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Influence of Stakeholder Engagement on the Performance of Public-Private Partnership Road Infrastructure Projects: Case of Nairobi Expressway

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Abstract

Public-Private Partnerships are key to addressing Kenya's infrastructure challenges but suffer from poor monitoring and evaluation, including financial inefficiencies, poor stakeholder engagement, and weak risk governance. The study investigated the influence of stakeholder involvement on the performance of Public-Private Partnership Road infrastructure projects, with a case of the Nairobi Expressway. Stakeholder Theory guided the study. The research design was descriptive correlational, with a population of 50,050 people comprising 50 institutional populations and 50,000 road users. Purposive and simple random sampling were employed to select the final sample of 150 respondents from institutional and road user respondents respectively. Structured questionnaires with Likert scales and semi-structured interviews with some road users were used for data collection. Quantitative data were analysed using descriptive and inferential statistics, including Pearson's correlation and multiple linear regression. The result showed strong positive correlation with project performance ($r=0.718$) and explained 51.6% of performance variance ($\beta=0.487$, $p=0.000$). The study concluded that stakeholder engagement significantly influences PPP performance. Limited participation, weak communication, and inadequate feedback mechanisms reduced project acceptance and satisfaction. The study recommended that Amend PPP laws to require mandatory stakeholder consultation throughout project lifecycles. Establish permanent road user forums for ongoing engagement, develop publicly accessible project information portals, and institutionalize community participation in toll pricing reviews to ensure decisions balance financial sustainability with public affordability. The study recommended. The National Treasury - Public-Private Partnerships Directorate should amend Kenya's Public-Private Partnership Act (2021) to include meaningful stakeholder consultation as an enforceable and legally binding requirement throughout the entire lifecycle of PPP projects, from planning through implementation to operations.

Keywords: *Public-Private Partnerships, Nairobi Expressway, and Stakeholder Engagement, Project Performance.*

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1.0 Introduction

Infrastructure plays a key role in the economic growth and sustainable development of every country in the world. Infrastructure projects are capital-intensive, and inadequate financial resources exist in the public sector, making financing infrastructure a major challenge (World Bank, 2020). Public-Private Partnerships (PPPs) help address infrastructure funding gaps by combining public and private sector resources, sharing risks, and improving project delivery efficiency (OECD, 2020).

Public-Private Partnerships (PPPs) have become a key approach to infrastructure development, especially where public resources are limited. Countries such as the United Kingdom, Australia, and Canada have institutionalised PPPs through dedicated agencies that enhance project preparation, transparency, and implementation, contributing to the successful delivery of major infrastructure projects (OECD, 2020; Burger & Hawkesworth, 2021).

PPP performance varies across countries due to differences in legal, institutional, and economic environments. In many low- and middle-income countries, weak regulatory frameworks, limited project preparation capacity, and political risks hinder PPP implementation. Poor monitoring and evaluation systems and unclear procurement guidelines also reduce private sector investment, highlighting the need for strong institutional frameworks and context-specific PPP approaches (Harris, 2014; PPIAF, 2020; Global Infrastructure Hub, 2021).

PPPs are increasingly recognised for contributing to the Sustainable Development Goals (SDGs), particularly in transport, healthcare, energy, water, and sanitation. UNECE (2016) notes that PPPs can mobilise private capital and technical expertise to address infrastructure gaps in developing economies. Countries such as Colombia and Chile have successfully used PPPs to expand road infrastructure and improve healthcare services (Yescombe, 2021). However, concerns over transparency, social accountability, and long-term financial commitments have increased the emphasis on transparent procurement, open contracting, and strong monitoring systems to ensure PPPs deliver public value (Romero, 2014).

PPPs address infrastructure and service delivery challenges amid limited public finances. Their success depends on effective stakeholder participation and clear policy frameworks (ADB, 2019). PPPs are increasingly becoming a key mechanism in Africa to address the massive infrastructure and service delivery deficits. According to the African Development Bank (AfDB, 2021), the estimated infrastructure financing requirements for Africa range between \$130–170 billion, while the infrastructure financing gap is more than \$68–108 billion. Many African governments, in turn, have sought to use PPPs as additional financing mechanisms, which provide them with some control over projects and access to the private sector's expertise and resources.

With growing demand for efficient transport systems and limited public resources, Public-Private Partnerships (PPPs) have become a key strategy for addressing Kenya's road infrastructure deficit. Supported by the Public-Private Partnership Act (2021), PPPs promote value for money, risk sharing, and private sector investment in major road projects, in line with Kenya's Vision 2030 development agenda (Yescombe, 2017; Government of Kenya, 2021; Kenya Vision 2030 Delivery Secretariat, 2019).

