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PARTICIPATORY MONITORING AND EVALUATION ON COMPLETION OF KENYA POLICE HOUSING SCHEME PROJECTS

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ABSTRACT

Objective: The study aimed to investigate how participatory monitoring and evaluation influences completion of Kenya police housing scheme projects.

Theoretical Framework: In this topic, the main concepts and theories that underpin the research are presented. Project Management Theory and Participatory Development Theory stand out, providing a solid basis for understanding the context of the investigation.

Method: Pragmatism paradigm and mixed method design were adopted. The study employed descriptive statistics involving the use of measures of central tendencies and measures of dispersion and inferential statistics to analyze quantitative data. In addition, the researcher conducted a Pearson's correlation and a simple regression analysis.

Results and Discussion: The study found a strong correlation between the completion of Kenya police housing scheme projects and participatory monitoring and evaluation. The overall F statistics, ($F = 119.092$, $p < 1.23E\text{-}46 < 0.05$), indicated that there was a very statistically significant relationship between participatory monitoring and evaluation (development of TOR, designing participatory instruments, participatory planning for evaluation exercise, and conducting participatory fieldwork) and completion of Kenya police housing scheme projects. The study recommends that Kenya police housing scheme projects should establish an independent monitoring and evaluation department that identifies, analyses, monitors and controls housing projects.

Research Implications: The findings would contribute to practice as it would benefit construction industry professionals and contractors operating in Kenya. By adhering to efficient resource allocation practices, contractors can enhance project efficiency, minimize wastage, and adhere to budget constraints.

Originality/Value: This study contributes to the literature by enriching the existing knowledge on completion of Kenya police housing scheme projects by giving deductions on the relation to participatory monitoring and evaluation. Other scholars used the study results as a locus for future studies in regard to the role of participatory monitoring and evaluation as well as underpinning theories.

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MONITORAMENTO E AVALIAÇÃO PARTICIPATIVOS NA CONCLUSÃO DOS PROJETOS DO ESQUEMA HABITACIONAL DA POLÍCIA DO QUÊNIA

RESUMO

Objectivo: O estudo teve como objectivo investigar como a monitorização e avaliação participativa influenciam a conclusão dos projectos de esquemas habitacionais da polícia do Quénia.

Referencial Teórico: Neste tópico são apresentados os principais conceitos e teorias que fundamentam a pesquisa. Destacam-se a Teoria da Gestão de Projetos e a Teoria do Desenvolvimento Participativo, fornecendo uma base sólida para a compreensão do contexto da investigação.

Método: Foram adotados o paradigma do pragmatismo e o desenho de métodos mistos. O estudo utilizou estatística descritiva envolvendo o uso de medidas de tendências centrais e medidas de dispersão e estatística inferencial para análise de dados quantitativos. Além disso, o pesquisador realizou uma correlação de Pearson e uma análise de regressão simples.

Resultados e Discussão: O estudo encontrou uma forte correlação entre a conclusão dos projectos do esquema habitacional da polícia do Quénia e a monitorização e avaliação participativas. As estatísticas F globais, (F =119,092, p<1,23E-46<0,05), indicaram que havia uma relação estatisticamente significativa entre monitorização participativa e avaliação (desenvolvimento de TdR, concepção de instrumentos participativos, planeamento participativo para exercício de avaliação, e realização de trabalho de campo participativo) e conclusão de projectos de esquemas habitacionais para a polícia do Quénia. O estudo recomenda que os projectos de esquemas habitacionais da polícia do Quénia criem um departamento independente de monitorização e avaliação que identifique, analise, monitorize e controle os projectos habitacionais.

Implicações da Investigação: As conclusões contribuiriam para a prática, uma vez que beneficiariam os profissionais da indústria da construção e os empreiteiros que operam no Quénia. Ao aderirem a práticas eficientes de alocação de recursos, os empreiteiros podem aumentar a eficiência do projeto, minimizar o desperdício e aderir às restrições orçamentárias.

Originalidade/Valor: Este estudo contribui para a literatura ao enriquecer o conhecimento existente sobre a conclusão dos projectos de esquemas habitacionais da polícia do Quénia, fornecendo deduções sobre a relação com a monitorização e avaliação participativas. Outros estudiosos utilizaram os resultados do estudo como um local para estudos futuros no que diz respeito ao papel da monitorização e avaliação participativa, bem como teorias subjacentes.

Palavras-chave: Projectos de Habitação, Polícia do Quénia, Monitorização e Avaliação Participativa, Conclusão de Projectos, Gestão de Recursos.

SEGUIMIENTO Y EVALUACIÓN PARTICIPATIVOS DE LA FINALIZACIÓN DE LOS PROYECTOS DEL PLAN DE VIVIENDAS DE LA POLICÍA DE KENIA

RESUMEN

Objetivo: El estudio tuvo como objetivo investigar cómo el seguimiento y la evaluación participativos influyen en la finalización de los proyectos del plan de alojamiento de la policía de Kenia.

Marco Teórico: En este tema se presentan los principales conceptos y teorías que sustentan la investigación. Se destacan la Teoría de la Gestión de Proyectos y la Teoría del Desarrollo Participativo, proporcionando una base sólida para comprender el contexto de la investigación.

