
Enhancing Performance of Public-Private Partnership Projects: Data Management and Capacity Building of Standard Gauge Railway

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Abstract

This study assessed the impact of data management and capacity building on the performance of the Standard Gauge Railway (SGR) project in Kenya, specifically within the context of monitoring and evaluation (M&E) practices in public-private partnership (PPP) frameworks. Anchored in the tenets of the Principal-Agent Theory, Institutional Theory, and Transaction Cost Economics Theory, this research employs a survey-based approach, drawing insights from 55 SGR project employees. In exploring the influence of data management, the findings illuminate its significant correlation with the orchestration and advancement of the SGR project. Additionally, the study underscores the positive repercussions of capacity-building initiatives on enhancing the project's performance metrics. Notably, participants exhibited a consensus regarding the efficacy of these programs in augmenting the skills and knowledge base of the project team and stakeholders. The study accentuates the imperative for a comprehensive review aimed at fortifying the accuracy and security of project data. It recommends a strategic emphasis on initiatives enhancing data reliability and security within the SGR project's framework. These insights contribute crucial perspectives on the pivotal roles of data management and capacity building, specifically underscoring their influence on the SGR project in Kenya.

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1. Introduction

The efficacy of Monitoring and Evaluation (M&E) practices in large-scale projects, particularly in the domain of public-private partnerships (PPPs), holds paramount importance. Among these endeavors, the Standard Gauge Railway project in Kenya stands as an exemplar, characterized by its magnitude and intricate operational intricacies. This article critically delves into the pivotal roles played by two essential components—data management and capacity building—in shaping the performance outcomes of the Standard Gauge Railway.

Within the dynamic landscape of project management, the significance of coherent data management strategies and the nurturing of organizational capabilities through targeted training programs cannot be overstressed. These elements serve as fundamental pillars that ensure the precision, efficiency, and ultimate success of Monitoring and Evaluation practices within complex projects such as the Standard Gauge Railway.

This study contributes to the ongoing discourse in a dual manner: firstly, by scrutinizing the influence of data management strategies on the M&E process and subsequent project performance; secondly, by evaluating the impact of capacity-building initiatives in enhancing M&E efficacy and, consequentially, the overall success of the project. By dissecting these facets within the contextual framework of the Standard Gauge Railway, this research aims to significantly enrich the existing debate surrounding the optimization of M&E practices within expansive infrastructure projects.

The core purpose of this research lies in transcending the prevailing discourse, striving to unravel how meticulous data management practices directly correspond to project performance. Simultaneously, it seeks to elucidate the potency of capacity-building endeavors in fortifying the skills and knowledge base of project stakeholders, thereby influencing the trajectory of the project.

The anticipated outcomes of this research endeavor aim to shed light on the extent to which refined data management processes and comprehensive capacity-building initiatives influence the efficacy of Monitoring and Evaluation practices within the Standard Gauge Railway project. This article aims to delineate how the optimization of these factors may potentially pave the way for improved project performance metrics, ultimately contributing to a deeper understanding of the intricate dynamics within PPP projects.

Subsequently, this article will encapsulate an exploration of two pivotal facets—data management for M&E and capacity-building initiatives—within the context of the Standard Gauge Railway. The findings presented aim to elucidate the interconnections between these factors and M&E practices, highlighting their potential to drive enhanced project performance.

2. Literature Review

The literature review offers a comprehensive analysis of empirical studies exploring the intricate dynamics of data management and capacity building within Public-Private Partnership (PPP) projects. These studies provide nuanced insights into the multifaceted aspects of Monitoring and Evaluation (M&E) practices and underscore their critical role in fostering successful PPP implementations.

2.1 Monitoring and Evaluation Historical Background

The historical landscape of Monitoring and Evaluation (M&E) within the context of Public-Private Partnerships (PPPs) underscores a significant evolution characterized by the need for effective oversight, transparency, and performance measurement in collaborative projects