In Kenya, the Nairobi Expressway is a Public-Private Partnership (P3) infrastructure project managed by the Public-Private Partnerships Directorate of the National Treasury. The Nairobi Expressway is a 27.1 km toll road that links Mlolongo to Westlands built by the China Road and Bridge Corporation (CRBC) and the Kenyan government under a Build-Operate-Transfer (BOT) basis (National Treasury, 2022). This study examines only the Nairobi Expressway as a case study because it is a high-profile PPP project completed during the 2020–2025 period,

with detailed monitoring and evaluation mechanisms and performance outcomes. The Expressway is important because it will improve travel times and enhance economic productivity – it's a perfect example for assessing the impact of project monitoring and evaluation processes.

The Nairobi Expressway has faced several challenges that highlight weaknesses in Kenya's PPP framework. High project costs and lower than expected toll revenues have raised concerns about financial sustainability (KIPPRA, 2023). Limited stakeholder engagement has also led to public dissatisfaction over toll charges, access, and equity, with only 30% of surveyed Kenyans reporting adequate awareness of the project's impacts (Transparency International Kenya, 2022). In addition, inadequate mitigation of noise and air pollution affected about 25% of neighbouring communities during construction (NEMA, 2022). These financial, stakeholder, and environmental challenges underscore the need to examine how stakeholder engagement influence performance of public-private partnership road infrastructure projects.

1.1 Statement of the Problem

In developing economies such as Kenya, where public funds are scarce, Public-Private Partnerships (PPPs) play a vital role in meeting infrastructure deficits. The results of PPP infrastructure projects, however, are often less than satisfactory due to monitoring and evaluation difficulties, as seen with the Nairobi Expressway, a flagship project completed in 2022. While the project has successfully halved the travel time between Mlolongo and Westlands (KIPPRA, 2023), it is beset by financial sustainability, stakeholder engagement, and environmental compliance concerns, and thus requires exploration of project monitoring and evaluation mechanisms to improve its performance.

Monitoring and evaluation performance challenges are evident in the Nairobi Expressway, a 27.1 km toll road built under a Build Operate Transfer (BOT) agreement. In terms of finances, the project incurred a loss of KES 1.2 billion in the financial year ending June 30, 2024, due to reduced traffic volumes, which affected revenue projections (The Star, 2024). Stakeholder engagement has been inadequate, with 30% of residents surveyed saying they were sufficiently consulted during planning, leading to discontent over toll fees and access equity (Transparency International Kenya, 2022). During the construction, 25% of the surrounding communities were impacted by noise and air pollution mitigation measures that were not met (NEMA, 2022). These problems have affected cost-effectiveness, infrastructure quality, and environmental sustainability, and highlight the need to explore monitoring and evaluation frameworks to enhance the outcomes of PPPs in Kenya.

Previous research on PPPs in Kenya has examined aspects of project performance, but this study will address some of the remaining gaps. Osei Kyei and Chan (2022) examined key success factors of PPPs in Kenya, focusing on project planning and regulatory aspects, and neglected the financial structure and risk-sharing mechanism. They revealed the need for regulatory support with no analysis of the effects that financial arrangements or risk allocation have on performance indicators, such as timeliness and cost efficiency. KIPPRA (2023) evaluated the economic value of the Nairobi Expressway based on the benefits of reduced travel time, excluding stakeholder consideration and environmental sustainability as performance measures. Although stakeholder views in global PPPs were examined in the study by Zhang *et al.* (2021), the study did not focus specifically on Kenya and the interaction between monitoring and evaluation mechanisms was not explored in relation to the Nairobi Expressway. The studies fail to provide an in-depth analysis of the impact of financial structure, risk-sharing mechanisms and stakeholder engagement on PPPs performance in the Kenyan infrastructure sector.

The importance of this problem is the implications for VISION 2030, Kenya's national vision which relies on PPPs to close an infrastructure funding gap of between \$2 billion and \$3 billion annually (World Bank, 2020). This study fills this gap in knowledge by focusing on the influence of stakeholder engagement on the performance of public-private partnership road infrastructure projects with particular reference to the Nairobi Expressway case.

1.2 Objectives of the Study

To assess the influence of stakeholder engagement on the performance of Public-Private Partnership Road infrastructure projects with particular reference to the Nairobi Expressway.

2.1 Theoretical Review

Freeman introduced Stakeholder Theory in 1984, arguing that organisations achieve long term success by addressing the interests of all stakeholders, not just shareholders. Stakeholders are individuals or groups that can influence or are affected by organisational objectives (Freeman et al., 2018). The theory is relevant to project monitoring and evaluation because PPP infrastructure projects involve multiple stakeholders whose participation influences project outcomes (Li et al., 2020).

