MONITORING AND EVALUATION PRACTICES AND PERFORMANCE OF TUBERCULOSIS CONTROL PROGRAMS IN KAKAMEGA COUNTY, KENYA

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ABSTRACT

Inefficient monitoring and evaluation practices have led to failure of substantive projects to accomplish their objectives. The government of Kenya also lacks monitoring and evaluation practices due to poor standards (KNBS, 2019). In a study done in 2015 showed that Kakamega county lacked a county M&E plan, a health sector communication strategy, M&E policy, structure and human capacity. Alarmingly, by the end of 2022/2023, 49% of Kenyan counties, including Kakamega county, neither shared their success stories nor updated the e-CIMES platform. These challenges in monitoring and evaluation reporting are significantly impacting decision-making processes within the counties. The study aimed therefore to determine the influence of monitoring and evaluation practices on performance of TB control programs in Kakamega County, Kenya. Specific objectives which guide the study are; to determine the influence of M&E planning on the performance of TB Control programs; to establish the influence of M&E capacity building on the performance of TB control programs. Two theories that were adapted in this study included management theory and human capital theory. A descriptive research design was used for this study. A total of respondents targeted 65 respondents. It was a censured study, allowing all members of the population to be interviewed due to the small sample size. The study used questionnaires to collect primary data. A total of 6 individuals participated in the pilot test which represents 10% of the target population. Data from questionnaires were coded and analysed using the latest Statistical Package for Social Sciences (SPSS) computer software. The study findings reveal that M&E planning significantly influence the performance of TB control programs in Kakamega County. Through correlation analysis, it was established that there is a strong positive correlation between M&E planning and TB program performance. The results indicate a significant relationship between M&E capacity building and the performance of TB control programs. Correlation analysis revealed a strong positive correlation between M&E capacity building and TB program performance. Based on the findings, it is recommended that Kakamega County enhances its M&E planning to further improve the performance of TB control programs. To achieve this, the county should prioritize activities such as regular review and adjustment of resource allocation processes, ensuring alignment of budgets with program objectives, and enhancing the dissemination of comprehensive work plans for TB control initiatives. To enhance the performance of TB control programs, Kakamega County should focus on strengthening M&E capacity building. This can be achieved by investing in regular and tailored training programs for project staff to equip them with the necessary technical expertise for effective monitoring and evaluation

Key Words: Monitoring and Evaluation Practices, M&E Planning, M&E Capacity Building and Performance of TB Control Programs

Background of the Study

There has been increased concern for project performance in both the public and private sectors. The success of a project involves the implementation of a project schedule that is well thought out and knowledge of the critical success criteria. It helps the manager and stakeholders of the project make the best decisions and take proper action that ensures the success of the project. Project mission, top management support, project timeline plan, and customer consultation are the key determinants of project success recognized by the research community (Muchelule, 2018). When the identification and elimination of the variables that contribute to poor project performance is done, quality ensured. Monitoring and evaluation practices have over many decades become a foundation and a key process (organizational activity) in both for-profit and non-profit companies. While utilizing their limited competencies as well as resources, these organizations have overall improved and applied the approaches to better understand issues that they cannot control but have a significant impact on their survival and success (Sinesilassie, Tabish & Jha, 2018).

Monitoring is the process of checking and observing a program or project on a regular and systematic basis. Evaluation on the other hand, is the process of judging, appraising, or determining a program's worth, value, and quality. It entails comparing the current situation to the past in order to determine the extent to which the set goals have been met (Rossi, Lipsey & Henry, 2018). Monitoring and evaluation have been utilized as a project management tool around the world for decades. Monitoring and evaluation have supported Organizations in identifying problems and their causes, as well as suggesting potential solutions. Organizations that do not have strong M&E processes, on the other side, have failed. As a result, even if there is insufficient information on this, M&E can have an impact on project performance (Kamau & Mohamed, 2015).

Developing countries conduct regular monitoring activities, which range from extensive national assessment systems in countries like India and Malaysia to simple monitoring of chosen projects in many African and Middle Eastern countries. It is critical to concentrate and improve monitoring and evaluation capabilities across all government areas (Matthew & Olatunji, 2016). Bellion, 2020 states that status reporting, progress assessment, and forecasting are all M&E methods used on successful projects in Kenya. Success reports for projects provide data on the project's scope, cost, schedule, resources, quality, as well as risk, which can be used as inputs for other processes.

According to Velayuthan, 2015, Monitoring and evaluation techniques in Health Programs can help address challenges such as insufficient capacity-building programs and weak accountability systems. In Sri Lanka, donors utilize their own systems instead of government systems to ensure accountability. They emphasize increasing local demand for assessment, focusing on utilization and addressing concerns related to skills, procedures, methodology, and data systems. For an M&E system to be effective, it is important to plan ahead. Velayuthan further supports this notion by stating that a well-designed M&E plan encourages project stakeholders to engage in M&E activities before project implementation. Therefore, it is important to outline the specifics of monitoring and evaluation within a project as early as possible, and this information should be incorporated into an M&E strategy. By feeding project information into the M&E practice, project accountability can be better tracked and improved.