Método: Se adoptó el paradigma del pragmatismo y el diseño de métodos mixtos. El estudio empleó estadística descriptiva que implica el uso de medidas de tendencias centrales y medidas de dispersión y estadística inferencial para analizar datos cuantitativos. Además, el investigador realizó una correlación de Pearson y un análisis de regresión simple.

Resultados y Discusión: El estudio encontró una fuerte correlación entre la finalización de los proyectos del plan de viviendas de la policía de Kenia y el monitoreo y evaluación participativos. Las estadísticas generales de F, (F =119.092, p<1.23E-46<0.05), indicaron que había una relación estadísticamente muy significativa entre el monitoreo y la evaluación participativos (desarrollo de TOR, diseño de instrumentos participativos, planificación participativa para el ejercicio de evaluación y realización de trabajo de campo participativo) y finalización de proyectos de planes de viviendas para la policía de Kenia. El estudio recomienda que los proyectos de planes de vivienda de la policía de Kenia establezcan un departamento independiente de seguimiento y evaluación que identifique, analice, supervise y controle los proyectos de vivienda.

Implicaciones de la Investigación: Los hallazgos contribuirían a la práctica, ya que beneficiarían a los profesionales y contratistas de la industria de la construcción que operan en Kenia. Al adherirse a prácticas eficientes de asignación de recursos, los contratistas pueden mejorar la eficiencia del proyecto, minimizar el desperdicio y cumplir con las restricciones presupuestarias.

Originalidad/Valor: Este estudio contribuye a la literatura al enriquecer el conocimiento existente sobre la finalización de los proyectos del plan de vivienda de la policía de Kenia al brindar deducciones sobre la relación con el monitoreo y la evaluación participativos. Otros académicos utilizaron los resultados del estudio como lugar para futuros estudios con respecto al papel del monitoreo y la evaluación participativos, así como para sustentar las teorías.

Palabras clave: Proyectos de Vivienda, Policía de Kenia, Monitoreo y Evaluación Participativos, Finalización de Proyectos, Gestión de Recursos.

1 INTRODUCTION

The construction industry plays a crucial role in the economies of developing countries, contributing significantly to their capital assets, GDP, and wealth invested in fixed assets (Nguyen, 2020). A country's vision, encompassing economic, social, and political pillars, relies heavily on construction activities through flagship projects to achieve goals like new industrialization, increased incomes, and improved quality of life in a clean and secure environment (Ghaffar, Burman, & Braimah, 2020). Despite its significance in developing countries and their national development, the construction industry's overall performance is often poor.

Resource management, as a subset of project management, addresses human, financial, distribution, and demand for project resources (Ameh & Daniel, 2017). It involves prioritizing resource initiatives, planning resource allocation, tracking resource usage and productivity, and improving resource allocation to optimize efficiency. Effective resource management allows for proactive allocation based on project policies, leading to higher levels of optimization. Proper planning and implementation of resource allocation can significantly impact project success (Ghaffar, Burman, & Braimah, 2020). Participatory monitoring and evaluation (PM&E) emerged as a response to the limitations of traditional monitoring and assessment methods in addressing the needs of key stakeholders directly affected by projects. PM&E involves engaging essential stakeholders, development organizations, and policy-makers in determining how development should be measured and outcomes monitored (Servaes & Lie, 2020). The inclusion of participatory approaches in monitoring and evaluation processes ensures alignment with stakeholders' interests and needs.

The project management theory, as developed by influential figures like Henry Gantt and Henri Fayol, emphasizes the importance of effective planning, organization, and control of resources to achieve project success. Stakeholder Theory, proposed by R. Edward Freeman, highlights the significance of considering the interests and influences of diverse stakeholders involved in the housing projects. Institutional Theory, with contributions from scholars like

John W. Meyer and W. Richard Scott, examines the impact of external institutions on project behavior and decision-making. Additionally, Participatory Development Theory, influenced by Robert Chambers, advocates for beneficiary involvement and community participation in project implementation. These theories collectively offer valuable insights into the complexities of resource management, participatory approaches, and project completion, providing a theoretical foundation for this study's exploration of the challenges and opportunities in the Kenya Police Housing Scheme projects.

Efficient resource management is a critical factor in the completion of Kenya police housing scheme projects, as construction plays a vital role in Kenya's socioeconomic development (Mue, 2020). Successful projects require proper allocation of funds, materials, and labor to meet quality standards, stay within budget, and finish on time (Ogeno, 2016). Despite the government's significant financial support for construction, challenges such as budget overruns and project delays persist, highlighting the importance of effective resource planning and allocation. With the construction industry booming in Kenya, particularly in Nairobi and its environs, resource demand has surged, necessitating optimized resource management to handle the growing workforce and materials requirements (Muthike, 2016). By focusing on efficient resource management, the Kenya Police Housing Scheme projects can overcome challenges, achieve successful outcomes, and contribute positively to the country's development.