To address these issues, Stakeholder Theory provides a framework for project monitoring and evaluation by emphasising participatory and transparent stakeholder involvement. It recognises that stakeholders help identifies the diverse interests and expectations of different groups (Macharia & Wanyoike, 2022). For the Nairobi Expressway, this includes government agencies, private investors, Nairobi residents, road users, and local businesses. Nzioki *et al.* (2020) state that proper stakeholder management is a key element in risk mitigation, conflict resolution, and the social license to operate in large-scale infrastructure projects.

Although Stakeholder Theory promotes inclusive decision making, it has been criticised for its vagueness and difficulty in balancing conflicting stakeholder interests, particularly in resource constrained developing countries (Miles, 2021). In PPP projects, the interests of local communities are often overlooked in favour of those of financiers and governments, creating a gap between the theory's ideals and the realities of power imbalances, institutional capture, and limited stakeholder engagement (Roehrich et al., 2020).

Furthermore, Stakeholder Theory assumes that stakeholder interests can be reconciled through dialogue and participation, which is not always achievable in major infrastructure projects (Alawneh & Al-Shboul, 2022). In PPPs such as the Nairobi Expressway, pressure to achieve development goals and investor returns may reduce stakeholder consultation to a superficial process. Weakly institutionalised engagement can result in dissatisfaction, protests, and litigation, while the theory gives limited attention to bureaucracy, elite interests, and low public awareness (Ndung'u & Njiru, 2023).

Stakeholder Theory is relevant to this study because it explains how stakeholder engagement influences the performance of PPP infrastructure projects such as the Nairobi Expressway. Monitoring and evaluation systems that lack meaningful stakeholder participation may result in resistance, low trust, and poor project outcomes (Wekesa & Wanyama, 2021). Concerns over tolling, traffic diversion, and urban displacement further demonstrate the need for inclusive monitoring and evaluation systems that promote collaboration rather than mere compliance (TI Kenya, 2022).

The Stakeholder Theory provides a solid theoretical basis for discussing monitoring and evaluation issues in PPP infrastructure projects. Stakeholder Theory reflects the growing emphasis on social sustainability by recognising that monitoring and evaluation should assess not only financial and operational outcomes but also inclusivity, dialogue, and shared value

(Roehrich et al., 2020). In Kenya, where infrastructure delivery is often affected by stakeholder grievances and monitoring gaps, the theory supports participatory approaches to improve project acceptance and performance (Nzioki et al., 2020). Its application is increasingly important as PPPs expand under Vision 2030 and national infrastructure plans.

For Stakeholder Theory to be effective in PPP monitoring and evaluation, it must recognise power dynamics, institutional capacity, and the political economy of infrastructure development. Beyond identifying stakeholders, effective engagement requires structured dialogue, empowerment, and accountability to ensure their views influence project decisions (Owuor & Kibua, 2021). The Nairobi Expressway illustrates both the strengths and challenges of stakeholder engagement in a rapidly evolving PPP environment. This study uses Stakeholder Theory to identify lessons that can be applied to improve future PPP monitoring, evaluation, and performance in Kenya and elsewhere.

2.2 Empirical Literature Review

Infrastructure projects are typically built using the Public-Private Partnership (PPP) of Public Providers, while a study by Mandiriza and Fourie (2023) examined the role of stakeholders in the adoption of such projects in South Africa, with particular focus on Pretoria. The study used a qualitative design and collected data through structured interviews with 20 purposively selected PPP stakeholders. Findings showed that stakeholder self-interests, including profit maximisation and bureaucratic control, hindered PPP adoption and performance. The study concluded that effective stakeholder management is essential for PPP success. However, its qualitative approach and limited scope did not assess quantitative performance measures. This study addresses the gap by using a correlational design to examine how stakeholder involvement and other monitoring and evaluation mechanisms influence Nairobi Expressway performance.

Ajibade, Dada and Adeyemo (2024) assessed stakeholder responsiveness in PPP projects in Lagos State, Nigeria, using a quantitative survey design involving 81 respondents from key stakeholder groups. The study found that government and concessionaires were more responsive than other stakeholders and concluded that stakeholder involvement is important for PPP performance. However, it focused only on responsiveness and did not examine other monitoring and evaluation mechanisms such as risk sharing and financial arrangements. This study addresses the gap by examining these mechanisms in the Nairobi Expressway using a correlational approach.