Monitoring and evaluation (M&E) in health programs may face credibility issues if solely conducted by government agencies without prior verification and authentication. This contradicts the theory of change, which emphasizes the importance of checking implementation for quality to distinguish between implementation failures and theory failures. In Burundi, M&E is

incorporated into the Vision 2025 development framework, leading to improved practices through localized monitoring and the development of synergies across different institutional structures within the government (John & Khilesh, 2018). Monitoring and evaluation (M&E) in Uganda is closely tied to the government's need to demonstrate performance in Health Programs and responsiveness to citizens' demands, serving as an indicator of effective governance. The Office of the Prime Minister (OPM) houses the M&E section responsible for conducting M&E activities. Additionally, there is a growing presence of civil society evaluative practices through national and international NGOs working alongside the government. One of the barriers in Uganda's M&E landscape is the limited demand for M&E products that can support decision-making. Another challenge is the need to foster a culture among managers that utilizes M&E data to enhance performance (Sugut & Rambo, 2017).

In Kenya, project and program-based M&E have been in place since the 1980s, but capacity and infrastructural constraints persist during project implementation. The introduction of Monitoring and Evaluation in Kenya's 2010 Constitution has created opportunities to strengthen M&E practices. However, it also poses risks, particularly regarding the accountability mechanisms of devolved units (John & Khilesh, 2018). The development of a comprehensive Monitoring and Evaluation (M&E) system began with the district focus for rural development in 1982 and continued with the Poverty Reduction Strategy Paper (PRSP) in 2000. Initially, M&E primarily focused on national-level programs funded by development partners. However, with the introduction of the Economic Recovery Strategy for Wealth and Employment Creation (ERS), there was a recognized need for a robust national M&E system and its institutionalization (Monitoring and Evaluation Department, 2019).

Statement of the Problem

In Kakamega County, Kenya, tuberculosis (TB) remains a significant public health challenge despite substantial investments in TB control initiatives. Statistical data from the Kenya National TB Control Program (NTP) reveal a persistent TB burden, with an average annual TB incidence rate of 300 cases per 100,000 population over the past five years (Kenya Ministry of Health, Annual TB Reports, 2016-2020). This alarming statistic underscores the pressing need to examine the effectiveness of existing monitoring and evaluation (M&E) practices in TB control programs within the county. In addition, treatment success rates among TB patients in Kakamega County present a concerning trend. Despite efforts to improve treatment outcomes, statistical data from the Kakamega County Health Department indicate that the treatment success rate has consistently remained below the national target of 90%. Over the past three years, the average treatment success rate in Kakamega County has been reported at 75%, suggesting potential shortcomings in M&E practices that may hinder program effectiveness (Kakamega County Health Department, TB Treatment Data, 2019-2021).

Moreover, analysis of TB diagnostic coverage in Kakamega County reveals disparities between active case finding and passive case detection strategies. While passive case detection remains the predominant mode of TB diagnosis, active case finding initiatives have shown promising results in identifying previously undetected TB cases. World Health Organization (WHO) TB Surveillance Reports demonstrate an average increase of 20% in TB case detection rates through active case finding campaigns over the past two years, highlighting the importance of proactive M&E strategies in improving diagnostic coverage (WHO, TB Surveillance Reports, 2020-2021). Monitoring and evaluation techniques play a pivotal role in determining the performance of projects (Tengan, Aigbavboa & Thwala, 2018). Despite its importance, Kenya's county governments have been grappling with inadequate monitoring and evaluation practices, primarily due to subpar standards (KNBS, 2019). Alarmingly, 49% of counties, including Kakamega county, neither shared their success stories nor updated the e-CIMES platform by the end of

2022/2023. These challenges in monitoring and evaluation reporting could significantly impact decision-making processes within the counties.

In 2015, a joint evaluation conducted by USAID, PEPFAR, and MEASURE assessed the Monitoring and Evaluation (M&E) capacities in 17 Kenyan counties. The findings of this evaluation highlighted three significant gaps within Kakamega county; insufficient structures in place to support the implementation of M&E activities, lack of technical capacity to facilitate and enhance M&E functions and absence of a coordinated system that effectively connected data generation to its practical utilization. Subsequently, in a separate endline study conducted by USAID and MEASURE in 2017, significant gaps related to funding for M&E functions were identified within Kakamega county. Additionally, it was observed that there was a deficiency of a standardized curriculum to support the development of technical capacity in M&E. Also, no improvements were noted in various areas, the formulation of annual costed health sector M&E work plans, advocacy, communication, cultural behavior initiatives, and the management of national and county databases.

Several recent studies have explored the impact of monitoring and evaluation (M&E) practices on health project performance. Kiplangat (2021) investigated non-governmental maternal health programs in Nairobi County, finding that human resource capacity, M&E plans, stakeholder participation, and M&E information systems significantly influence program performance. Similarly, Njoroge (2021) studied the Linda Mama Health Project in Lurambi, Kakamega County, demonstrating that stakeholder involvement enhances the implementation and effectiveness of maternal health programs. Additionally, Gachanja and Nduta (2021) focused on health projects under the Center for Health Solutions (CHS) in Nyeri County, Kenya, revealing a positive relationship between capacity building for M&E, planning, M&E practices, data quality, and project performance. However, there is a scarcity of research on M&E and the performance of TB control programs in Kakamega County. This study aimed to address this gap by examining how M&E practices influence the performance of TB control programs in the region.

General objective
The main objective of this study was to determine the influence of monitoring and evaluation practices on performance of TB control programs in Kakamega County, Kenya.