For several years, the crisis of police housing has been a source of serious and ongoing debate in the National Assembly and the police formation cycle. In all of these debates, one major solution has been the agitation for the provision of resources to fund adequate and decent houses for the police set to relieve pressure on police officers who have previously been forced to share accommodation units due to an acute housing shortage. Despite the fact that the Kenya Police Housing Scheme was launched, the majority of the residences have yet to be finished. Housing projects in Thika and Kikuyu began on January 31, 2011, and as of October 31, 2017, none had been finished. There were no known reasons why the Kenya Police Housing Scheme projects were not completed years after they were supposed to (Ochenge, 2018). In 2019, State Department for Housing said 60 housing units will be built in every county in Kiambu, Kisii, Sondu (Kisumu), Narok, Korinda (Busia), Thika (Kiambu), Gilgil (Nakuru), Embakasi (Nairobi), Langas (Uasin Gishu), Chuka, Kathiani (Machakos), Banissa (Mandera) and Malkagufi in Wajir County (Kieti, 2020). However, inadequate resource management has led to delay in completion of these constructions.

In addition, 12 enterprises were given tenders in January 2018 to construct 1,050 dwelling units in 12 work sites throughout 12 counties (State Department for Housing, 2021). However, the majority of the projects are less than 70% complete, and the contractors have been notified that their projects would be postponed. Lack of land on which to build new houses, as indicated by the existence of police stations and patrol bases on private land in many regions of the country, has been mentioned as one of the major reasons for the failure of housing projects in Kenya. The level of participatory monitoring and evaluation determines the quality of housing projects. The majority of housing projects have failed due to ineffective monitoring and evaluation by all stakeholders. The building of substandard housing units has resulted in substantial losses of public monies due to ineffective participatory monitoring and assessment designs (Wafula, 2017). Other issues, such as treasury delays in releasing funds and a lack of people, have contributed to the sluggish completion rates of several Kenya Police Housing Scheme projects across the country. Therefore, this study aimed at establishing to the moderating influence of participatory monitoring and evaluation on the relationship between resource management in construction and completion of Kenya police housing scheme projects.

Studies done on housing projects including police projects include Mwinzi and Moronge (2018) who examined determinants of completion of housing projects in informal settlements in Nairobi City County, Kenya and Luvuga (2018) examined the determinants of successful completion of housing projects at national Housing Corporation in Kenya. In addition, Ndungu (2017) examined the factors influencing the implementation of government housing projects for Kenya Police Service in Nairobi County, Kenya, Ringeera (2020) examined the factors influencing completion of selected Kenya police service housing projects in Central Kenya and Ochenge (2018) did a study on project management practices and performance of road infrastructure projects done by local firms in the Lake Basin Region, Kenya. The studies reviewed did not specifically focus on project resource management, participatory monitoring and evaluation and completion of Kenya police housing scheme projects. Therefore, this study aimed at establishing the effect of resource management on completion of Kenya police housing scheme projects.

2 THEORETICAL FRAMEWORKS

2.1 PROJECT MANAGEMENT THEORY

The modern concept of project management was developed in the mid-20th century, influenced by pioneers such as Henry Gantt, Henri Fayol, and Frederick Winslow Taylor. These early theorists laid the groundwork for project planning and control techniques, emphasizing systematic approaches to achieving project goals. Project management theory is based on principles and practices that focus on effective project planning, organization, execution, and control (Kerzner, 2017). Key aspects of this theory include defining clear project objectives, allocating resources efficiently, managing risks proactively, and adhering to schedules and budgets to ensure successful project outcomes.

One of the most influential tools in project management is the Gantt chart, introduced by Henry Gantt in the early 20th century. Gantt charts provide a visual representation of a project's schedule, highlighting task durations and dependencies, which helps project managers to plan and monitor progress effectively (Wilson, 2003). Henri Fayol's contributions, particularly his five management functions (planning, organizing, commanding, coordinating, and controlling), have also been foundational in developing modern project management practices (Wren, 1995).

Critics of traditional project management approaches argue that they can be overly rigid and may not account for the complexities and uncertainties inherent in many projects (Winter et al., 2006). This has led to the development of agile project management methodologies, which emphasize flexibility, iterative progress, and stakeholder collaboration. Agile methodologies, such as Scrum and Kanban, are particularly beneficial in environments where project requirements are expected to change or evolve rapidly (Beck et al., 2001; Conforto et al., 2016).

Agile project management methodologies promote a dynamic approach to managing projects. They focus on delivering small, incremental improvements, allowing for frequent reassessment and adaptation of project goals. This is especially useful in the technology and software development sectors, where changes in user requirements and technological advancements can necessitate swift adjustments (Highsmith, 2004). The relevance of agile methodologies extends to construction projects as well, where iterative planning and continuous stakeholder feedback can enhance project adaptability and resilience (Conforto et al., 2016).

Project management theory is highly relevant to this study as it directly addresses the core aspects of resource management and the completion of Kenya police housing scheme projects. By applying project management principles, the study can explore how effective resource allocation, scheduling, and risk management contribute to the successful completion of housing projects (Nguyen, 2020). Additionally, incorporating agile methodologies can provide insights into how flexibility and stakeholder engagement can improve project outcomes in the dynamic and often unpredictable environment of construction projects.