between the public and private sectors. The inception of PPPs emerged in the late 20th century, propelled by the quest for innovative models to address growing infrastructure demands while optimizing resources. Early discussions in academia and policy circles centered around the potential benefits of PPPs, emphasizing enhanced efficiency, risk sharing, and cost savings in delivering public services and infrastructure. However, these discussions lacked an in-depth exploration of robust mechanisms for evaluating PPP project performances. The advent of M&E practices within PPPs began gaining traction in the early 21st century, marking a crucial shift in acknowledging the necessity for systematic evaluation frameworks. Initial scholarly works focused on outlining the fundamental principles and key elements required for effective M&E strategies within PPP frameworks. These pioneering efforts sought to establish benchmarks, metrics, and indicators for gauging the success and impact of PPP projects, primarily concentrating on financial performance and project delivery. As the field matured, research expanded to evaluate the performance determinants of PPPs across various global contexts. Studies like Briano and Leone (2020) and Jose and Have (2019) scrutinized the performance aspects of PPPs in the European Union and Latin America, respectively. These investigations highlighted contextual variations in evaluation frameworks, regulatory environments, and government commitments, thereby exposing the need for adaptable M&E strategies tailored to specific regional dynamics. The literature also uncovered nuanced challenges and opportunities. Espasa and Pastor (2019) emphasized the need for improved risk-sharing mechanisms and robust M&E practices in Spain's PPPs, while Donahue and Richard (2018) focused on data management within PPPs in the U.S., elucidating the significance of transparent contractual arrangements and flexible adaptation strategies.

Recent developments in PPP research have witnessed an increased emphasis on capacity building and data management as integral components of effective M&E practices. Researchers, like Mokuia and Kimutai (2019), Otieno and Otieno (2019), and Emily Johnson and Michael Brown (2020), investigated the influence of M&E systems, capacity building initiatives, and budget allocations on PPP project performance in various regions, highlighting their significance in bolstering project success, improving stakeholder satisfaction, and reducing cost overruns. Contemporary scholarly discourse continues to delve deeper into understanding the intricate dynamics between data management, capacity building, and project performance within PPP frameworks. The evolving landscape of research underscores a growing recognition of the interplay between meticulous data governance, comprehensive capacity development, and improved project outcomes. Yet, despite this progress, existing literature still harbors gaps that warrant further exploration.

These historical developments and ongoing research demonstrate a notable shift from mere conceptualizations of PPPs towards a more focused inquiry into the practical mechanisms required for robust M&E systems, highlighting the importance of contextualized strategies, adaptive frameworks, and comprehensive evaluations to enhance the performance of PPP projects. This evolving landscape sets the stage for the present study, seeking to delve deeper into the roles of data management and capacity building within M&E practices and their influence on the performance of the Standard Gauge Railway (SGR) project in Kenya.

2.2 Monitoring and Evaluation in the Current Context

The current landscape of research surrounding Monitoring and Evaluation (M&E) practices within Public-Private Partnership (PPP) projects, especially in the context of data management and capacity building, represents an amalgamation of evolving trends, persistent challenges, and emerging debates. One central debate revolves around the effectiveness of M&E frameworks in ensuring the success and sustainability of PPP initiatives. Scholars and practitioners have continuously deliberated on the extent to which structured M&E systems

contribute to project success, addressing concerns related to project oversight, risk management, and stakeholder engagement. This debate often pivots on the significance of comprehensive data management strategies and their role in optimizing project performance.

Another pivotal issue in contemporary literature pertains to the role of capacity building programs within M&E frameworks of PPPs. There exists a growing acknowledgment of the importance of enhancing skills, knowledge, and capabilities among project teams and stakeholders to navigate complex PPP environments effectively. Debates often focus on the design, implementation, and impact of these programs on project outcomes, highlighting their role in mitigating risks, ensuring adherence to quality standards, and fostering innovation.

Emerging trends suggest a paradigm shift towards a more holistic approach in evaluating the impact of M&E practices in PPPs. Researchers are increasingly exploring multifaceted indicators beyond traditional financial metrics, delving into qualitative aspects such as social impact, sustainability, and environmental considerations. Moreover, there is a rising emphasis on leveraging technological advancements to streamline data collection, analysis, and reporting, fostering a more data-driven approach to M&E in PPP projects. Despite the strides made in understanding the intricacies of M&E within PPPs, several persistent issues and debates persist. These include the need for standardized evaluation frameworks across diverse geographical contexts, the challenge of balancing flexibility and rigidity in M&E systems, and the effective integration of stakeholder perspectives into evaluation processes. In this dynamic field, the present study aims to contribute by elucidating the specific influence of data management strategies and capacity building programs on the performance of the Standard Gauge Railway (SGR) project in Kenya. By contextualizing the study within ongoing debates and emerging trends, this research endeavors to provide empirical insights that enrich the discourse on M&E practices in PPPs, offering practical implications for project managers, policymakers, and stakeholders involved in similar infrastructural initiatives.

2.3 Monitoring and Evaluation Theories

In the exploration of Monitoring and Evaluation (M&E) practices within the realm of Public-Private Partnership (PPP) projects, several theories and concepts serve as the underpinning framework, offering insights into understanding the dynamics of these collaborations, particularly in the context of data management and capacity building.