Specific objectives
  i.   To determine the influence of M&E planning on the performance of TB Control programs.
  ii. To establish the influence of M&E capacity building on the performance of TB

Theoretical framework

Management Theory
A mechanical engineer, Mr. Frederick Winslow Taylor, in 1909, authored the scientific management principles. The theory proposed that work and tasks need to be simplified in order to enhance productivity. His theory goes farther to argue that unlike in the 20th century when most companies used a dictatorial approach, employees and managers should work in synchrony. Winslow developed four management principles that form the basis of his theory, that is, utilizing scientific methods to ascertain the most efficient task completion method, monitor employees to determine performance and give guidance to the less efficient ones, assign duties which suit an employee's skill set and motivation level and management focus on planning and professional improvement with employees focusing on assigned tasks.
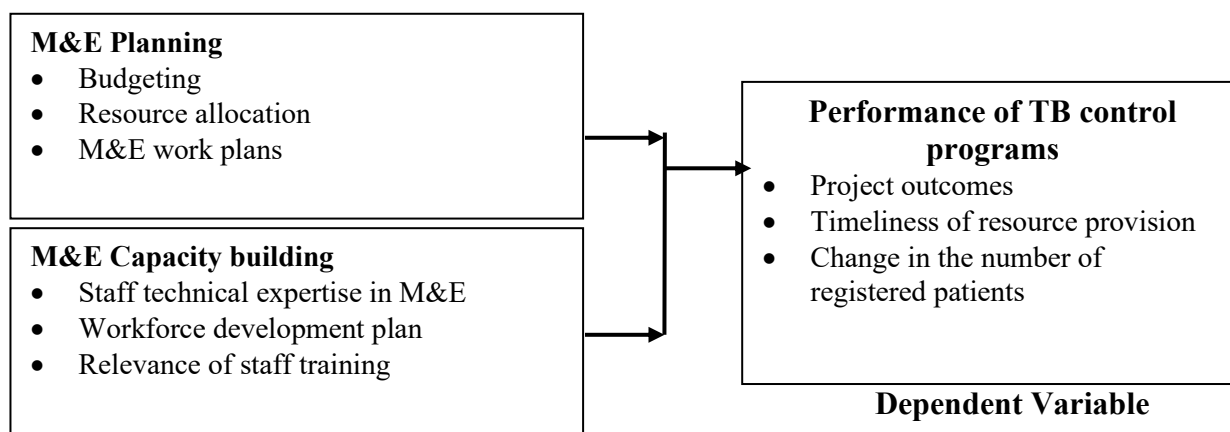
Over the years, the theory has immensely evolved. It ascertains whether an organization has been designed in a way that it is capable of achieving its intended vision using planning and management modalities that maximize utilization of available resources and capacity. The theory is a guidance theory in that is depicts the capacity of an organization to accomplish activities and tasks within a stipulated timeline. It also guides on areas which need emphasis during planning and management for an organization (Donaldson, 2012). This theory is linked to the variable of M&E planning.

Human Capital Theory
The term "human capital" (HC) was coined by Schultz in 1961. It refers to the knowledge, skills, and capabilities of the personnel working in an organization. According to Howard, Richard, and Fermin (2013), HC encompasses the staff, their productivity, and their potential within the organization. Staff potential is significant as it indicates their ability to develop their skills and competencies over time. Human capital plays a direct role in the production process by enabling adaptation to the ever-changing environment. Monitoring and evaluation (M&E) is a dynamic process that necessitates practitioners to possess the necessary and evolving skill set. The concept of human capital assumes that training is targeted at the organization's needs, aiming to enhance production levels and justify the investment in training. Organizations that prioritize employee capacity development are likely to improve their understanding of roles, responsibilities, and obligations, thereby enhancing the functioning of M&E operations. This is crucial for employees to have a clear understanding of the desired project outcomes and the requirements for effective monitoring and reporting. This theory is associated with the variable of staff capacity building.

Conceptual Framework
A conceptual framework is a research instrument that helps in the development and communication of knowledge and understanding of the topic being investigated. A conceptual framework is used in research to provide a preferred method to an idea or thinking, as well as to explain alternative courses of action (Kivunja, 2018).

M&E Planning
- Budgeting
- Resource allocation
- M&E work plans

M&E Capacity building
- Staff technical expertise in M&E
- Workforce development plan
- Relevance of staff training

Performance of TB control programs
- Project outcomes
- Timeliness of resource provision
- Change in the number of registered patients

Dependent Variable

Figure 2.1: Conceptual Framework,

Monitoring and Evaluation Planning
While commencing a project, planning in M&E is key because it gives a detailed direction for what the project intends to achieve. The participation of stakeholders, allocation of a budget and resources and the utilization of M&E results are key components that need to be factored while planning in M&E. When planning is carried out effectively, then the chances of the project performing well are increased. The involvement of stakeholders is a factor that is commonly left

out and this in turn affects the performance of the project. When stakeholders are involved, their participation during planning for M&E results in development of strategies which explicitly mirror their priorities and needs (Izurieta, et al., 2019). Mugo, 2016, conducted a study on Monitoring and Evaluation of development projects and the economic growth and realized that the sum of money allocated for M&E activities was a positive determinant of the M&E system implemented in projects that are developmental in nature. Additionally, increasing the sum of money allocated for M&E increases the likelihood of M&E system implementation in projects that are developmental in nature.