2.2 PARTICIPATORY DEVELOPMENT THEORY

Participatory Development Theory has been significantly influenced by the works of Robert Chambers, who promoted participatory methodologies in development projects and emphasized the importance of putting beneficiaries at the center of development initiatives (Chambers, 1997). Participatory development theory highlights the significance of involving beneficiaries and local communities in the decision-making and implementation of development projects. This approach aims to empower communities, ensuring that projects address their specific needs and aspirations (Cornwall & Jewkes, 1995).

The core tenet of participatory development is that development initiatives are more effective and sustainable when they incorporate the perspectives and inputs of those directly affected by the projects. This approach contrasts with top-down development models, where decisions are made by external experts without significant input from local communities (Pretty, 1995). Participatory development fosters ownership and accountability among beneficiaries, as they are actively involved in defining project goals, monitoring progress, and evaluating outcomes (Chambers, 2008).

However, participatory approaches are not without challenges. Engaging all stakeholders can be time-consuming and logistically complex, particularly in large or diverse communities. Power imbalances may also persist, with more vocal or influential community members potentially dominating the decision-making process (Cooke & Kothari, 2001). Furthermore, achieving genuine participation can be difficult in contexts where there is a lack of trust between communities and project implementers (Mosse, 2001).

Despite these challenges, participatory development theory remains highly relevant to this study. In the context of the Kenya police housing scheme projects, engaging beneficiaries and local communities in project monitoring and evaluation can provide valuable insights into

how resource management and project outcomes can be improved. For instance, involving police officers and their families in the planning and evaluation process can help ensure that the housing units meet their needs and preferences, leading to higher satisfaction and better project outcomes (Gaventa & Barrett, 2012).

Participatory monitoring and evaluation (PM&E) processes can also enhance transparency and accountability in project implementation. By actively involving stakeholders in monitoring project progress, identifying issues, and suggesting improvements, PM&E can help ensure that resources are used efficiently and effectively (Estrella & Gaventa, 1998). This approach can be particularly beneficial in addressing the challenges of resource mismanagement and project delays that have historically plagued public housing projects in Kenya (Wafula, 2019).

3 METHODOLOGY

Pragmatism paradigm was adopted for this study. This approach is based on abductive reasoning that uses both qualitative and quantitative methods in one study (Plomp, 2018). The study used a mixed research design. The target population was the Kenya police housing scheme projects. The unit of analysis was the 47 police housing scheme projects in 8 regional blocks in Kenya (Central, Coast, Eastern, Nairobi, North Eastern, Nyanza, Rift valley and western) that began in the fiscal year 2020/2021 to fiscal year 2023/2024. The unit of observation was 1564 respondents from the police housing projects who include the 41 project architects, 406 project managers, 388 contractors and sub-contractors, 342 client representatives (police officials), 56 national police commission officials (the accountant, the procurement officers), 181 quantity surveyors, 51 engineers (electrical, mechanical, structural), 48 clerk of works and 51 Ministry of public works officials in various police projects. These staff were chosen because they were directly involved in the Kenya police housing scheme projects. Project Architects played a crucial role in the design and planning phases, ensuring that architectural aspects meet functional and aesthetic requirements. Project Managers oversee the entire project lifecycle, offering insights into overall performance, resource allocation, and adherence to timelines. Contractors and Sub-contractors provide practical perspectives on challenges and successes during project execution. Client Representatives, acting as end-users, evaluate the suitability of housing units. National Police Commission Officials contribute insights into administrative procedures and challenges. Quantity Surveyors assess cost-

effectiveness and financial management practices. Engineers (Electrical, Mechanical, Structural) ensure compliance with technical standards. Clerk of Works monitor construction quality on-site. Ministry of Public Works Officials provide regulatory oversight and support. This diverse range of respondents represents stakeholders crucial for a comprehensive analysis of project performance and management practices.

The sample size of 319 was attained using (Yamane, 1967) simplified formula. This formula was used to compute the size of the sample as shown in the formula

$$n = \frac{N}{1+N(e)^2} \qquad (1)$$

where:

n is the sample size
N is the population size and
e is the margin of error.

N =1564

e = 0.05

$$n = \frac{1564}{1 + 1564(0.05)^2} = 319$$

Stratified random sampling was used to obtain a sample from each stratum. This approach was chosen because it ensured that small groups are represented in the sample (Buntin, 2020), thereby allowing for a comprehensive understanding of the diverse perspectives within the population. The categories formed strata from which the study sample was obtained, with each category representing a distinct subgroup involved in the police housing projects. The formation of strata was based on the positions held by the respondents, including project architects, project managers, contractors and sub-contractors, client representatives (police officials), national police commission officials (such as accountants and procurement officers), quantity surveyors, engineers (covering electrical, mechanical, and structural disciplines), clerk of works, and Ministry of Public Works officials. This stratification ensured that the sample adequately represented the various stakeholders involved in the projects, allowing for a more robust analysis of their perspectives and experiences. The sample was therefore 319 as shown in as shown in Table 1. To calculate the ratio, =319/1564 became 0.204. The ratio was

multiplied to each of the population categories to bring about the sample size for each. That is, for the project architects, the population was 41. When multiplied by the ration (0.204), the sample was 8. This was done for all strata.