Kolman (2020) examined stakeholder engagement strategies for improving the completion of PPP water projects in the southwestern United States using Freeman's Stakeholder Theory. The study adopted a single case study design, collecting data through semi structured interviews with three project leaders and public documents. It focused on stakeholders involved in a specific water PPP project. Results emphasized the role of local stakeholders' knowledge, partnerships and effective communication in enhancing completion rates. Given that, the study concluded that proactive stakeholder engagement decreases project failures and suggested specific communication strategies. It was qualitative and a single-case study, which did not allow for generalizability or quantitative findings. The current study is proposed to overcome these limitations by focusing on the Nairobi Expressway in Kenya through a quantitative correlational study to assess the effect of stakeholder engagement and monitoring and evaluation mechanisms and performance.

Nagogo (2022) examined external stakeholder involvement in PPP urban infrastructure projects in Abuja, Nigeria, using an abductive mixed methods approach. Data were collected through surveys and interviews with 50 purposively selected government and private sector

staff. The study found that consultation, negotiation, partnerships, corruption control, and trust enhance PPP success. However, its focus on urban infrastructure and limited quantitative analysis constrained broader performance assessment. This study addresses the gap by examining stakeholder engagement in the Nairobi Expressway using a correlational design.

Mukakarisa and Njoroge (2024) assessed the effect of stakeholder involvement on construction project performance in Rwanda using descriptive and correlational designs. Data were collected from 125 respondents through questionnaires and analysed using SPSS and thematic analysis. The study found that stakeholder involvement in planning, implementation, and monitoring significantly improved project performance. However, its focus on private construction limited insights into PPP specific monitoring and evaluation mechanisms. The present research is an attempt to find the solution to this by looking at the Nairobi Expressway, by quantifying Stakeholder(s) engagement and PPP monitoring and evaluating mechanisms.

Tor, Gambo, and Ogedengbe (2025) examined stakeholder engagement strategies and construction project completion in North Central Nigeria through a qualitative conceptual review of secondary data. The study found that effective engagement reduces delays, improves collaboration, and enhances cost effectiveness, although bureaucratic challenges and weak frameworks hinder progress. However, its non-empirical approach limited practical application. This study addresses the gap by quantitatively examining stakeholder engagement and other monitoring and evaluation mechanisms in the Nairobi Expressway.

Toriola-Coker *et al.* (2020) studied the marginalisation of end-user stakeholders in Public-Private Partnership (PPP) Road Projects in Nigeria; an empirical study of Lekki/Epe Toll Road and Apakun Murtala Mohammed Toll Road. The study examined factors influencing end user participation in PPP road projects using a quantitative survey of 282 road users. Findings showed that limited end user involvement in decision making contributes to marginalisation and affects project acceptance. The study recommended greater user participation for PPP success. However, it focused mainly on end users and overlooked other monitoring and evaluation mechanisms such as financial systems. This study addresses the gap by examining multiple monitoring and evaluation factors in the Nairobi Expressway using a correlational design.

Ebekozien, Aigbavboa, and Ramotshela (2023) explored barriers to stakeholder engagement in South African construction projects using a phenomenological qualitative design. Data were collected from 15 construction experts and analysed thematically, revealing barriers such as lack of trust and weak policies. The study recommended addressing these barriers to improve project performance. However, its descriptive nature and lack of quantitative analysis limited wider applicability. This study addresses the gap by examining stakeholder engagement in the Nairobi Expressway using a quantitative correlational approach.

2.3 Conceptual Framework

The conceptual framework for this study, shown in Figure 1, provides a visual representation of how variables in this study are related, guiding in understanding possible cause and effect. The conceptual framework helps clarify the research process and how these elements interact to achieve the desired research goals (Saunders, Lewis, & Thornhill, 2021).