Principal-Agent Theory stands as a foundational concept in analyzing PPPs, focusing on the relationship between principals (usually the government or public sector) and agents (private entities) engaged in contractual agreements. This theory underscores the inherent challenges arising from asymmetry in information, divergent objectives, and moral hazards. In the context of M&E, this theory elucidates how data management systems act as mechanisms to align the interests of principals and agents, ensuring transparency, accountability, and effective performance measurement. Transaction Cost Economics Theory further contributes to the understanding of PPPs by emphasizing the cost considerations and transactional aspects involved in partnerships. Within the domain of M&E, this theory helps delineate the costs incurred in establishing and maintaining data management systems. It explicates the trade-offs between developing in-house systems versus outsourcing, shedding light on optimal arrangements for efficient data handling. Institutional Theory provides insights into the organizational and environmental factors shaping the behavior of entities involved in PPP projects. Within M&E frameworks, this theory explicates how institutions, norms, and regulatory environments influence data management practices and capacity building efforts. It highlights the significance of institutional alignment in ensuring the effectiveness of M&E systems and programs within PPPs. Furthermore, the concept of Adaptive Management offers

a dynamic approach to M&E in PPPs. This approach emphasizes flexibility and learning as essential components in managing complexities and uncertainties within projects. It underscores the iterative nature of M&E, wherein data management systems must adapt to changing project needs, and capacity building programs evolve to address emerging challenges and opportunities. The Resource-Based View (RBV) theory also offers valuable insights by focusing on leveraging organizational resources and capabilities for competitive advantage. In the context of capacity building within M&E frameworks, RBV emphasizes the significance of investing in human capital, knowledge, and organizational learning. It underlines how building internal capacities contributes to sustained performance and resilience in PPP projects. By anchoring the study within these theories and concepts, this research endeavors to elucidate the intricate relationship between data management strategies, capacity building initiatives, and project performance within the context of the Standard Gauge Railway project in Kenya. This theoretical foundation provides a lens through which to analyze and interpret empirical findings, offering a comprehensive understanding of the underlying mechanisms and dynamics shaping M&E practices in PPPs.

2.4 Summary of Literature and Research Gaps

In exploring the domain of Monitoring and Evaluation (M&E) practices within Public-Private Partnership (PPP) projects, several studies have contributed valuable insights into the significance of data management and capacity building in enhancing project performance. These studies underscore both the successes and limitations within the realm of M&E frameworks in PPPs. Briano and Leone (2020) conducted a comparative analysis of frameworks within the European Union context to evaluate the performance of PPPs, emphasizing budget allocation and financial aspects in M&E. Their findings highlighted the lack of consistency and standardization among EU evaluation frameworks for PPPs, pinpointing a need for more streamlined and coherent practices in managing project data and resources. This research identified a contextual gap in performance evaluations that aligns with our study's focus on the influence of data management and capacity building on PPP performance within Kenya's Standard Gauge Railway project. In a study by Donahue and Richard (2018) focusing primarily on data management for M&E, the importance of clearly defined objectives and transparent contractual arrangements emerged as pivotal factors in the success of PPPs in the U.S. context. However, the study primarily concentrated on data management, differing from our study's broader scope of investigating the collective impact of data management and capacity building on project performance within the Kenyan PPP framework. This study highlighted a conceptual gap that our research aims to address by integrating both data management and capacity building aspects. Additionally, Mbeki and Mboweni (2018) examined the impact of M&E on PPP performance in South Africa, emphasizing the alignment of project objectives with strategic goals as a crucial factor. Their findings regarding the importance of clear objectives align with our study's focus, yet the contextual differences between South Africa's PPP projects and Kenya's Standard Gauge Railway introduce a contextual gap. Our research seeks to fill this gap by delving into the specific nuances and influences of data management and capacity building on the Kenyan PPP project. Furthermore, Otieno and Otieno (2019) investigated the relationship between monitoring practices and the performance of PPP transport and infrastructure projects in Kenya. While their focus on monitoring practices aligns with our research, their study had a broader geographical scope, encompassing all of Kenya's PPPs. Our study specifically targets the Standard Gauge Railway project, allowing for a more detailed and tailored examination of the influence of data management and capacity building within this specific PPP.

Drawing from these studies, this research aims to explore the relationship between data management strategies and capacity building initiatives and their collective impact on the performance of the Standard Gauge Railway project. By delving deeper into these aspects within the Kenyan PPP context, our study aims to bridge the identified gaps and provide comprehensive insights into enhancing PPP performance through effective M&E practices.

3. Methodology

The research methodology adopted for this study aimed to comprehensively explore the influence of data management and capacity building on the performance of the Standard Gauge Railway (SGR) project in Kenya within the context of monitoring and evaluation (M&E) practices in public-private partnership (PPP) frameworks.