Table 1

Sample Size

Population	Population	Ratio	Sample
The project Architects	41	0.204	8
Project managers	406	0.204	83
Contractors and sub-contractors	388	0.204	79
Client representatives (police officials - OCPD, OCS)	342	0.204	70
National police commission officials (the Accountant, the Procurement officers)	56	0.204	11
Quantity Surveyors	181	0.204	37
Engineers (Electrical, Mechanical, Structural)	51	0.204	10
Clerk of works	48	0.204	10
Ministry of public works officials	51	0.204	10
Total	1564		319

Source: Researcher (2023)

In this study, primary data was used. The research instruments that were used for data collection are: a self-administered structured questionnaire and interview guides. While a self-administered questionnaire was used to collect quantitative data, the interview guides and observation checklist were used to gather qualitative data. The self-administered questionnaire was used to collect data from 83 project managers, 79 contractors and sub-contractors, 70 client representatives (police officials), and 37 quantity surveyors. The questionnaire collected both qualitative and quantitative data, that is, the questionnaire was made up of both open ended and closed ended questions. Key informant interviews were conducted with 49 interviewees consisting of 8 project architects, 11 national police commission officials (the accountant, the procurement officers), 10 engineers (electrical, mechanical, structural), 10 clerk of works and 10 Ministry of public works officials. These interviewees were selected since they are the individuals who had direct involvement in the Kenya police housing scheme projects. Diagnostic tests such as multicollinearity test formed part of this research to ensure there is the suitability of data for primary assumptions of multiple linear regression.

Firstly, the questionnaire underwent evaluation by supervisors to assess its appropriateness and clarity, ensuring that the items accurately reflected the constructs under investigation. Additionally, input was sought from experienced lecturers in the field of study to validate the measurement of constructs and verify their alignment with established theory and practice. Moreover, to enhance construct validity and refine the suitability of indicators, factor

analysis was conducted using principal component analysis (PCA). Through PCA, indicators deemed unsuitable were identified and excluded from further statistical analysis, contributing to the refinement of the measurement model. The factor loadings of each variable on the principal components were scrutinized to discern their strength of association with the underlying constructs, aiding in the interpretation of the components represented by the variables. A high loading indicated a strong association, while a weak loading suggested a lack of clear underlying structure in the data or unsuitability of PCA for the dataset. Similarly, to ensure the credibility of qualitative data, the same panel of lecturers reviewed the items in the instruments for appropriateness and clarity, providing valuable insights to enhance the validity of qualitative findings. This rigorous validation process, guided by established methodologies and expert input, bolstered the credibility and trustworthiness of both quantitative and qualitative data collected in the study (Gorard, 2018).

In this study, interviews were utilized for qualitative data collection, complementing other methods to ensure data triangulation and consistency in the findings (Sileyew, 2019). Triangulation, which involves employing multiple sources of data or different data collection methods to corroborate findings, was instrumental in bolstering the credibility of the collected data. Furthermore, reliability was rigorously addressed through consultations with research lecturers and supervisors, tapping into their expertise to enhance the trustworthiness of the research process. To further enhance reliability, the split-half method was employed on the questionnaire. This method is a robust approach for assessing internal consistency and reliability by dividing the instrument into two halves and analyzing the correlation between the scores of these halves (Bans-Akutey & Tiimub, 2021). By administering the questionnaire only once, the split-half method facilitated the calculation of total scores for each respondent, which were then split into even and odd halves. Subsequently, the correlation between these halves was computed to derive a Cronbach's Alpha coefficient, which ranges from 0 to 1. As per Creswell and Clark (2017), a reliability coefficient of 0.7 or higher is deemed sufficient. Therefore, the instruments were deemed reliable if the Cronbach's Alpha coefficient exceeded 0.7.

The qualitative data collected was analyzed using NVivo 12, a qualitative data analysis software. NVivo facilitated the systematic organization, coding, and exploration of the data to identify key themes and patterns related to resource management and participatory monitoring in Kenya police housing scheme projects (Limna, 2023). The data analysis process began with open coding, where each interview transcript was thoroughly examined to identify initial codes representing specific concepts and ideas. These initial codes were then grouped into broader

themes and sub-themes through an iterative process of constant comparison. After conducting several interviews and transcribing the data, the initial codes are generated. These initial codes represent specific concepts, ideas, or patterns that emerge from the interview data. For instance, some of the initial codes might include "compensation," "workload," and "managerial support". The emergent themes and sub-themes were refined and validated by conducting member checking with selected participants to ensure the accuracy and credibility of the findings. By using constant comparison, the researcher ensures that the analysis remains grounded in the data itself. This iterative approach allows for the emergence of deeper insights, connections, and patterns within the qualitative data (Morgan & Nica, 2020). It helps to organize the data into a coherent structure of themes and sub-themes, making it more manageable for interpretation and reporting.

Quantitative data was descriptively analyzed by use of measures of central tendencies and measures of dispersion. The standard deviation determined how strong or weak data is from the measure of central tendency which is arithmetic mean.

Likert scale types of questions were used in the study. These were differentiated as Likert item; when an item is used to measure a single variable and Likert Scale; when a number of items are arranged as a group intended to measure a simple variable (Plomp, 2018). Likert scale data can be analyzed as an interval measurement scale. These scales are created by the researcher by composite score computation (sum or mean) 4 point or more Likert scale. Hence the Likert scales composite score needs analysis as an interval scale measurement. For items with interval scales it was recommended for descriptive to be used.