In planning for M&E, there must be accurate estimation of resources to prevent running short on the same prior to completion of the implementation phase. It is noted that the unavailability of sufficient resources has a negative impact on the performance of projects in the health sector (Sanganyi, 2016). A study done by Ongondo in 2017 states that in planning for M&E, controlled resource distribution needs to be done in an organization to assist in project implementation. In a different study in 2018, Nduta found out that some firms which experience low project performance do so due to lack of an M&E budget. This is irrespective of the firm having appropriate funding planned for the project. An M&E plan that is effectively written acts as a motivation tool for the stakeholders of a project to activities directed towards monitoring and evaluation prior to commencement of project execution. Consequently, it is important to clarify how M&E is supposed to work inside a project in good time. It is also key to provide details that will reflect on the M&E strategy (Velayuthan, 2015).

In a study conducted in Malaysia in 2016, Jatarona, Yusof, Ismail and Saar realized that money as well as time are the two most important components for every construction contract. For an allocated sum of money, someone working for a project will be required to deliver results in a timeframe that is predetermined. Sometimes, for projects supported by the government, payments could be delayed resulting in delayed project completion. In a different study in 2019, Jagongo and Mwangi concentrated on the effects of proper allocation of resources on judicial work in Embu, Kenya. This foundation of this study was agenda-based budget theory, progressive public expenditure theory, basic agency budget theory and public administration budget theory. The budget allocation was then measured using the cost of project evaluation. The results showed that proper distribution of money leads to functionality of a system.

Monitoring and Evaluation Capacity Building

Health projects cannot proficiently operate minus an M&E team which cannot perform monitoring and evaluation functionally and be involved in the necessary capacity and skills of the team (Wanja, 2017). These results are validated by Mibey in 2016, who did an evaluation on elements affecting application of M&E practices in a project (Kazi kwa Kijana) in Kakamega County and found out that competency and skills need to be considered as a crucial aspect of high project performance and success. Professionals working in the field of health project management, for instance, health project officers, M&E officers, evaluators and health project staff, require M&E training that is specialized often. In as much as having unwavering and sufficient staff for M&E is key, it is also vital to have staff that possess correct skills for health-related projects for guaranteed performance and success (INTRAC, 2017). The provision of training and development offers project managers and M&E staff for health-related projects technical skills which in turn increases satisfaction on the job and is reflected in high project performance (Magaku, 2010).

Bailey, Farmer, Jessop and Jones (2018) assert that after the identification of resources for project implementation as well as completion of operational design for monitoring and evaluation, the next step is identifying employees for training to actualize M&E. That aside,

areas of training together with the duration of training need to pointed out. Usually, the direction taken during training of different professionals that need to be involved in monitoring and evaluation is dependent on the size of a firm or project to be executed as well as resources that are available together with the years of experience and knowledgeability of organizational employees (Global Environmental Facility, 2017).

Bennett, Singh, Ozawa, Tran, and Kang (2018) conducted a study in India which confirmed that the team tasked with conducting monitoring and evaluating normally possesses crucial power which drives a project. This finding is further supported by Edge and Hoffman (2016) in a study identifying the impact of recruiting M&E personnel in Australia, Canada, the UK, and the USA. The findings of the researchers indicate that the managers of a project should acknowledge the importance of building the capacity of the M&E team in order to achieve success and high performance in projects in the health sector. Alex (2016), did a study on the assessment of performance of M&E systems in South Sudan. This study recognized that developing the capacity M&E team in health projects increases the likelihood of the success of the health project. Similarly, (Idoro 2019) in a study on the effects of M&E practices in Nigerian Construction Companies ascertains that befitting M&E practices contribute directly to the success of a project as well as high performance therefore justifying the need to build the capacity of M&E staff for accomplishment of health project objectives.

Ongoing training of the different implementers of M & E in a project guarantees that they are well equipped with emerging as well as changing trends in the entire process of M & E resulting in effectual implementation and proper performance of projects (Ling, 2018). A study by Baron, in 2017, outlines the importance of assessing training needs at each step of implementation for a project. In the argument, Baron indicates that there are varying M&E needs from one cycle to another. Moreso, if the project is big, the results envisioned at implementation need to communicate the kind of M&E to be carried out together with the type of training. Additionally, the professional qualifications of the trainees, their number and the duration of training are also among others factors determined by the level and size of the project.

Empirical Review
Monitoring and Evaluation Planning and Project performance
In 2020, Adhiambo assessed the effects of monitoring and evaluation planning on the Implementation of mariculture projects in Mombasa, Kwale and Kilifi counties. A cross sectional research design was used and questionnaires used for data collection. The findings indicate that there is a significant relationship that is positive between monitoring and evaluation planning and the implementation of mariculture projects. Simwaka (2020) conducted a study the influence on monitoring and evaluation on project performance: a case study of Howard University, Zambia. The study used questionnaires, interviews and observation for data collection. The study population included 50 staff working at a DSD project that had been completed. After random sampling, 15 respondents were obtained to represent the entire study population. The study found that a positive correlation existed between planning and project performance.