This study primarily employed an empirical and analytical approach, focusing on the investigation of the relationship between data management, capacity building, and the performance of the SGR project. Rooted in a quantitative paradigm, the research design centered on the collection and analysis of primary data through a structured questionnaire. The conceptual framework guiding this investigation integrated insights from the Principal-Agent Theory, Institutional Theory, and Transaction Cost Economics Theory.

Primary data collection was conducted through the dissemination of structured questionnaires among 55 employees actively engaged in the SGR project in Kenya. The questionnaire consisted of two main sections: one dedicated to gathering information about the organization's context and characteristics, while the other specifically assessed perceptions regarding the impact of data management and capacity building practices on project performance. This survey-based methodology facilitated the acquisition of quantitative data, allowing for measurable insights into participants' opinions and perceptions.

The collected primary data underwent analysis using a quantitative approach, utilizing the Statistical Package for the Social Sciences (SPSS) software. Descriptive statistical methods were applied to examine measures of central tendency and dispersion within the data. The Likert scale responses in the questionnaire (ranging from 1 to 5) were particularly utilized to gauge the degree of agreement or disagreement concerning the influence of data management and capacity building practices on the project's performance. Additionally, Spearman's correlation coefficient was calculated to determine the strength and direction of the relationship between variables related to data management, capacity building, and the performance of the SGR project. The Likert scale responses in the questionnaire (ranging from 1 to 5) were particularly utilized to gauge the degree of agreement or disagreement concerning the influence of data management and capacity building practices on the project's performance.

The focal point of this study is the Standard Gauge Railway (SGR) project in Kenya, a significant infrastructure initiative serving as the context for examining the impact of data management and capacity building practices within the PPP framework's M&E sphere.

To execute the data collection process, authorization was obtained from the University of Nairobi to ensure the research's credibility. The primary tool for data collection was a structured questionnaire distributed to all relevant employees within the SGR project. This questionnaire aimed to gather information about the organization's characteristics and assess perceptions regarding data management and capacity building practices, intending to provide insights into their impact on the project's performance.

The research methodology employed in this study entailed a systematic and quantitative investigation into the relationship between data management, capacity building, and the performance of the SGR project within Kenya's PPP framework. The structured approach to data collection and analysis aimed to yield comprehensive insights into the factors influencing project performance.

4 Results

4.1 Distribution of Respondents by Gender

This study sought to determine the gender of the respondents. Table 1 presents the findings on the distribution of respondents.

Table 1 : Distribution of Respondents by Gender

	Frequency	Percentage
Male	31	58.8
Female	21	41.8
Total	52	100

As indicated in Table 1, 31 (58.8%) of the respondents were male and 21 (41.8%) were female. The findings reveal Standard Gauge Railway has more male employees compared to female employees. This gender imbalance may have various implications for the company, including potential issues related to diversity, gender equality, and the need to promote more inclusive hiring and employment practices to address this imbalance and create a more balanced and equitable workforce.

4.2 Distribution of Respondents by Age

The study sought to determine the age of the respondents. Table 2 presents the analysis.”

Table 2 : Distribution of Respondents by Age

	Frequency	Percent
Below 25 years	11	21
25-34 years	24	46
35-44 years	16	32.4
Above 45 years	1	0.6
Total	52	100

The result of Table 2 shows that the majority of the respondents 24 (46%) working at standard gauge railway are aged between 25 to 34 years. The second age group of respondents 16 (32.4%) at Standard gauge railway is between 35 to 44 years old. Respondents below 25 years were 11 and represented 21% of the total respondents. Only one respondent aged above 45 years old filled the questionnaire. The predominance of younger workers aged 25 to 34 at the Standard Gauge Railway (SGR) in Kenya suggests a workforce that is energetic and likely to bring innovative perspectives to the organization. This demographic advantage positions the

SGR well for embracing technological advancements and fostering a positive work environment. However, to ensure long-term success, strategic management should address knowledge transfer and collaboration between the younger workforce and more experienced employees, fostering a well-rounded and high-performing team.

4.3 Descriptive Statistics for the Responses On Data Management for M&E

a. Descriptive Statistics for Data management for M&E

Table 3 shows the descriptive statistics for the responses on data management for M&E. The statements were rated on a scale of 1-5: (1=strongly disagree, 2= disagree, 3= neutral, 4 agree and 5 strongly agree).