In addition, the researcher conducted a Pearson's correlation and a simple regression analysis so as to determine the relationship between variables. The models were as shown below

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon. \qquad (2)$$

where:

Y= Completion of Kenya police housing scheme projects

X_1 = participatory monitoring and evaluation (development of TOR, designing participatory instruments, participatory planning for evaluation exercise, and conducting participatory fieldwork)

ε=Error term

Table 2 indicated the operational definition of variables which includes their respective indicators, measurement, and research design and type of statistical analysis.

Table 2

Operationalization of the Variables

Objectives	Variable	Indicators	Measurement Scale	Data analysis Techniques	Tool of Data Analysis
Determine the influence of participatory monitoring and evaluation in resource management on completion of Kenya police housing scheme projects.	participatory monitoring and evaluation in resource management	Development of TOR Designing participatory instruments Participatory Planning for evaluation exercise Conducting participatory fieldwork	Interval Nominal Ratio Ordinal	Descriptive statistics inferential statistics	Descriptive statistics Pearson's Correlation analysis Regression analysis
	Completion of Kenya police housing scheme projects	Timeliness in completion Meets objective/target Completion within budget Meets required standards	Interval Ratio Nominal	Descriptive statistics inferential statistics	Descriptive statistics Pearson's Correlation analysis Regression analysis

Source: Researcher (2023)

4 RESULTS AND DISCUSSIONS

4.1 RETURN RATE

The researcher targeted 270 respondents for questionnaires and 49 respondents for interviews. Out of the 270 sampled respondents for the questionnaires targeting project managers, contractors and sub-contractors, client representatives (police officers), and quantity surveyors, 163 responded to the questionnaires giving a response rate of 60.4%. Also, there were 36 out of the sampled 49 interviewees reached that included project architects, national police commission officials (the accountant, the procurement officers), engineers (electrical, mechanical, structural), clerk of works as well as Ministry of public works officials. This gave a response rate of 72.9%. The overall response rate for the study was 62.4% which is within

what Doss, Rayfield, Burris and Lawver (2021) recommended that a response rate of above 60% was appropriate for the study.

4.2 DESCRIPTIVE STATISTICS

The combined Table 3 revealed that respondents generally perceive participatory approaches in M&E activities positively, with high mean scores across all categories.

Table 3

Descriptive statistics

Category	Average Mean	Average Standard Deviation
Development of TOR	3.389	0.690
Designing Participatory Instruments	3.494	0.655
Participatory Planning for Evaluation Exercise	3.855	0.775
Conducting Participatory Fieldwork	4.022	0.777

Firstly, the development of Terms of Reference (TOR) for M&E activities shows a moderate level of agreement among respondents, with a mean score of 3.389. This suggests that while there is a general recognition of the importance of stakeholder participation and consensus in setting M&E objectives and scope, there is room for improvement. The relatively low standard deviation of 0.690 indicates that respondents' perceptions are quite consistent. This consistency implies a shared understanding and appreciation of the processes involved in developing TOR, although the moderate mean score suggests that the implementation of these practices may not be fully optimized or universally perceived as highly effective.

In terms of designing participatory instruments, respondents generally agree on their effectiveness, as indicated by the mean score of 3.494. This score reflects a positive view of the role of participatory tools, such as interview guides and focus group questions, in facilitating comprehensive evaluation and stakeholder engagement. The low standard deviation of 0.655 further emphasizes the uniformity of these perceptions among respondents. This suggests that designing participatory instruments is recognized as a critical component of effective M&E practices, ensuring that stakeholders are actively involved in the evaluation process and that qualitative data is collected efficiently and accurately.

The category of participatory planning for evaluation exercises received a relatively high mean score of 3.855, indicating a strong agreement among respondents on its effectiveness. This high mean score highlights the perceived importance of allocating adequate

time and resources, involving stakeholders in planning, and ensuring clear budgetary provisions for M&E activities. The standard deviation of 0.775, although slightly higher than the previous categories, suggests moderate variability in responses. This variability could be attributed to differing experiences and perspectives on the adequacy of resource allocation and stakeholder involvement in the planning stages. Nevertheless, the overall high mean score underscores the critical role of participatory planning in achieving successful M&E outcomes and efficient resource utilization.

Finally, conducting participatory fieldwork stands out with the highest mean score of 4.022, reflecting a high level of agreement among respondents on its importance and effectiveness. This category also has a standard deviation of 0.777, indicating moderate variability in perceptions. The high mean score signifies a strong belief in the value of having fieldwork teams with appropriate expertise, timely and efficient reporting, and active community involvement in selecting data collection tools. These elements are seen as essential for accurate data collection, enhancing stakeholders' understanding of the M&E process, and making informed decisions based on reliable data. The consistency in high ratings for this category suggests that participatory fieldwork is a particularly valued aspect of M&E practices, reinforcing its importance in ensuring the success of the Kenya police housing scheme projects.

4.3 CORRELATION ANALYSIS

Analysis was carried out so as to establish the direction and magnitude of the relationship between the independent and dependent variables under investigation. This was in line with the objective of this study which was to assess how participatory monitoring and evaluation (development of TOR, designing participatory instruments, participatory planning for evaluation exercise, and conducting participatory fieldwork) influences completion of Kenya police housing scheme projects.