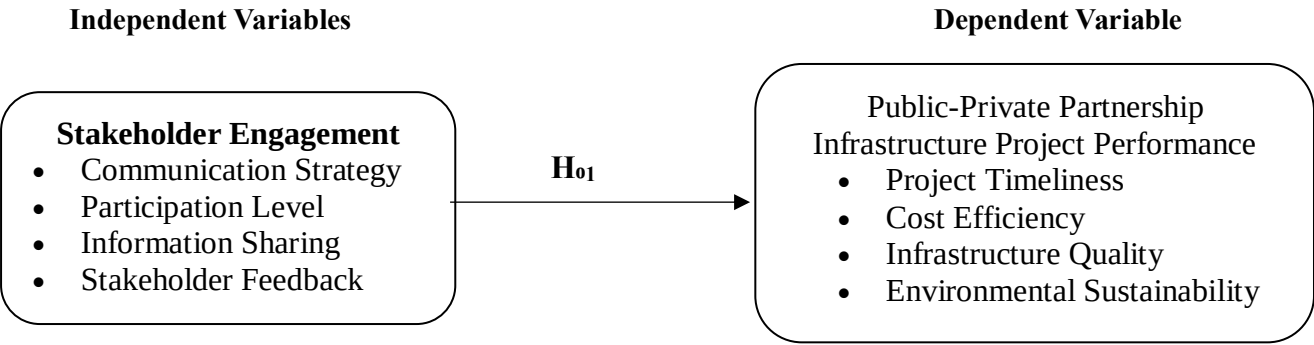


Figure 1: Conceptual Framework

A descriptive correlational study design was used to investigate the relationship between stakeholder engagement and the performance of public-private partnership infrastructure projects. The study was undertaken in Nairobi, Kenya, for the Nairobi Expressway, a key PPP infrastructure project that links Jomo Kenyatta International Airport to Westlands via a 27.1-kilometre toll road. The city of Nairobi, with its high traffic and rapid urbanisation, serves as an ideal location for the study of PPP monitoring and evaluation (World Bank, 2021), as it is Kenya's capital and has extensive economic and infrastructural development. The target population for this study was 50,050 persons. The figure of 50,050 was obtained by combining 50 institutional stakeholders identified from the organizations involved in the Nairobi Expressway PPP project with 50,000 road users, representing the estimated average daily traffic volume on the Nairobi Expressway reported by Moja Expressway (2024), giving a total target population of 50,050. These two groups constituted the total population of respondents (50,050) as summarized in Table 1.

Table 1: Target Population

Category	Institution/Role			Number of Respondents
Government Officials	Kenya National Highways Authority (KeNHA)	PPP Unit Director	Project Manager	1
				1
				3
				2
Private Representatives	Sector Moja Expressway Company	Management Team	Financial Analysts	3
				2
Project Consultants	SMEC International			3
Toll Operators	Nairobi Expressway Toll Stations			35
Road Users	Nairobi Expressway Users (Daily)			50,000
Total				50,050

Source: Moja Expressway Company (2026)

A stratified sampling design was used, using a combination of purposive and simple random sampling methods for both small and large sub-populations. The sample size of 150 was determined using the Taro Yamane (1967) formula for finite populations. Structured

questionnaires were used to collect quantitative data using a five-point Likert scale (1 = Strongly disagree to 5 = Strongly agree). Qualitative data was also gathered using an interview schedule, which was administered to selected Road Users. The pilot study was conducted among stakeholders involved in the Southern Bypass Road Project in Nairobi County. Quantitative data were analysed using SPSS version 27. Descriptive statistics, including means, percentages, and standard deviations, were used to summarize stakeholder participation and infrastructure performance. This study used both simple regression method which measured the strength and direction of relationships. The following specified models was used:

$$Y = \beta_0 + \beta_1X_1 + \varepsilon$$

Results were tabulated for clarity and easy interpretation.

4.0 Data Analysis, Presentation and Discussions

4.1 Response Rate

This section presents the response rate achieved during data collection. Table 5 shows the study's response rate, including the participation levels of institutional stakeholders and road users of the Nairobi Expressway.

Table 2: Response Rate

Category	Target Sample	Returned	Response Rate (%)
Institutional Stakeholders	50	46	92.0
Road Users	100	91	91.0
Total	150	137	91.3

As shown in Table 2, questionnaires were sent to 150 recipients, of whom 137 responded, yielding an overall response rate of 91.3%. The institutional stakeholders had a 92.0% response rate (46 out of 50), and road users had a 91.0% response rate (91 out of 100). This response rate is significantly higher than the 60-70% rate considered acceptable for good inferential power in survey-based research (Cook, Laha, & Wu, 2023). The high return rate indicates strong engagement among respondents and contributes to confidence in the representativeness and validity of the findings related to monitoring and evaluation practices on the Nairobi Expressway.

4.2 Role of Respondents in Relation to the Nairobi Expressway

Table 3 details the distribution of respondents by their role or category in relation to the Nairobi Expressway project.

Table 3: Role of Respondents

Response	Frequency	Percentage (%)
Government Official	7	5.1
Private Sector Representative	5	3.6
Project Consultant	3	2.2
Toll Operator	31	22.6
Road User	91	66.4
Total	137	100.0

Road users are the largest group (66.4%), followed by toll operators (22.6%), government officials (5.1%), the private sector (3.6%), and project consultants (2.2%). The distribution was based on the sampling design, which was done purposively with institutional stakeholders and a large random sample of road users to gain service delivery experiences from both implementing institutions and end-user beneficiaries. The study's ability to review monitoring and evaluation mechanisms from multiple perspectives throughout the PPP project life cycle is enhanced by the variety of roles held by respondents.

