



**PROGRAM COST MANAGEMENT PRACTICES AND PERFORMANCE OF
DONOR FUNDED HEALTH PROGRAMS IN SIAYA COUNTY**

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ABSTRACT

The purpose of this study was to determine the extent to which the performance of donor-funded health initiatives is affected by the degree to which program cost control and budgeting are implemented. A significant study gap existed in the area of understanding how the practices of financial management influenced the effectiveness of these programs. This gap was reflected by the link between important factors, which included program cost control, program leadership, and budgeting. For the purpose of enabling the researcher to collect data on processes, circumstances, and viewpoints at a particular moment in time through the utilization of questionnaires, the study utilized a descriptive research design. In this particular study, the population of interest consisted of program managers, finance officers, and health administrators from 220 health institutions in Siaya County, Kenya, which were sponsored by donors. In order to pick a sample size of 111 health institutions, which is equivalent to fifty percent of the entire population, stratified sampling was utilized. This was done since the research population was not heterogeneous. The delivery of structured questionnaires to staff members who were involved in program management and financial control was the primary method of data collection via which primary data was acquired. In the study, the reliability of the research instrument was evaluated with the use of the Cronbach alpha coefficient. The data was analyzed with SPSS version 26, which offered data loading and analysis tools that were simple to use. After the data had been gathered, it was edited, handled blank responses, coded, categorized, and then entered into the Statistical Package for Social Sciences (SPSS) computer program for analysis. This was done in preparation for the study that was to follow. For the purpose of producing frequencies, the SPSS program version 28 was utilized. Descriptive and inferential statistics were utilized in order to arrive at inferences and generalizations concerning the population. For the purpose of illustrating the significance of the link between the independent factors and the dependent variable, a multiple regression model was utilized. The study demonstrated that the operational effectiveness of donor-funded health initiatives in Siaya County, Kenya was highly impacted by accurate budgeting. In addition, the findings recommended that there is a necessity of enhancing change control in order to guarantee the long-term viability and effectiveness of these initiatives. For the purpose of providing policymakers and funders alike with important insights, statistics were created about the percentage of projects that encountered budget overruns, leadership difficulty, and compliance issues.

Key Words: Program Cost Management Practices, Performance, Donor Funded Health Programs, program cost control, budgeting

Background of the Study

Programs are usually started to meet an organization's aims (Rad, 2021). Economic growth depends on infrastructure development, such as road building and maintenance (Mahamid, Bruland, & Dmaid, 2018). Road building has increased worldwide due to highway infrastructure degradation, notably in wealthy nations (Kukkapalli & Pulugurtha, 2021). According to the World Bank (2022), 64.94% of worldwide roads were paved in 2009. In 2016, rural and urban US paved roads reached 94.0% (Kariuki, 2015).

Delays cause many initiatives to exceed time and expense projections. Delays hurt time, cost, quality, and safety (Pollack, 2021). Program managers must consider cost and timelines. Most managers prioritize cost and deadlines. Estimating, planning, and managing program costs throughout the lifetime keeps spending within the agreed budget (Mohamud & Nyang'au, 2020; Njuguna & Kabubo, 2020). Successful program execution requires cost management for resource planning, cost estimates, budgeting, and control (Barnard & Bergerud, 2022).

Statement of the Problem

Cost management enables health sector to forecast future expenses to reduce the likelihood of budget overruns (Mainga, 2017). According to Musau, & Kirui, (2018) many programs stall due to lack of proper program cost management techniques. In a perfect situation, health programs funded by donors in Siaya County would implement strong cost management strategies, guaranteeing effective use of resources, prompt provision of health services, and the successful attainment of program goals. Effective cost management encompasses precise budgeting, appropriate allocation of resources, thorough oversight of spending, and strategic planning to tackle unexpected obstacles. This would result in better health outcomes, increased stakeholder trust, and sustainable health systems that address the needs of the local community.

Nevertheless, the present circumstances illustrate a markedly contrasting scenario. Investigations indicate notable obstacles in managing program costs, including budget overruns, improper allocation of funds, and insufficient financial oversight that impede program effectiveness. For example, Omondi et al. (2022) discovered that 65% of health programs funded by donors in Siaya County faced budget overruns, with an average excess of 25% over the planned budget, attributed to inadequate cost estimation and insufficient compliance with financial guidelines. In a similar vein, a report from the Siaya County Health Department in 2023 pointed out that 40% of health programs did not meet their objectives, primarily due to ineffective resource utilization and inadequate financial accountability mechanisms. The challenges encountered have led to postponed project completion, a decline in the quality of health services, and a weakening of trust among donors and stakeholders.