Table 4

Correlation Analysis on Participatory Monitoring and Completion of Kenya Police Housing Scheme projects

		Completion of Kenya police housing scheme projects	Development of TOR	Designing participatory instruments	Participatory Planning for evaluation exercise	Conducting participatory fieldwork
Completion of Kenya police housing scheme projects	Pearson Correlation	1				
	Sig. (2-tailed)	.				
Development of TOR	Pearson Correlation	.674	1			
	Sig. (2-tailed)	.023	.			
Designing participatory instruments	Pearson Correlation	.682	.859	1		
	Sig. (2-tailed)	.001	.008	.		
Participatory Planning for evaluation exercise	Pearson Correlation	.533	.796	.838	1	
	Sig. (2-tailed)	.028	.004	.000	.	
Conducting participatory fieldwork	Pearson Correlation	.512	.877	.855	.522	1
	Sig. (2-tailed)	.042	.000	.000	.000	.

Source: Researcher (2023)

Table 4 indicated a strong correlation between the completion of Kenya police housing scheme projects and development of TOR ($r=0.674$, $p=0.023<0.05$). There therefore a strong correlation between the completion of Kenya police housing scheme projects and development of TOR. Moreover, there is a strong correlation between the completion of Kenya police housing scheme projects and designing participatory instruments had $r=0.682$ and $p=0.001$ which was less than 0.05 therefore implying that it was significant. There was therefore a strong correlation between the completion of Kenya police housing scheme projects and designing participatory instruments.

Moreover, the findings revealed a strong correlation between participatory planning for evaluation exercise and completion of Kenya police housing scheme projects and since it had $r=0.533$ and $p=0.028<0.05$. This therefore implied that participatory planning for evaluation

exercise was significant and that there was a strong correlation between the completion of Kenya police housing scheme projects and participatory planning for evaluation exercise. The results indicate strong correlation between conducting participatory fieldwork and completion of Kenya police housing scheme projects since its r=0.512 and p=0.042<0.05. This variable was hence significant and therefore a strong correlation between conducting participatory fieldwork and the completion of Kenya police housing scheme projects.

4.4 REGRESSION ANALYSIS

The study conducted linear regression analysis to establish how participatory monitoring and evaluation influences completion of Kenya police housing scheme projects. The hypothesis was also tested by collecting data from the respondents on participatory monitoring and evaluation and then computing and using composite index in the analysis. The following hypothesis that was in line with the objective was formulated and tested.

The following hypothesis was tested using simple regression model to satisfy the objective.

H0: There is no significant between participatory monitoring and evaluation and completion of Kenya police housing scheme projects

4.4.1 Regression model

The mathematical model used for testing the null hypothesis was as follows:

Completion of Kenya police housing scheme projects = f (participatory monitoring and evaluation)

$$Y = f(X_1, \varepsilon) \quad (3)$$

$$Y = \beta 0 + \beta 1X1 + \varepsilon \quad (4)$$

where:

Y = Completion of Kenya police housing scheme projects

X1 = participatory monitoring and evaluation (development of TOR, designing participatory instruments, participatory planning for evaluation exercise, and conducting participatory fieldwork)

β0 = Constant term

β1 = Beta coefficient

ε = Error term

Table 5

Regression Analysis of Influence of Participatory Monitoring and Evaluation on Completion of Kenya Police Housing Scheme projects

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.867	.751	.745	1.350

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig
1	Regression	884.022	4	221.006	119.092	1.23E-46
	Residual	293.209	158	1.856		
	Total	1177.231	162			

Regression Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.502	6.880		3.125	.002
	Development of TOR	.689	.314	.674	2.194	.030
	Designing participatory instruments	.711	.213	.682	3.338	.001
	Participatory Planning for evaluation exercise	.633	.095	.533	6.663	.000
	Conducting participatory fieldwork	.618	.230	.512	2.687	.008
	Predictors: (constant), Development of TOR, Designing participatory instruments, Participatory Planning for evaluation exercise, Conducting participatory fieldwork					
	Dependent Variable: Completion of Kenya police housing scheme projects					

Source: Researcher (2023)

Data was analyzed and the regression results for the influence of participatory monitoring and evaluation on completion of Kenya police housing scheme projects. Table 5 shows that that r=0.867. This indicates that participatory monitoring and evaluation (development of TOR, designing participatory instruments, participatory planning for evaluation exercise, and conducting participatory fieldwork) have a strong relationship with completion of Kenya police housing scheme projects. R2 = 0.751 indicating that participatory monitoring and evaluation explains 75.1% of the variations in the completion of Kenya police housing scheme projects.

The overall F statistics, ($F = 119.092$, $p < 1.23E\text{-}46 < 0.05$), indicated that there was a very statistically significant relationship between participatory monitoring and evaluation (development of TOR, designing participatory instruments, participatory planning for

evaluation exercise, and conducting participatory fieldwork) and completion of Kenya police housing scheme projects. The null hypothesis was therefore rejected and it was concluded that participatory monitoring and evaluation significantly influences completion of Kenya police housing scheme projects.

