Directors	5	2
3	Deputy Directors	39	17
4	Assistant Directors / Principal Officers	31	13
5/6	Senior Officers / Officers	186	79
7/8	Senior Assistant Officers / Assistant Officers / Others	218	92
9/10	Support Staff	63	26
Total		**543**	**230**

The primary data collection instrument for this study was a semi-structured questionnaire, consisting of both closed-ended and open-ended questions. A questionnaire is a widely used tool in quantitative research for collecting standardized data efficiently from a large population (Kothari, 2004; Creswell, 2014). It was chosen due to its ability to generate data that is both measurable and comparable across respondents, while also allowing for in-depth insights through open responses.

According to Mugenda and Mugenda (2003), 10% of the sample size is considered adequate for piloting in social science research. Based on the calculated sample size of 230 respondents, the pilot test was conducted on 23 employees of KeNHA who were excluded from the final sample. The purpose of the pilot test was to identify and correct ambiguities, check the logical flow of questions, estimate the time needed to complete the questionnaire, and evaluate the instrument's effectiveness in capturing data relevant to the study objectives. Feedback from the pilot respondents was used to revise and improve the instrument before full-scale data collection.

Data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 23, which facilitated both descriptive and inferential statistical techniques. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize

responses and provide an overview of the demographic profile of respondents and their perceptions regarding each study variable. This helped in identifying general patterns and trends within the data. For inferential analysis, the study employed correlation analysis to examine the strength and direction of relationships between the independent variables and the dependent variable. Additionally, a multiple linear regression model was applied to determine the individual and combined effect of post-award contract management practices on project performance.

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

The researcher targeted a sample of 230 respondents, each of whom was administered a semi-structured questionnaire. Out of these, 219 questionnaires were fully completed and returned, resulting in a response rate of 95.3%. This response rate was considered highly suitable for data analysis and inference, exceeding the minimum threshold for acceptable survey research. According to Metsämuuronen (2017), a response rate above 50% is adequate, while a rate above 70% is considered excellent for making reliable generalizations. Therefore, the response rate achieved in this study falls well within the acceptable and commendable range, strengthening the validity of the findings and the credibility of conclusions drawn.

Descriptive Statistics Analysis

Descriptive statistics were used to summarize and interpret the data collected from the respondents regarding the study variables. These statistics included measures of central tendency (mean), measures of dispersion (standard deviation), as well as frequencies and percentages, which helped in understanding the distribution and consistency of responses (Stokes & Wall, 2017). The analysis was conducted using SPSS version 23, which enabled the generation of accurate statistical summaries for each variable. The study focused on five key variables: communication and information flow, compliance management, and project performance. The results from the descriptive analysis provided critical insights into how respondents perceived the influence of each of these factors on the performance of KeNHA road infrastructure projects.

Communication and Information Flow and Performance of KeNHA Projects

The first specific objective of the study was to establish the influence of communication and information flow on the performance of road infrastructure projects managed by the Kenya National Highways Authority (KeNHA). Respondents were asked to indicate their level of agreement with various statements related to internal and external communication practices using a five-point Likert scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. The results are summarized in Table 2.

From the results, respondents agreed that clear and structured communication protocols for project execution exist within KeNHA, as reflected by a mean of 3.996 (std. dev = 0.865). Respondents also agreed that regular project meetings help align teams and address implementation challenges, as indicated by a mean of 3.919 (std. dev = 0.945). The statement that communication tools such as emails, dashboards, and reports are effective and timely received a mean of 3.908 (std. dev = 0.611), while the agreement that information flows seamlessly between contractors, consultants, and KeNHA management was supported by a mean of 3.864 (std. dev = 0.908). In addition, respondents agreed that poor communication contributes to project delays or misunderstandings, with a mean of 3.861 (std. dev = 0.776).

The results also indicated that communication and information flow practices within KeNHA are generally effective and positively influence project outcomes. Respondents agreed that structured protocols, regular meetings, timely reporting, and seamless information sharing among stakeholders enhance project coordination and reduce delays. These findings are consistent with the work of Abdul-Rahman, Wang, and Mohamad (2010), who established that

poor communication is a major contributor to cost overruns and project inefficiencies in construction. Likewise, Makori, Wanyoike, and Kyalo (2017) found that formal communication systems significantly improve efficiency in government road projects. Moreover, Gwaya, Masu, and Wanyona (2014) observed that inadequate information flow in public construction projects leads to misunderstandings and contractual conflicts. The results of this study therefore reinforce the role of effective communication in improving project delivery, echoing literature that links it to stakeholder alignment, real-time decision-making, and enhanced project performance.