Urbanski and Haque (2019) examined the moderating role of risk management and project success in the construction business of the UK and Pakistan. They used purposive sampling to collect data from 152 project managers. Questionnaires were used to collect the data and the findings show that project planning had an effect that is statistically significant on the success of projects. Kihuha (2018) studied monitoring and evaluation practices and performance of global environmental facility projects in Kenya. A descriptive design was used for this study and a semi-structured questionnaire used for data collection. The study concluded that M&E planning

had a positive significant effect on the performance of global environmental facility projects in Kenya.

A study was done in 2018 by Njoroge studying the M&E strategies influencing the performance of Dairy Primary Cooperative Societies in Murang'a county in Kenya. The study population was made up of members of the M&E team as well as the board of management members. For data collection, questionnaires were used and the results indicate a positive and significant relationship between M&E planning strategy and performance of dairy primary cooperatives. Hubert and Mulyungi (2018) conducted a study seeking to determine the influence of M&E planning on project performance in Rwanda. Their study adopted a descriptive research design. Th population of study had 72 NGOs and the finance managers and M&E specialists were targeted. Purposive sampling was used and 144 respondents were obtained. Data was collected using the organizations' financial reports and questionnaires. The findings indicate that all NGOs were privy to M&E plans and a significant relationship exists between M&E planning and project performance.

Monitoring and Evaluation Capacity Building and Project Performance
In 2019, Kithinji conducted a study on evaluation capacity building and Improvement of Monitoring and Evaluation practice among Non-Governmental Organizations in Central Eastern Counties of Kenya. A descriptive survey that used stratified random sampling was done. The study revealed that organizations in the region had a number of unstructured activities which were being done in varying degrees going on. These activities were in line with building evaluation capacity and had an influence on M&E practice. Maijo (2020) assessed the effectiveness of monitoring and evaluation systems on the sustainability of community-based projects in Tanzania. Their study utilized a descriptive survey design. Purposive sampling was used and 80 staff responsible for overseeing health project sustainability identified. Questionnaires and interview guides were administered during data collection. The study concluded that staff capacity building during the project life cycle enhanced sustainability of health projects.

Wachamba (2013) studied the effect of staff training on project implementation in NGOs in Nairobi County. The study had a study population of 8,503 and after stratified sampling, the sample size was 200 NGOs that had successfully implemented projects. Questionnaires were used to collect data. Findings indicate that capacity building in M&E practice made a huge contribution in enhancement of successful project implementation. In 2015, Lesinko studied the factors influencing performance of monitoring and evaluation of constituency development fund projects in Narok East sub-county Kenya. The study utilized a descriptive research design and a target population was 138 respondents out of which 122 were obtained using simple random sampling. Questionnaires were used to collect data. The findings indicate that the training level on M&E was a key aspect in performance of CDF projects. A significant correlation was also found between staff capacity building and CDF project performance.

Wambua (2019) conducted a study on monitoring and evaluation practices and performance of county funded education projects in Makueni county, Kenya. The influence of M&E staff training on performance of projects was one of the objectives of study. The study adopted a descriptive survey as the study design and targeted 31 county funded education projects in Makueni county. A stratified random sampling technique was utilized for selection of the data collection sample. Primary data was collected by the use of a semi-structured questionnaire. The results indicated that in all sub county projects, M&E teams underwent M&E training and this training had a statistically significant correlation with project performance.

RESEARCH METHODOLOGY

A research design refers to an arrangement of conditions for data collection and analysis in a way that aims to combine relevance of a research with its purpose (Kothari, 2004). This study utilized a descriptive research design. Descriptive study systematically discovers the who, where, what, and how of a wonder which is the intention of this research (Mugenda & Mugenda, 2003). Purposive sampling was used to recruit participants of the study. The criteria for inclusion in the study was that one had to be a health provider (Nurse, laboratory technician, doctor or clinical officer) working at the TB clinic of a subcounty hospital or the county referral hospital in Kakamega County.

This research was based on TB control programs in Kakamega County. Since the target population was small, all the participants from TB control programs were censured as study respondents. Census allows studying of the whole population, reduction of the sample error to provide an accurate measure of the population under study. The population breakdown was as follows:

Table 1: Target Population

No	Placement	Nurses	Laboratory Technicians	Clinical Officers
1	Butere Sub County Hospital	1	2	1
2	Mumias Level IV hospital	1	2	1
3	Mumias East Sub County Hospital	1	2	1
4	Matungu Sub County Hospital	1	2	1
5	Likuyani Sub County Hospital	1	2	1
6	Malava Sub County Hospital	1	2	1
7	Khwisero Sub County Hospital	1	2	1
8	Lurambi Sub County Hospital	1	2	1
9	Iguhu Sub County Hospital	1	2	1
10	Shinyalu Sub County Hospital	1	2	1
11	Lumakanda Sub County Hospital	1	2	1
12	Navakholo Sub County Hospital	1	2	1
13	Mautuma Sub County Hospital	1	2	1
14	St Mary's Mumias	1	2	0
15	St Elizabeth Mukumu	1	2	0
16	Kakamega County Referral Hospital	2	2	1
17	TB control programs coordinator	1		
	Total (65)	**19**	**32**	**14**

Studies indicate that a sample greater than 30 was considered a large sample set which is distributed normally and gives bigger room to understand the features of a population as well as offer room to generalize the results as much as it reduces the extent of sampling errors (Sharma, 2020). Form the table above, the total target population for the study was 65 which was still considered the study sample.