4.3 Descriptive Statistics

Descriptive results are provided for the main variables of interest. A structured questionnaire was used to gather respondents' perceptions on stakeholder engagement and project performance. These are represented in tables as frequency distributions, means and standard deviations. Key: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

4.3.1 Stakeholder Engagement

This section evaluates perceptions of stakeholder engagement practices and their influence on the performance of the Nairobi Expressway. Meaningful stakeholder participation is critical for project legitimacy and user satisfaction, yet the expressway has been noted for limited public consultation. The findings are in Table 4.

Table 1: Stakeholder Engagement

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Deviation
The project has a structured communication framework.	21 (15.3)	30 (21.9)	19 (13.9)	43 (31.4)	24 (17.5)	2.74	1.351
The communication framework effectively facilitates stakeholder coordination.	24 (17.5)	32 (23.4)	18 (13.1)	40 (29.2)	23 (16.8)	2.65	1.357
Stakeholder involvement mechanisms are established in the project.	29 (21.2)	37 (27.0)	17 (12.4)	33 (24.1)	21 (15.3)	2.46	1.362
Active stakeholder participation effectively drives project success.	10 (7.3)	16 (11.7)	20 (14.6)	65 (47.4)	26 (19.0)	3.59	1.201
Open information exchange practices are implemented in the project.	27 (19.7)	35 (25.5)	18 (13.1)	37 (27.0)	20 (14.6)	2.52	1.358
Information sharing effectively strengthens stakeholder trust.	25 (18.2)	34 (24.8)	19 (13.9)	38 (27.7)	21 (15.3)	2.57	1.355
Feedback collection systems are in place in the project.	28 (20.4)	36 (26.3)	18 (13.1)	35 (25.5)	20 (14.6)	2.49	1.361
Stakeholder feedback is effectively utilized to refine project processes.	11 (8.0)	17 (12.4)	20 (14.6)	63 (46.0)	26 (19.0)	3.56	1.208
Average						2.82	1.319

Key: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Active stakeholder participation to achieve project success had the highest level of agreement (Mean = 3.59, Std. 1.201). The instrumental value of participation in achieving the project's outcomes was widely acknowledged by respondents, with 47.4% agreeing and 19.0% strongly agreeing. The same was true of the utilisation of stakeholder feedback, which had a relatively

high mean (3.56, Std. 1.208) and an agreement rate of 65.0%, indicating that stakeholders felt there was some level of responsiveness to their feedback at the operational level. The findings are supported by Mukakarisa and Njoroge (2024), who found a significant positive correlation between participation of stakeholders in the monitoring process and participation in the planning process and project performance.

But the structural mechanisms for meaningful participation were given much less favourable ratings. Stakeholder involvement mechanisms had the lowest mean score of 2.46 (Std. Dev. = 1.362). Only 39.1% agreed that formal participation structures were in place, while 48.2% disagreed, mirroring Transparency International Kenya's (2022) assessment that 30% of the respondents indicated they were sufficiently informed or consulted on impacts to the expressway. Open information exchange practices received only 41.6% agreement, 45.2% disagreeing and showed that systematic dissemination of project information to stakeholders was critically underdeveloped, with a mean score of (Mean = 2.52, Std. Dev. = 1.358). Feedback collection systems were rated in a similar way with 40.1% agreement (Mean = 2.49, Std. Dev. = 1.361) and 46.7% disagreement whereas the structured communication framework showed 48.9% agreement (Mean = 2.74, Std. Dev. = 1.351), which was below the neutral threshold, and 46.7% disagreement.

The average mean of 2.82 (Std. Dev. = 1.319) reveals a generally negative perception of stakeholder engagement in the Nairobi Expressway project, the result of which was a lack of agreement for the extent to which participatory monitoring and evaluation mechanisms were in place and utilized. This finding corroborates the findings of Toriola-Coker *et al.* (2020) that exclusion of end-user stakeholders directly affected the acceptance of projects and users' satisfaction, and the findings of Nagogo (2022) that clear consultation, negotiation and feedback processes are fundamental to the success of PPP. The overall trend in all indicators indicates that, although respondents recognized the importance of engagement in principle, the monitoring and evaluation framework for the Nairobi Expressway was not able to embed the structural spaces and processes for inclusive and substantive stakeholder participation across the project lifecycle.

This study explored how road users felt they were consulted, how they had access to information and how they participated in the planning and implementation of the Nairobi Expressway. The majority of road users said they were not informed or consulted during the project's planning and implementation, and some even voiced frustration at the lack of information they received about tolls, project news, and operational decisions.

4.3.2 PPP Infrastructure Project Performance

This section evaluates perceptions of the Nairobi Expressway's performance as measured through project timeliness, cost efficiency, infrastructure quality, and environmental sustainability. The findings are in Table 5.