	Statements	1	2	3	4	5	mean	SD
1	Data management system for M&E in the Standard Gauge Railway project effectively capture and store relevant project data	-	19.4%	35.5%	32.3%	12.9%	3.77	.68
2	Data management system support data analysis and reporting in a timely manner, facilitating informed decision-making for the Standard Gauge Railway project	-	9.7%	6.5%	71.0%	12.9%	4.37	.56
3	Data management system ensure data accuracy, security, and accessibility for project stakeholders involved in M&E activities for the Standard Gauge Railway project	-	6.5%	9.7%	74.2%	9.7%	3.07	.69

Table 3 shows the descriptive statistics for the responses on data management for M&E. The study examined whether data management system for M&E in the Standard Gauge Railway project effectively capture and store relevant project data. Analysis indicate that 12.9% of the respondents strongly agreed, 32.9% agreed while 35.5% were undecided. On the other hand, 19.4% of the respondents disagreed whereas none strongly disagreed. The mean score was 3.77 with a standard deviation of 0.68. Results indicate that generally, data management system for M&E in the Standard Gauge Railway project effectively capture and store relevant project data.

With regard to whether data management system support data analysis and reporting in a timely manner, facilitating informed decision-making for the Standard Gauge Railway project, analysis show that 12.9% of the respondents strongly agreed, 71% agreed while 6.5% were undecided. Conversely, 9.7% of the respondents disagreed whereas none strongly disagreed. The mean score was 4.37 with a standard deviation of 0.56. From this result, it can be inferred that Data management system support data analysis and reporting in a timely manner, facilitating informed decision-making for the Standard Gauge Railway project.

Another issue explored was whether data management system ensure data accuracy, security, and accessibility for project stakeholders involved in M&E activities for the Standard Gauge Railway project. Analysis of responses on this indicate that, 9.7% of the respondents strongly agreed, 74.2% agreed while 9.7% were undecided. On the other hand, 6.5% of the respondents disagreed whereas none strongly disagreed. The mean score was 3.07 with a standard deviation of 0.69. This suggests that generally, data management system ensures data accuracy, security, and accessibility for project stakeholders involved in M&E activities for the Standard Gauge Railway project.

On whether data management system for M&E in the Standard Gauge Railway project effectively capture and store relevant project data, exhibited a moderate level of agreement with a mean score of 3.77. The relatively high standard deviation of 0.68 implies some variation in the extent to data is captured and stored. The statement on data management system support data analysis and reporting in a timely manner, facilitating informed decision-making for the Standard Gauge Railway project had a mean score of 4.37. This indicates a high level of agreement, suggesting that this practice is widely adopted within the industry. The relatively low standard deviation of 0.56 highlights a consistent approach among the respondents. The study indicates that, on average, data management system ensures data accuracy, security, and accessibility for project stakeholders involved in M&E activities for the Standard Gauge Railway project to a moderate extent, as reflected by the mean score of 3.07. The relatively high standard deviation of 0.69 implies a wide range of responses. The findings are in line a study by Caffrey and Munro (2021), which found that data analysis and reporting is a key function of effective monitoring and evaluation systems in humanitarian projects.

b. Descriptive Statistics on Performance of Public Private Projects

The statements were rated on a scale of 1-5: (1=strongly disagree, 2= disagree, 3= neutral, 4 agree and 5 strongly agree).

Table 4 : Descriptive Statistics on Performance of Public Private Projects

Statements	1	2	3	4	5	Mean	SD
1 The Standard Gauge Railway project delivered on its return on equity, considering the financial performance and the expectations of equity investors	-	6.7%	26.7%	46.7%	20%	3.50	.51
2 ROE performance influenced investor confidence and the ability to attract further equity investment for the project's expansion or future rail-related ventures	13.3%	20%	20%	26.7%	20%	3.50	.51
3 the Standard Gauge Railway project achieve its projected payback period, and if not, how far off is it from the initial estimate	-	6.7%	26.7%	20%	46.7%	3.77	.73
4 the actual payback period influenced decision-making for the project stakeholders, and what adjustments have been made in response	20%	6.7%	26.7%	33.3%	13.3%	4.40	.498
5 has the ROI performance of the Standard Gauge Railway project had on attracting further investment or financial support for future rail-related initiatives	20%	13.3%	26.7%	13.3%	26.7%	3.97	.67
6 Has the Standard Gauge Railway project met or exceeded the anticipated return on investment, indicating its financial viability"	-	6.7%	26.7%	46.7%	20%	4.37	.55

Table 4 shows the descriptive statistics for the responses on Performance of public-private projects. The study examined whether the Standard Gauge Railway project delivered on its return on equity, considering the financial performance and the expectations of equity investors. Analysis indicate that 20% of the respondents agreed, 46.7% strongly agreed while 26.7% were undecided. On the other hand, 6.7% of the respondents disagreed whereas none strongly disagreed. The mean score was 3.50 with a standard deviation of 0.51. Results indicate that generally, the Standard Gauge Railway project delivered on its return on equity, considering the financial performance and the expectations of equity investors.