Data was collected using self-administration of the questionnaires. A letter was obtained from the department as JKUAT as authorization for research. Further to this, a research license was obtained from National Commission for Science, Technology and Innovation (NACOSTI) and the county government of Kakamega prior to commencing data collection. During the course of the study, informed consent was sought from the participants. Confidentiality and honesty were

also assured in presentation of the results ensuring no falsification or misrepresentation of the results.

Piloting was done on 10% (6 participants) of the target population from TB control programs. The 6 staff were the TB programs project coordinator, 2 laboratory technicians, a nurse and clinical officer from Kakamega County Referral Hospital and 1 clinical officer from Lurambi Sub County Hospital. These six have been selected due to accessibility. Those participating in the pilot study will be excluded from the data collection process so as to test the validity and reliability of the questionnaire.

Data Analysis and Presentation

The researcher used SPSS Version 28 to analyze quantitative data analysis techniques, that is, both descriptive and inferential data analysis to measure the variables as shown;

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \varepsilon;$$

Where:

y- Project Performance

B_0- the regression constant

β_1, and β_2- coefficients of independent variables

x_1- M&E planning

x_2- M&E Capacity Building

ε- Error term.

RESEARCH FINDINGS AND DISCUSSION

Descriptive Statistics Analysis

In this section, the study presents descriptive statistics analysis based on the data collected for the study. Descriptive statistics offer a summary of the main characteristics of the dataset, providing insights into central tendency, variability, and distribution of the variables under investigation. The analysis includes measures such as mean, and standard deviation to describe the data comprehensively.

M&E Planning

The first objective of the study was to determine the influence of M&E planning on the performance of TB Control programs. The respondents therefore gave their level of agreement or disagreement with various statements on M&E planning. Table 4.1 presents summary of the findings obtained.

Table 1: Descriptive Statistics on M&E Planning

Statements	Mean	Std. Dev.
Any challenges pertaining to resource allocation are resolved in good time	3.989	0.707
The budget closely aligns with the overall objectives and strategies of the TB control program	3.922	0.842
The county government disseminates a work plan for TB control programs	3.901	0.996
Staff are knowledgeable on key performance indicators used to measure the success of TB Control Programs	3.881	0.94
The budget is flexible in adapting to unforeseen circumstances or changes in TB prevalence	3.836	0.844
M&E plans clearly defines the roles of the staff in TB control programs	3.836	0.665
Aggregate Score	**3.894**	**0.832**

Based on the findings, respondents agreed on average that any challenges pertaining to resource allocation are resolved in good time (M= 3.989, SD= 0.707); that the budget closely aligns with the overall objectives and strategies of the TB control program (M= 3.922, SD= 0.842); and that the county government disseminates a work plan for TB control programs (M= 3.901, SD= 0.996). Respondents also agreed that staff are knowledgeable on key performance indicators used to measure the success of TB Control Programs (M= 3.881, SD= 0.94); that the budget is flexible in adapting to unforeseen circumstances or changes in TB prevalence (M= 3.836, SD= 0.844); and that M&E plans clearly defines the roles of the staff in TB control programs (M= 3.836, SD= 0.665).

The aggregate mean of 3.894 (SD= 0.832) supports the findings that M&E planning affects the performance of TB Control programs. This finding resonates with the study conducted by Adhiambo (2020), which assessed the effects of M&E planning on mariculture projects, and Simwaka (2020), who studied the influence of M&E on project performance at Howard University in Zambia. Both studies reported positive correlations between M&E planning and project outcomes, indicating that thorough planning processes contribute to more effective implementation and overall success of programs. The aggregate mean suggests that strong M&E planning can similarly enhance the performance of TB control initiatives, ensuring that resources are efficiently allocated, interventions are effectively implemented, and desired outcomes are achieved.

M&E Capacity Building

The second objective of the study was to establish the influence of M&E capacity building on the performance of TB control programs. Respondents therefore gave their level of agreement or disagreement with various statements on M&E capacity building. Table 4.2 presents summary of the findings obtained.

Table 2: Descriptive Statistics on M&E Capacity Building

Statements	Mean	Std. Dev.
Project staff are regularly trained to equip them with technical expertise necessary to carry out M and E for TB Control programs	3.993	0.831
Staff capacity needs assessments are done to ensure the right skills are acquired to manage M&E activities	3.929	0.821
All skills pertaining to M&E have adequately addressed through training	3.855	0.642
The methods employed for staff training were satisfactory	3.846	0.768
M&E implementation in the County is largely determined by technical skills of staff	3.792	0.958
Aggregate Score	**3.883**	**0.804**

The findings show that the respondents agreed on average that project staff are regularly trained to equip them with technical expertise necessary to carry out M and E for TB Control programs (M= 3.993, SD= 0.831); that staff capacity needs assessments are done to ensure the right skills are acquired to manage M&E activities (M= 3.929, SD= 0.821); and that all skills pertaining to M&E have adequately addressed through training (M= 3.855, SD= 0.642). They further agreed that the methods employed for staff training were satisfactory (M= 3.846, SD= 0.768); and that M&E implementation in the County is largely determined by technical skills of staff (M= 3.792, SD= 0.958).