Table 2: Communication and Information Flow and Performance of KeNHA Projects

Statement	Mean	Std. Deviation
We have clear and structured communication protocols for project execution.	3.996	0.865
Regular project meetings help to align teams and address implementation challenges.	3.919	0.945
Communication tools (emails, dashboards, reports) are effective and timely.	3.908	0.611
Information flows seamlessly between contractors, consultants, and KeNHA management.	3.864	0.908
Poor communication contributes to project delays or misunderstandings.	3.861	0.776
Aggregate Mean	**3.822**	**0.841**

Compliance Management and Performance of KeNHA Projects

The second specific objective of the study was to determine the influence of compliance management on the performance of Kenya National Highways Authority (KeNHA) road infrastructure projects. Respondents were asked to indicate their level of agreement with various statements related to compliance monitoring, regulatory adherence, and enforcement of contractual obligations. A five-point Likert scale was used, where 1 = Strongly Disagree and 5 = Strongly Agree. The findings are presented in Table 3.

The results revealed strong agreement that project teams regularly monitor compliance with procurement regulations, as shown by a mean score of 3.97 (std. dev = 0.905). Respondents also agreed that environmental, social, and safety standards are adhered to during project implementation, with a mean of 3.96 (std. dev = 0.885). The statement that contractual obligations are reviewed and enforced during implementation received a mean of 3.89 (std. dev = 0.787), while the importance of compliance audits as part of oversight had a mean of 3.80 (std. dev = 0.605).

Respondents further agreed that non-compliance contributes to performance shortfalls or sanctions, supported by a mean of 3.78 (std. dev = 0.981), and that project closure can result from unresolved compliance issues, with a mean of 3.71 (std. dev = 0.986). The aggregate mean for the variable was 3.87, indicating a strong perception that compliance management is critical to ensuring successful project outcomes at KeNHA.

These findings are in line with prior studies emphasizing the significance of compliance mechanisms in public infrastructure projects. For instance, Mutegi and Moronge (2018) found that regulatory compliance, including enforcement of contract terms and adherence to safety standards, was positively correlated with project success in Kenya's water sector. Similarly, Makori and Ombati (2019) established that compliance audits and legal adherence mechanisms reduce project risk and enhance quality delivery in road construction. Furthermore, Odoyo and Mbithi (2018) noted that effective compliance management minimizes contractual disputes and helps maintain public trust. The current study reinforces the notion that structured and

continuous compliance practices are not only critical for regulatory adherence but also for ensuring project integrity, timely delivery, and stakeholder satisfaction.

Table 3: Compliance Management and Performance of KeNHA Projects

Statement	Mean	Std. Deviation
Project teams regularly monitor compliance with procurement regulations.	3.97	0.905
We ensure compliance with environmental, social, and safety standards during project execution.	3.96	0.885
Contractual obligations are reviewed and enforced during implementation.	3.89	0.787
Compliance audits are conducted as part of project oversight.	3.80	0.605
Failure to enforce compliance results in performance shortfalls or sanctions.	3.78	0.981
Project closure can result from unresolved compliance-related issues.	3.71	0.986
Aggregate Mean	**3.87**	**0.867**

Performance of Kenya National Highways Authority (KeNHA) Projects

The study sought to assess the overall performance of KeNHA road infrastructure projects, which served as the dependent variable. Respondents were asked to indicate their level of agreement with key performance indicators using a five-point Likert scale where 1 = Strongly Disagree and 5 = Strongly Agree. These indicators included timeliness, cost control, environmental compliance, organizational competence, knowledge gains, and capacity building. The findings are summarized in Table 4.

According to the results, respondents agreed that projects are completed on time and within budget, as reflected by a mean score of 3.984 (std. dev = 0.997). Similarly, they agreed that project activities are carried out as scheduled, with a mean of 3.975 (std. dev = 0.789), and that projects comply with environmental regulations, indicated by a mean of 3.905 (std. dev = 0.830). The statement that organizations show competence in meeting defined standards was supported by a mean of 3.888 (std. dev = 0.563), while the agreement that projects help organizations gain knowledge or understanding yielded a mean of 3.829 (std. dev = 0.851). Finally, respondents agreed that project implementation leads to improved organizational capacity, as shown by a mean of 3.797 (std. dev = 0.882). The aggregate mean of 3.849 implies that the overall perception of project performance at KeNHA is positive.

These findings are consistent with previous studies that link effective contract and project management practices with high infrastructure project performance. Chege, Kimani, and Ondari (2015) found that project success in public construction is largely defined by timely completion, budget adherence, and regulatory compliance. Similarly, Ngacho and Das (2014) highlighted that public sector infrastructure projects in Kenya often measure success using a combination of efficiency metrics (time and cost) and broader impact indicators like institutional learning and stakeholder satisfaction. Additionally, Agyekum-Mensah et al. (2012) emphasize that environmental compliance and stakeholder responsiveness are increasingly used as performance benchmarks in road projects across Africa. The results of this study therefore affirm that KeNHA projects are meeting key performance standards, both in terms of execution and institutional impact.