With respect to whether ROE performance influenced investor confidence and the ability to attract further equity investment for the project's expansion or future rail-related ventures, analysis show that 20% of the respondents strongly agreed, 26.7% agreed while 20% were undecided. Conversely, 20% of the respondents disagreed whereas 13.3% strongly disagreed. The mean score was 3.5 with a standard deviation of 0.51. From this result, it can be inferred

that ROE performance influenced investor confidence and the ability to attract further equity investment for the project's expansion or future rail-related ventures.

Another issue was whether the Standard Gauge Railway project achieve its projected payback period, and if not, how far off is it from the initial estimate. Analysis of responses on this indicate that, 46.7% of the respondents strongly agreed, 20% agreed while 26.7% were undecided. On the other hand, 6.7% of the respondents disagreed whereas none strongly disagreed. The mean score was 3.77 with a standard deviation of 0.73. This suggests that generally, the Standard Gauge Railway project achieve its projected payback period.

Another issue explored was whether the actual payback period influenced decision-making for the project stakeholders, and what adjustments have been made in response. Analysis indicate that 13.3% of the respondents strongly agreed, 33.3% agreed while 26.7 were undecided. Conversely, 6.7% of the respondents disagreed whereas 20% strongly disagreed. The mean score was 4.0 with a standard deviation of 0.49. This shows that generally, the actual payback period influenced decision-making for the project stakeholders.

The researcher also explored whether the ROI performance of the Standard Gauge Railway project had attracted further investment or financial support for future rail-related initiatives. Analysis on this show that 26.7% of the respondents strongly agreed, 13.3% agreed while 26.7% were undecided. Conversely, 13.3% of the respondents disagreed whereas 20% strongly disagreed. The mean score was 4.0 with a standard deviation of 0.49. Findings indicate that the ROI performance of the Standard Gauge Railway project had attracted further investment or financial support for future rail-related initiatives.

Finally, the researcher sought to find out whether the Standard Gauge Railway project has met or exceeded the anticipated return on investment, indicating its financial viability. Analysis of this show that 20% of the respondents strongly agreed, 46.7% agreed while 26.7% were undecided. Conversely, 6.7% of the respondents disagreed whereas none strongly disagreed. The mean score was 4.37 with a standard deviation of 0.55. From these results, it can be inferred that the Standard Gauge Railway project has met or exceeded the anticipated return on investment. The results were in support of the results by Johnson and Brown (2020) who conducted a comprehensive empirical study aimed at investigating the impact of varying budget allocation levels on the efficiency and effectiveness of Monitoring and Evaluation (M&E) practices within Public-Private Partnership (PPP) projects in Kenya. The research identified a correlation between a transparent and accountable budget allocation process and the enhanced effectiveness of M&E practices

c. Inferential Statistics on Data Management for M&E And Evaluation And Performance of PPP

Table 5 shows the results on the correlation between data management for M&E and Performance of PPP.

Table 5 : Correlation Between Data Management for M&E and Performance of PPP

		Performance of PPP
Data management for M&E	Spearman Correlation	.79**
	Sig. (2-tailed)	.00
	N	52

Table 5 shows that there was a positive and significant correlation between data management for M&E and performance of PPP, $r(52) = .79, p < .05$. The findings imply that performance of PPP is significantly influenced by data management for M&E. Increase in data management for M&E leads to improved performance of PPP and vice versa.

Table 6 shows the regression model summary for data management for M&E.

Table 6 : Regression model summary for Data Management for M&E

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R	R square
	B	Std. Error	Beta				
1	(Constant)	10.54		12.00	.00	0.81	0.72
		.63					
		.84	.80	3.46	.00		

a. Dependent Variable: Performance of PPP

The results in Table 6 indicates that data management for M&E was a significant predictor of performance of PPP. The regression coefficient of the predictor variable was 0.81 which shows that data management for M&E had a strong positive predictive relationship with the performance of PPP. *R* square was .72 suggesting that 72% variance in performance of PPP is explained by capability building for M&E. The results indicate that data management for M&E had a positive and significant relationship with performance of PPP, $\beta = 0.84, t(52) = 12, p < .05$. This implies that a unit change in data management for M&E leads to 0.84 change in performance of PPP.

The prediction equation for the regression model 1 is as below:

$$\hat{Y} = 10.54 + 0.84X_1 + \epsilon$$

Where $\hat{Y}$ = Predicted performance of PPP; X_1 = data management for M&E, and ϵ = standard error. The findings are in line a study by Caffrey and Munro (2021), which found that data analysis and reporting is a key function of effective monitoring and evaluation systems in humanitarian projects.