Table 5: PPP Infrastructure Project Performance

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Deviation
The Nairobi Expressway adheres to its scheduled maintenance timeline.	15 (10.9)	22 (16.1)	19 (13.9)	55 (40.1)	26 (19.0)	3.40	1.231
Timely delivery is achieved as a critical measure of project performance.	19 (7.3)	17 (11.7)	19 (13.9)	64 (47.4)	26 (19.7)	3.61	1.197
The Nairobi Expressway operates within its designated budget.	22 (16.1)	31 (22.6)	19 (13.9)	42 (30.7)	23 (16.8)	2.69	1.358
Cost efficiency is achieved to maximize project value.	20 (14.6)	29 (21.2)	19 (13.9)	44 (32.1)	25 (18.2)	2.78	1.349
The Nairobi Expressway delivers durable, high-quality infrastructure.	10 (7.3)	16 (11.7)	19 (13.9)	65 (47.4)	27 (19.7)	3.61	1.197
Infrastructure quality meets or exceeds industry standards.	12 (8.8)	18 (13.1)	19 (13.9)	61 (44.5)	27 (19.7)	3.53	1.212
Sustainable environmental practices are integrated into the project.	19 (13.9)	27 (19.7)	20 (14.6)	46 (33.6)	25 (18.2)	2.83	1.345
Environmental sustainability is achieved as a key project outcome.	17 (12.4)	25 (18.2)	20 (14.6)	48 (35.0)	27 (19.7)	2.91	1.337
Average						3.17	1.278

Key: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Support for the expressway was highest regarding infrastructure quality, with 67.1% agreeing that the expressway provides durable infrastructure in good condition (Mean = 3.61, Std. Dev. = 1.197) and 64.2% agreeing that quality is at or above industry standards. The findings of this study are in line with Odhiambo (2023) and Kirima, Minja and Muthinja (2024), who reported that the BOT financing models in Kenya were positively linked to technical performance outcomes and that well-structured project financing positively influenced the quality of infrastructure delivery by making adequate resources available during the construction period, respectively.

Project timeliness also had high positive perceptions: 67.1% agreed that the project delivered on time (Mean = 3.61, Std. Dev. = 1.197), and 59.1% agreed that the maintenance plans were followed up as scheduled. This is in line with the findings by KIPPRA (2023) that the Nairobi Expressway had been operationalised within the expected time frame and with the work of Barasa, Minja, and Muthinja (2024), who concluded that the participation of the private sector contributes to the speed of project implementation. But the lower maintenance timeline score relative to the initial delivery score indicates that achieving high operational performance is more challenging than maintaining the initial completion, which has been pointed out by Jiang, Yang, Jiang, Martek and Gao (2022), who noted that the management of operational phase risks in PPP projects is still underdeveloped.

Cost efficiency was rated much less positively, with only 47.5% agreeing that the expressway works within its budget (Mean = 2.69, Std. Dev. = 1.358). The percentages of developers disagreeing with the statements were 38.7% and 35.8%. The perceptions align with the loss of KES 1.2 billion reported by the project during operations in 2024 (The Star, 2024). This is in line with the findings of Matsumoto *et al.* (2021), which stated that poorly designed revenue

contracts are among the risk factors that negatively affect the cost efficiency of PPP projects and Akomea-Frimpong *et al.* (2024), who indicated that poor financial risk management directly influences the sustainability and cost performance of PPP projects in developing economies. Environmental sustainability was given the lowest ratings, with only 51.8% agreeing that sustainable environmental practices are incorporated into the project (Mean = 2.83) and 54.7% agreeing that environmental sustainability is achieved as a key outcome (Mean = 2.91).

The average mean of 3.17 (Std. Dev. = 1.278), the overall perception of the performance of the Nairobi Expressway is moderately positive, and the technical and timeliness dimensions perform better than the financial and environmental dimensions. These findings corroborate the findings of NEMA (2022), which reported that 25% of the communities in the immediate environment of the project were affected by non-compliance with noise and air pollution, and the findings of Babatunde, Ekundayo, Udejaja and Abubakar (2020), which revealed weak sustainability guidelines as major barriers to PPP performance. Das *et al.* (2025) also reported that the environmental gap is present across the developing economies, as the implementation of environmental standards is weak in the monitoring and evaluation frameworks of PPPs. The skewness of the performance profile of the Nairobi Expressway, compared with Osei-Kyei and Chan (2022), who outlined cost efficiency and environmental sustainability as equally important PPP performance dimensions alongside technical quality, suggests a need for holistic monitoring and evaluation mechanisms that consider all performance dimensions.