The aggregate mean of 3.883 (SD= 0.804) indicating agreement among respondents regarding the influence of monitoring and evaluation (M&E) capacity building on the performance of TB control programs is consistent with findings from two relevant literature sources. Kithinji's (2019) study on evaluation capacity building among NGOs in Kenya's Central Eastern Counties

highlighted the importance of structured capacity-building activities in enhancing M&E practices. Similarly, Wachamba's (2013) research on the effect of staff training on project implementation in Nairobi County NGOs emphasized the significant contribution of capacity building in M&E to the successful execution of projects. Both studies underscored the positive impact of capacity-building initiatives on improving M&E competencies among staff, aligning with the aggregate mean, which suggests that investing in capacity building can indeed enhance the performance of TB control programs by equipping personnel with the necessary skills and knowledge to effectively monitor and evaluate program activities.

Performance of TB control Programs

The main objective of the study was to determine the influence of monitoring and evaluation practices on performance of TB control programs in Kakamega County, Kenya. Respondents were therefore asked to indicate the level to which they agree on average with statement on performance of TB control programs in Kakamega County, Kenya. Table 4.3 presents summary of the findings obtained.

Table 3: Descriptive Statistics on Performance of TB control Programs

Statements	Mean	Std. Dev.
There has been a noticeable change in TB recovery rates within the past five years	3.972	0.71
There are community-driven initiatives that have positively impacted service utilization	3.879	0.911
Periodic evaluations are conducted to assess the overall effectiveness of TB programs	3.857	0.827
There is a supervisory mechanism in place in Kakamega county which ensures appropriate drug forecasting and timely procurement	3.822	0.815
There is availability of TB management consumables (drugs and related commodities) all year round	3.803	0.853
There is evidence of proper TB service utilization by the intended beneficiaries	3.800	0.812
Aggregate Score	**3.856**	**0.821**

The findings show that the respondents agreed that there has been a noticeable change in TB recovery rates within the past five years (M= 3.972, SD= 0.71); that there are community-driven initiatives that have positively impacted service utilization (M= 3.879, SD= 0.911); and that periodic evaluations are conducted to assess the overall effectiveness of TB programs (M= 3.857, SD= 0.827). They were further in agreement that there is a supervisory mechanism in place in Kakamega county which ensures appropriate drug forecasting and timely procurement (M= 3.822, SD= 0.815); that there is availability of TB management consumables (drugs and related commodities) all year round (M= 3.803, SD= 0.853); and that there is evidence of proper TB service utilization by the intended beneficiaries (M= 3.8, SD= 0.812).

The findings, indicating agreement among respondents on various aspects of TB control program performance, align with relevant literature highlighting the importance of community-driven initiatives and effective program evaluation mechanisms. Maina and Kimutai's (2018) study on stakeholder management in open-air markets in Kenya emphasized the positive impact of community-driven initiatives on project performance, echoing the respondents' perception of the positive impact of such initiatives on service utilization. Additionally, Njama's (2015) investigation into the determinants of the effectiveness of monitoring systems for projects underscored the importance of periodic evaluations in assessing program effectiveness. These

findings support the respondents' agreement that periodic evaluations are conducted to assess the overall effectiveness of TB programs. Together, these findings suggest that community-driven initiatives and periodic evaluations play crucial roles in ensuring the effectiveness and sustainability of TB control programs, as perceived by the respondents.

Correlation Analysis

The study computed correlation analysis to test the strength and the direction of the relationship that exists between the dependent and the independent variables. The correlation values range from 0 to 1; if the correlation values are $r = \pm0.1$ to ±0.29 then the relationship between the two variables is small, if it is $r = \pm0.3$ to ±0.49 the relationship is medium, and when $r = \pm0.5$ and above there is a strong relationship between the two variables under consideration. Table 4 presents correlation analysis findings for this study.

Table 4: Correlation Analysis

		Performance of TB control Programs	M&E planning	M&E Capacity Building
Performance of TB control Programs	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	53		
M&E planning	Pearson Correlation	.742**	1	
	Sig. (2-tailed)	.000		
	N	53	.130	
M&E Capacity Building	Pearson Correlation	.713**	.353	1
	Sig. (2-tailed)	.000	53	
	N	53	53	53

The correlation analysis reveals significant relationships between various monitoring and evaluation (M&E) practices and the performance of tuberculosis (TB) control programs. Firstly, the performance of TB control programs exhibits a strong positive correlation with M&E planning ($r = 0.742$, $p < 0.05$), indicating that effective planning in monitoring and evaluation is associated with better performance outcomes in TB control. This finding suggests that comprehensive M&E planning processes, such as setting clear objectives, defining indicators, and designing evaluation frameworks, are crucial for optimizing the effectiveness of TB control interventions. This aligns with the study conducted by Adhiambo (2020), which found that M&E planning positively influences project implementation outcomes.

Secondly, there is a significant positive correlation between the performance of TB control programs and M&E capacity building ($r = 0.713$, $p < 0.05$). This indicates that investing in capacity building initiatives to enhance M&E competencies among healthcare professionals contributes to improved performance in TB control. The findings are consistent with Kithinji's (2019) study, which highlighted the positive impact of evaluation capacity building on monitoring and evaluation practices among NGOs in Kenya's Central Eastern Counties.

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables and the dependent variable. This study assessed the influence of monitoring and evaluation practices on performance of TB control programs in Kakamega County, Kenya.