4.4 Capability Building for M&E and Performance of Public-Private Projects

a. Descriptive Statistics for the Responses On Capability Building for M&E

In this section, the study presents the findings on capability building for M&E. It begins with descriptive statistics and then inferential statistics to answer the research question.

Table 7 shows the descriptive statistics for the responses on capability building for M&E.

Table 7 : Capability Building for M&E

The statements were rated on a scale of 1-5: (1=strongly disagree, 2= disagree, 3= neutral, 4 agree and 5 strongly agree).

	Statements	1	2	3	4	5	Mean	SD
1	Capacity building program for the Standard Gauge Railway project has enhanced the skills and knowledge of the project team and key stakeholders	3.2%	-	-	83.9%	12.9%	3.63	.67
2	capacity building initiative improved the project team's ability to address technical challenges and operational issues associated with the Standard Gauge Railway project	-	-	80.6%	-	19.4%	3.73	.64
3	capacity building program ensure that all project participants understand and adhere to safety, quality, and operational standards	3.2%	-	-	64.5%	32.3%	4.37	.61
4	how satisfied are you with the impact of the capacity building efforts on the successful implementation and operation of the Standard Gauge Railway project	12.9%	6.5%	3.2%	32.3%	45.2%	4.27	0.64

Table 7 shows the descriptive statistics for the responses on Capability Building for M&E. The study examined whether Capacity building program for the Standard Gauge Railway project has enhanced the skills and knowledge of the project team and key stakeholders. Analysis indicate that 12.9% of the respondents strongly agreed, 83.9% agreed while none were undecided. On the other hand, none of the respondents disagreed whereas 3.3% strongly disagreed. The mean score was 3.63 with a standard deviation of 0.67. Results substantially indicate that capability building program for the Standard Gauge Railway project has enhanced the skills and knowledge of the project team and key stakeholders.

With regard to whether capability building initiative improved the project team's ability to address technical challenges and operational issues associated with the Standard Gauge Railway project, analysis show that 19.4% of the respondents strongly agreed, none agreed while 80.6% were undecided. Conversely, none of the respondents disagreed and none strongly disagreed. The mean score was 3.73 with a standard deviation of 0.64. From this result, it can be inferred that largely, there was indecision concerning whether capacity building initiative improved the project team's ability to address technical challenges and operational issues associated with the Standard Gauge Railway project.

Another issue was whether the capability building program ensure that all project participants understand and adhere to safety, quality, and operational standards. Analysis of responses on this indicate that, 32.3% of the respondents strongly agreed, 64.5% agreed while none were undecided. Conversely, none of the respondents disagreed whereas 3.2% strongly disagreed. The mean score was 4.37 with a standard deviation of 0.61. This suggests that generally, capability building program ensures that all project participants understand and adhere to safety, quality, and operational standards.

Another issue explored was how satisfied the respondents were with the impact of the capability building efforts on the successful implementation and operation of the Standard Gauge Railway project. Analysis indicate that 45% of the respondents strongly agreed, 32.3% agreed while 3.2% were undecided. On the other hand, 6.5% of the respondents disagreed whereas 12.9% strongly disagreed. The mean score was 4.27 with a standard deviation of 0.64. This shows that generally, respondents were satisfied with the impact of the capacity building efforts on the successful implementation and operation of the Standard Gauge Railway project.

Based on the results, it was established that Standard Gauge Railway has built capacity for M&E. On whether capacity building program for the Standard Gauge Railway project has enhanced the skills and knowledge of the project team and key stakeholders, the respondents gave an average mean score of 3.63, indicating a moderate level of agreement. The standard deviation of 0.67 suggests some variability in responses, indicating that some respondents may

be more responsive than others. On whether capacity building initiative improved the project team's ability to address technical challenges and operational issues associated with the Standard Gauge Railway project, the mean score was 3.73, indicating a moderate level of agreement with relatively consistent opinions among participants (as shown by the low standard deviation of 0.64).

On the statement capacity building program ensures that all project participants understand and adhere to safety, quality, and operational standards, the mean score was 4.37, indicating a relatively high level of agreement. The standard deviation of 0.61 suggests some variability, implying that while most respondents engage in this practice, there may be differences in the extent to which they do so. The statement on how satisfied are you with the impact of the capacity building efforts on the successful implementation and operation of the Standard Gauge Railway project, the mean score was 4.27, indicating a relatively high level of agreement among participants. The standard deviation of 0.64 implies some variability in responses, with some participants possibly using this method more than others. Generally, the results indicate that respondents appreciate the impact of the capacity building efforts on the successful implementation and operation of the Standard Gauge Railway project. These results agree with findings in a study. The study conducted by study Kissi et al. (2019), on the relationship between capacity building and the performance of monitoring and evaluation systems in child protection projects. A study by Otieno and Otieno (2019) found similar results. The study found that monitoring team training and monitoring data management practices had a significant positive impact on the performance of PPP transport and infrastructure projects.

b. Inferential Statistics on Capability Building for M&E And Evaluation And Performance of PPP

Table 8 shows the results on the correlation between capability building for M&E and Performance of PPP.