Table 4: Performance of KeNHA Road Infrastructure Projects

Statement	Mean	Std. Deviation
Projects are finished on time and within budget.	3.984	0.997
Project activities are carried out as scheduled.	3.975	0.789
Projects comply with environmental regulations.	3.905	0.830
Organizations show competence to defined standards.	3.888	0.563
Projects help organizations to gain knowledge/understanding.	3.829	0.851
Improvement in organizational capacity is possible through projects.	3.797	0.882
Aggregate Mean	**3.849**	**0.818**

Correlation Analysis

Pearson correlation analysis was used to determine the strength and direction of the association between the independent variables and project performance. The Pearson correlation coefficient (r) ranges from 0 to ±1, where values close to ±1 indicate a stronger relationship. The interpretation follows Taylor's (2018) guideline: 0.80 to 1.00 = Very Strong, 0.60 to 0.79 = Strong, 0.40 to 0.59 = Moderate, and 0.20 to 0.39 = Weak

Table 5: Correlation Coefficients

		Project Performance	Communication and Information Flow	Compliance Management
Project Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	219		
Communication and Information Flow	Pearson Correlation	.824**	1	
	Sig. (2-tailed)	.001		
	N	219	219	
Compliance Management	Pearson Correlation	.901**	.189	1
	Sig. (2-tailed)	.002	.082	
	N	219	219	219

A very strong and significant relationship was found between communication and information flow and project performance, with a correlation coefficient of r = 0.824 and a p-value of 0.001. This indicates that efficient and timely flow of project information among stakeholders enhances coordination, reduces misunderstandings, and promotes accountability, ultimately leading to better project outcomes. This finding aligns with the study by Miranti, Arik, and Muhammad (2019), who emphasized that effective internal communication mechanisms are essential for ensuring public infrastructure project success.

There was a very strong and significant relationship between compliance management and project performance, as indicated by a correlation coefficient of r = 0.901 and a p-value of 0.002. This implies that strict adherence to procurement regulations, safety standards, and contract terms plays a major role in enhancing project quality, minimizing legal risks, and improving overall delivery outcomes. The results echo the findings of Odoyo and Mbithi (2018), who observed that robust compliance frameworks ensure transparency and consistency in the execution of infrastructure projects

Regression Analysis

Table 6: Regression Coefficients

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	0.134	0.039		3.436	0.001
Communication & Information Flow	0.486	0.107	0.482	4.121	0.001
Compliance Management	0.454	0.088	0.452	5.057	0.000

Based on the unstandardized coefficients, the resulting regression model is:

$$Y= 0.134 + 0.486X_1 + 0.454X_2 + \varepsilon$$

Where: Y = Project Performance; X_1 = Communication and Information Flow, X_2 = Compliance Management

Communication and Information Flow recorded a coefficient of B = 0.486, with a p-value of 0.001, signifying the strongest positive impact among all variables in the model. This suggests that timely, clear, and structured communication among stakeholders, contractors, consultants, and project teams significantly enhances project execution. This outcome aligns with the study by Miranti, Arik, and Muhammad (2019), which demonstrated that internal communication clarity and consistency directly correlate with improved resource coordination and faster decision-making in government-funded projects. Gwaya, Masu, and Wanyona (2014) similarly emphasized that poor information flow leads to misunderstandings and bottlenecks in Kenyan public sector construction.

Compliance Management yielded a coefficient of B = 0.454, with a p-value of 0.000, making it one of the strongest predictors of project performance. This result indicates that strict adherence to procurement laws, contract terms, environmental and safety standards, and internal policy guidelines plays a central role in ensuring project delivery success.The importance of compliance is well-supported by Odoyo and Mbithi (2018), who demonstrated that monitoring of compliance requirements in procurement and engineering significantly reduces malpractices, contractual breaches, and reputational damage. Makori and Ombati (2019) also found that compliance audits help in identifying gaps early and enforcing corrective measures, leading to better cost control and quality assurance.

Conclusions

The study concludes that communication and information flow significantly influence project performance at KeNHA. The results indicated that structured communication protocols, regular information sharing, and the use of effective communication tools support timely decision-making, team alignment, and reduced operational bottlenecks during project implementation.

The study concludes that compliance management has a significant impact on project performance. The results showed that adherence to legal, regulatory, and contractual requirements, combined with regular audits and enforcement of standards, ensures accountability, improves quality, and safeguards the integrity of project outcomes.

Recommendations

The study found that communication and information flow significantly influence the performance of KeNHA projects. The study therefore recommends that the management should enhance internal and external communication mechanisms through standardized reporting protocols, digital communication tools, and regular coordination meetings to ensure that project information is accurate, timely, and accessible to all stakeholders.

The study also found that compliance management has a significant impact on project performance. The study therefore recommends that KeNHA should enhance its compliance mechanisms by conducting regular audits, enforcing contractual obligations, and ensuring adherence to legal, environmental, and safety standards. Training staff on regulatory frameworks and increasing transparency in procurement and execution processes will further promote performance and institutional integrity.

Suggestions for Further Studies

This study focused specifically on post-award contract management practices at the Kenya National Highways Authority (KeNHA). Future research could extend the scope to include other road agencies such as the Kenya Urban Roads Authority (KURA) or Kenya Rural Roads Authority (KeRRA) to enable cross-agency comparisons and generalization of findings.

Additionally, researchers could explore the influence of emerging technologies, such as contract management systems and digital monitoring tools, on project performance.

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