Model Summary

The model summary provides an overview of the regression model's performance in explaining the variability in the dependent variable (performance of TB control programs in Kakamega

County, Kenya) based on the predictors included in the model: M&E planning and M&E capacity building). Table 5 presents the findings.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.837[a]	.701	.700	.39201

a. Predictors: (Constant), M&E planning, M&E Capacity Building

The model summary indicates that the predictors, including M&E planning, and M&E capacity building, collectively explain a substantial proportion of the variance in the performance of tuberculosis (TB) control programs. The coefficient of determination (R Square) value of 0.701 suggests that approximately 70.1% of the variability in TB control program performance can be accounted for by the combined influence of these M&E practices. Moreover, the adjusted R Square value of 0.700, which adjusts for the number of predictors in the model, indicates that about 70% of the variance in TB control program performance is explained when considering the complexity of the model. These findings suggest that the collective impact of planning and capacity building significantly contributes to the performance of TB control programs, highlighting the importance of comprehensive M&E systems in optimizing program effectiveness and health outcomes.

Analysis of Variance

The ANOVA table provides information about the overall fit of the regression model and whether the predictors included in the model significantly contribute to explaining the variance in the dependent variable, which in this case is the performance of TB control programs in Kakamega County, Kenya. In this study, the significance of the model was tested at 5% confidence interval.

Table 6: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	15.914	2	7.957	53.76	.000[b]
1	Residual	7.376	50	.148		
	Total	23.290	52			

a. Dependent Variable: Performance of TB control Programs
b. Predictors: (Constant), M&E planning, and M&E Capacity Building

The ANOVA results indicate that the regression model, which includes M&E planning and M&E capacity building as predictors, significantly explains the variance in the performance of tuberculosis (TB) control programs. The regression model accounts for a substantial portion of the variability in TB control program performance, as evidenced by the significant F-statistic of 25.890 (p < 0.05). This indicates that the predictors collectively contribute to explaining the differences in TB control program performance. These findings indicate that the regression model provides a good fit to the data and underscores the importance of monitoring and evaluation practices, including planning and capacity building, in influencing the performance of TB control programs.

Beta Coefficients
Table 7: Beta Coefficients of Study Variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.353	.357		.989	.328
1 M&E planning	.385	.133	.396	2.894	.006
M&E Capacity Building	.362	.155	.170	2.335	.030
a. Dependent Variable: Performance of TB control Programs					

The fitted regression model was as follows:

$$Y = 0.353 + 0.385 X_1 + 0.362 X_2$$

In the regression model examining factors influencing the performance of tuberculosis (TB) control programs, monitoring and evaluation (M&E) planning emerged as a significant predictor. The beta coefficient value for M&E planning was 0.385, with a significance level of 0.006. This indicates a positive and statistically significant relationship between M&E planning and TB control program performance. The finding suggests that effective planning in M&E activities, such as setting objectives and designing evaluation frameworks, is associated with improved performance outcomes in TB control programs. This aligns with Adhiambo's (2020) study, which demonstrated a positive correlation between M&E planning and project implementation outcomes in mariculture projects.

Similarly, M&E capacity building were found to significantly influence the performance of TB control programs. The beta coefficient value for M&E capacity building was 0.362, with a significance level of 0.030. This indicates a positive and statistically significant relationship between capacity building initiatives and TB control program performance. The finding suggests that investing in capacity building activities to enhance M&E competencies among healthcare professionals contributes to improved performance in TB control. This finding resonates with Kithinji's (2019) research on evaluation capacity building among NGOs in Kenya's Central Eastern Counties, highlighting the positive impact of capacity building on monitoring and evaluation practices.

Conclusion
The study findings reveal that M&E planning significantly influence the performance of TB control programs in Kakamega County. Through correlation analysis, it was established that there is a strong positive correlation between M&E planning and TB program performance. Furthermore, regression analysis indicated that M&E planning had a significant positive beta coefficient, suggesting that as M&E planning improve, TB program performance also increases. Therefore, based on these findings, the study concluded that effective M&E planning, such as budgeting, resource allocation, and M&E work plans, are crucial for enhancing the performance of TB control programs in Kakamega County.

The results indicate a significant relationship between M&E capacity building and the performance of TB control programs. Correlation analysis revealed a strong positive correlation between M&E capacity building and TB program performance. Additionally, regression analysis showed a significant positive beta coefficient for M&E capacity building, suggesting that improvements in capacity building initiatives lead to better TB program performance. Therefore, the study concluded that investing in activities such as regular staff training, conducting capacity

needs assessments, and addressing M&E skill gaps contributes positively to the effectiveness of TB control programs in Kakamega County.

Recommendations

Based on the findings, it is recommended that Kakamega County enhances its M&E planning to further improve the performance of TB control programs. To achieve this, the county should prioritize activities such as regular review and adjustment of resource allocation processes, ensuring alignment of budgets with program objectives, and enhancing the dissemination of comprehensive work plans for TB control initiatives. Additionally, fostering a culture of staff involvement in M&E planning processes and clearly defining roles and responsibilities within M&E plans can contribute to better program outcomes.

To enhance the performance of TB control programs, Kakamega County should focus on strengthening M&E capacity building. This can be achieved by investing in regular and tailored training programs for project staff to equip them with the necessary technical expertise for effective monitoring and evaluation. Conducting regular capacity needs assessments will help identify skill gaps and tailor training programs accordingly. Furthermore, the county should ensure that all aspects of M&E, including data collection, analysis, and reporting, are adequately addressed through training initiatives.

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