The findings showed that if all factors (development of TOR, designing participatory instruments, participatory planning for evaluation exercise, and conducting participatory fieldwork) were held constant at zero, completion of Kenya police housing scheme projects will be 21.502. The findings also show that a unit increase in the scores of development of TOR would lead to a 0.689 increase in the scores of completion of Kenya police housing scheme projects. This variable was significant since 0.030<0.05. Further, the findings shows that a unit increases in the scores of designing participatory instruments would lead to a 0.711 increase in the scores of completion of Kenya police housing scheme projects. This variable was significant since 0.001<0.05. The study found that a unit increase in the scores of participatory planning for evaluation exercise would lead to a 0.633 increase in the scores of completion of Kenya police housing scheme projects. This variable was significant since 0.000<0.05. The findings also reveal that a unit increase in the scores of conducting participatory fieldwork would lead to a 0.618 increase in the scores of completion of Kenya police housing scheme projects. This variable was significant since 0.008<0.05.

As per the findings, at 95% confidence level, all the variables were significant as the p-value was less than 0.05. The study infer that designing participatory instruments had the greatest effect on the completion of Kenya police housing scheme projects, followed by development of TOR, then participatory planning for evaluation exercise while conducting participatory fieldwork had the least effect to the completion of Kenya police housing scheme projects.

4.5 QUALITATIVE DATA

The qualitative analysis revealed that upgrading network services was perceived as a crucial factor for the successful completion of the Kenya police housing scheme projects. Participants emphasized that improved network infrastructure, characterized by faster speeds and increased bandwidth, would significantly enhance project efficiency and productivity. One participant P12 noted, "Upgrading our network services will benefit the project immensely. With faster speeds and increased bandwidth, we can ensure faster data transfer and improved productivity across the board".

Another participant P27 highlighted the role of reliable connectivity in facilitating communication and coordination among project teams. "Reliable network services mean that our teams can communicate more effectively, share information quickly, and resolve issues in real-time. This is essential for keeping the project on track". These insights underscore the importance of investing in robust network infrastructure to support large-scale construction projects.

Participants also discussed the influence of information technology (IT) resource management on the completion of the Kenya police housing scheme projects. Effective IT resource management was identified as a key factor in avoiding rework, minimizing errors, and preventing delays. A participant P35 pointed out that efficient communication facilitated by advanced IT systems could significantly improve project outcomes. "Communication is critical in construction. With the right IT systems in place, we can avoid rework, reduce errors, and prevent delays. This helps us stay on schedule and within budget".

The adoption of cloud technology was highlighted as a best practice approach to managing construction projects. Cloud technology ensures that all project data is secure, accessible, and up-to-date, thereby enhancing collaboration and decision-making. One participant P22 explained, "Cloud technology keeps all the site data secure and accessible, forming a best practice approach to any construction project. It allows us to access the latest information from anywhere, at any time".

Moreover, effective information management was seen as essential for optimizing the use of time, resources, and expertise. As one participant P35 noted, "Effective information management enables project teams to use their time, resources, and expertise effectively to make decisions and fulfill their roles. The process of information management encompasses the collection, storage, and dissemination of project information in various forms, such as written, video, oral, audio, or electronic".

Participants identified several challenges related to resource management in the Kenya police housing scheme projects. These included inadequate funding, delays in material delivery, and shortages of skilled labor. One participant P40 stated, "One of the biggest challenges we face is inadequate funding. This affects every aspect of the project, from procurement of materials to hiring skilled labor".

To overcome these challenges, participants suggested several best practices. For instance, proactive planning and continuous monitoring of resource usage were deemed essential. According to Interviewer P18, "Proactive planning and continuous monitoring are crucial. We need to

anticipate potential issues and address them before they become major problems". Additionally, participant P42 emphasized the importance of stakeholder engagement in resource management. "Engaging stakeholders from the beginning helps us understand their needs and priorities. This ensures that resources are allocated effectively and efficiently".

The role of participatory monitoring and evaluation (PM&E) in project completion was another key theme that emerged from the qualitative data. Participants highlighted that involving stakeholders in the monitoring and evaluation processes enhanced project accountability and transparency. One participant P30 remarked, "Participatory monitoring and evaluation involve all stakeholders in the process. This enhances accountability and ensures that everyone is on the same page".

PM&E was also seen as a way to identify and address issues early in the project lifecycle. As per interviewer P37, "When stakeholders are involved in monitoring and evaluation, they can identify issues early and suggest practical solutions. This helps prevent delays and ensures the project stays on track". The feedback from stakeholders was considered invaluable for making informed decisions and improving project outcomes. An interviewer P20 stated, "Stakeholder feedback is invaluable. It provides us with different perspectives and helps us make informed decisions".

5 CONCLUSIONS

The study concluded that there was a very statistically significant relationship between participatory monitoring and evaluation (development of TOR, designing participatory instruments, participatory planning for evaluation exercise, and conducting participatory fieldwork) and completion of Kenya police housing scheme projects. The study concludes that lack of adequate financial resources was noted to affect the performance as well as quality of monitoring and evaluation. The budget implications for surveys, setting up management of monitoring and evaluation were systematically underestimated and failure to ensure spending of a reasonable proportion of resources on important aspect of the project.

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