The study also included an exploration of the overall performance of the Nairobi Expressway, as assessed by road users, in terms of timeliness, infrastructure, cost efficiency, and environmental sustainability. The majority of road users recognised both the engineering quality and time savings of the expressway, but identified serious concerns about costs, access equity, and impacts to neighbouring communities. Respondent RU006 noted that:

Qualitative findings confirm the study's main argument that PPP infrastructure project performance is a multi-dimensional phenomenon that requires integrated monitoring and evaluation mechanisms to be assessed. Project success is not achieved solely through physical quality; the dimensions of cost efficiency, equitable access, and environmental sustainability are also insufficiently addressed. These findings are consistent with Osei-Kyei and Chan (2022), who defined PPP performance to include efficiency, effectiveness and sustainability in infrastructure delivery, and with the World Bank's (2020) PPP performance guidelines, which called for value-for-money assessments to be based on social and environmental outcomes as well as technical delivery.

4.4 Correlation Analysis

The Pearson's correlation coefficient (r) was used at the 0.01 level (2-tailed) to determine the strength and direction of the relationship between the independent variables (stakeholder engagement) and the dependent variable (PPP infrastructure project performance).

Table 2: Correlation Analysis

	Stakeholder Engagement
PPP Project Performance	.718
Sig. (2-tailed)	.000
N	137

. Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlation coefficient results show a strong positive correlation between stakeholder engagement and PPP project performance (r = 0.718, p = 0.000). This is in line

with the findings of Mukakarisa and Njoroge (2024), who found a high positive correlation between stakeholder engagement during planning, implementation and monitoring and project performance, and Mandiriza and Fourie (2023), who noted the importance of effective stakeholder management in the success of PPPs.

4.5 Regression Analysis

Regression analysis was conducted to determine the effect of stakeholder engagement on the performance of PPP infrastructure projects

Table 7: Model Summary

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
(Stakeholder Engagement)	0.718	0.516	0.512	0.41893

a. Dependent Variable: PPP Infrastructure Project Performance

Stakeholder engagement explain 51.6% (R^2 0.516) of the variance in the performance of PPP projects, and the Adjusted R^2 is 0.512 of the variances in the performance of PPP projects.

Table 8: ANOVA Results for the Regression Models

Model	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Stakeholder Engagement	Regression	24.937	1	24.937	141.982	.000
	Residual	23.391	135	0.173		
	Total	48.328	136			

a. Dependent Variable: PPPs Infrastructure Project Performance

The F-statistics was statistically significant ($p = 0.000$), indicating that stakeholder engagement, significantly predicts performance of PPP projects. The regression coefficients for the Models (1-4) provided in this subsection include unstandardized beta, standardized beta, t values, and significance levels. Results are summarized in Table.

Table 9: Regression Coefficients

Model	Variable	Unstandardized β	Std. Error	Standardized Beta	t	Sig.
	(Constant)	0.824	0.199	—	4.141	.000
	Stakeholder Engagement	0.487	0.077	0.487	6.324	.000

a. Dependent Variable: PPPs Infrastructure Project Performance

Stakeholder engagement had a statistically significant positive effect on PPP infrastructure project performance ($\beta = 0.487$, $t = 6.324$, $p < 0.001$). This indicates that a one unit improvement in stakeholder engagement was associated with a 0.487 unit increase in project performance. The finding is consistent with Mukakarisa and Njoroge (2024), who found that stakeholder involvement in planning, implementation, and monitoring improves project performance.

5.0 Conclusion

The study concludes that stakeholder engagement has a strong, positive influence on PPP infrastructure project performance and is one of the most critical factors. The findings show that stakeholder participation in planning, decision-making, and implementation processes is limited. Communication mechanisms and feedback systems are also weak, leading to low levels of public involvement in key project decisions, such as toll pricing and service delivery. This conclusion is explained by Stakeholder Theory, which emphasises that project success depends on the inclusion and consideration of all affected parties. The findings show that exclusion of stakeholders reduces acceptance, satisfaction and perceived fairness of the project. The results are consistent with studies such as Transparency International Kenya (2022) and Nagogo (2022), which highlight that weak stakeholder engagement reduces trust and undermines the effectiveness of PPP projects.

6.0 Policy Recommendations

The study revealed that stakeholder interaction is the primary determinant of PPP project success; it is recommended that Kenya's PPP legislation be amended to include meaningful stakeholder consultation as an enforceable requirement throughout the entire lifecycle of PPP projects. The management of the Nairobi Expressway should create a permanent forum for road users to consult, a publicly available project information portal, and a proper mechanism for community input. Road user representatives and the affected communities should be actively involved in toll pricing reviews to ensure pricing decisions are based on both financial sustainability and public affordability.

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