Table 8 : Correlation Between Capability Building for M&E and Performance of PPP

		Performance of PPP
Capability Building for M&E	Spearman Correlation	.72**
	Sig. (2-tailed)	.00
	N	52

The Table 8 reveals that there was a significant positive correlation between capability building for M&E and performance of PPP, $r(52) = .72, p < .05$. The findings imply that performance of PPP is significantly influenced by capability building for M&E. Increase in capability building for M&E leads to improved performance of PPP. The results are in line with a study Kissi et al. (2019), which examined the relationship between capacity building and the performance of monitoring and evaluation systems in child protection projects.

Table 9 shows the regression model summary for capability building for M&E.

Table 9 : Regression model summary for Capability Building for M&E

Model	Unstandardized Coefficients B	Standardized Coefficients Beta	t	Sig.	R	R square
	Std. Error					

1	(Constant)	11.68	.41		13.00	.00	0.76	0.69
		.85	.46	.72	3.43	.00		

a. Dependent Variable: Performance of PPP

b. Predictors: (Constant), Capability Building for M& E

The result in Table 9 indicate that capability building for M&E was a significant predictor of performance of PPP. The regression coefficient of the predictor variable was 0.76 which shows that capability building for M&E had a strong positive predictive relationship with the performance of PPP. *R* square was .69 suggesting that 69% variance in performance of PPP is explained by capability building for M&E. The results indicate that capability building for M&E had a positive and significant relationship with performance of PPP, $\beta = 0.85$, $t(52) = 13$, $p < .05$. This implies that a unit change in capability building for M&E leads to 0.85 change in performance of PPP.

The prediction equation for the regression model 1 is as below:

$$\hat{Y} = 11.68 + 0.85X_1 + \epsilon$$

Where $\hat{Y}$ = Predicted performance of PPP; X_1 = capability building for M&E, and ϵ = standard error. The results were consistent with the findings of Kissi et al. (2019), which examined the relationship between capacity building and the performance of monitoring and evaluation systems in child protection projects. Capacity building was found to be important in the performance of monitoring and evaluation systems in child protection projects.

5. Conclusion

The study aimed at investigating the influence of data management and capacity building on performance of the Standard Gauge Railway (SGR) project in Kenya in the context of monitoring and evaluation (M &E) practices in public-private partnership (PPP) framework. On the influence of data management, the study results show that generally, data management system for M&E in the Standard Gauge Railway project effectively capture and store relevant project data. Further, the results show that the data management system support data analysis and reporting in a timely manner, facilitating informed decision-making for the Standard Gauge Railway project. Another key issue revealed by the study was that generally, data management system ensures data accuracy, security, and accessibility for project stakeholders involved in M&E activities for the Standard Gauge Railway project. It can thus be concluded that an effective data management system is critical in enhancing the success of PPP projects.

With respect to capacity building, the study findings show that performance of PPP is significantly influenced by capability building for M&E whereby increase in capacity building for M&E leads to improved performance of PPP. This was revealed by general satisfaction by the respondents with the impact of the capacity building efforts on the successful implementation and operation of the Standard Gauge Railway project. Thus, the results substantially indicate that capability building program for the Standard Gauge Railway project has enhanced the skills and knowledge of the project team and key stakeholders. From the study results therefore, it can equally be concluded that capacity building enhances the successful implementation of PPP projects.

6.Recommendations

This study investigated the influence of data management and capacity building on performance of the Standard Gauge Railway (SGR) project in Kenya in the context of monitoring and evaluation (M &E) practices in public-private partnership (PPP) framework. With respect to influence of data management on project performance, it is imperative that all PPPs put in place a sound data management system to enhance project performance. This is because as revealed by the current study and other studies from reviewed literature, empirical evidence points to the effectiveness of a sound data management system in enhancing project performance.

Similarly, evidence from the current study and other studies in the reviewed literature show that capacity building positively influences PPP projects performance. It is therefore imperative to ensure that a comprehensive capacity building program is implemented for all key staff undertaking any PPP project in order to enhance project performance.

It is also critical to incorporate a timely and comprehensive monitoring and evaluation program within the implementation of the PPPs so as to facilitate timely intervention that may be needed during the life of the project.

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