The disparity exists in the divergence between optimal cost management strategies and the existing methods utilized in donor-funded health initiatives in Siaya County. Although effective cost management is essential for the success of programs, there is a lack of substantial evidence regarding the influence of particular cost management practices like the use of historical data, validation of assumptions, and planning for contingencies on program performance. Previous investigations, including those by Omondi et al. (2022) and the Siaya County Health Department report (2023), have pinpointed the symptoms associated with inadequate cost management; however, they have not thoroughly examined the root causes or the correlation between cost management practices and program performance.

This lack of understanding obstructs the advancement of focused strategies aimed at enhancing cost efficiency and program results. Inadequate management of program costs presents a considerable challenge, as it has a direct impact on the effectiveness of health programs funded by donors, which are essential for meeting the health requirements of the population in Siaya County. The ineffective allocation of resources results in squandered financial resources, unachieved health objectives, and diminished trust from donors, putting future funding at risk.

Furthermore, inadequate cost management practices compromise the sustainability of health programs, rendering communities susceptible to health crises. Statistical evidence highlights the gravity of the situation: immunization rates in Siaya County were recorded at 45%, markedly lower than the national target of 90%, while the maternal mortality rate reached 342 deaths per 100,000 live births, surpassing the national average of 280 (Kenya Demographic and Health Survey, 2023). This study aims to address this gap by investigating the impact of particular cost management practices on program performance, offering evidence-based recommendations to enhance the effectiveness of donor-funded health programs in Siaya County.

Research Objective

The general objective of this study was to determine the relationship between cost management practices on the performance of donor funded health programs in Siaya County

The study was guided by the following specific objectives:

- i. To determine the relationship between Program Budget Accuracy on the performance of donor funded health programs in Siaya County
- ii. To determine the relationship between Program Earned Value on the performance of donor funded health programs in Siaya County

LITERATURE REVIEW

Theoretical Framework

Estimation Theory and Program Budget Accuracy

Estimation Theory, as presented by Kay (1998), centers on the prediction of unknown quantities derived from the data at hand. Ensuring budget accuracy is essential in health projects funded by donors, as it influences financial sustainability, resource distribution, and the overall feasibility of the project. Errors in budgeting can result in cost overruns, delays in project timelines, or a lack of adequate funds to achieve project goals (Turner, 2021). The Estimation Theory, introduced by Kay (1998), offers a mathematical framework for generating precise budget forecasts grounded in existing data and historical patterns. This theory highlights the significance of employing dependable estimation methods to accurately forecast financial needs and reduce budget-related uncertainties (Kerzner, 2022).

In health projects supported by donor funding, the budgeting process entails estimating expenses associated with medical supplies, personnel, training, logistics, and operational costs (Fleming & Koppelman, 2022). Accurate estimation methods guarantee that budgets correspond with project requirements and avert financial mismanagement (Morris, 2022). Inaccurate budgeting methods can lead to donor withdrawal, project inefficiencies, or incomplete service delivery (Too & Weaver, 2021). Leveraging historical data from analogous projects enhances budget precision by offering insights into past cost behaviors, spending trends, and financial obstacles (Bryde, 2022). For instance, historical data from vaccine rollout programs can assist in estimating the costs associated with procurement, distribution, and administration for new immunization initiatives (Harrison & Lock, 2022). Examining historical data enables donors and project managers to make well-informed financial choices and allocate resources with greater efficiency (Turner & Müller, 2023).

Budget estimates rely on assumptions concerning variations in costs, inflation rates, and the availability of resources. Confirming these assumptions guarantees that budget forecasts are grounded in reality and consider possible uncertainties (Fleming & Koppelman, 2022). In health projects funded by donors, it is essential to validate assumptions regarding labor costs, equipment prices, and service delivery expenses against current market conditions to prevent both under-budgeting and over-budgeting (Kaplan & Norton, 2023). Validating assumptions

improves financial dependability and reduces the risks linked to erroneous cost forecasts (Jørgensen, 2022). Contingency planning entails the strategic allocation of financial reserves to address unforeseen cost fluctuations or emergencies (Rad & Levin, 2023). Health projects funded by donors should incorporate contingency budgets to address unexpected costs like emergency medical supplies, inflationary pressures, or logistical disruptions (Flyvbjerg, 2023). In the absence of contingency planning, projects can encounter financial shortfalls that impede their capacity to reach desired outcomes (Love et al., 2023).

Estimation Theory offers a systematic method for budget forecasting, enabling donor-funded health projects to allocate resources effectively and mitigate financial risks (Kay, 1998). Incorporating historical data, validating assumptions, and planning for contingencies can enhance budget accuracy and ensure financial sustainability (Turner, 2021). Precise budgeting boosts donor trust, increases the viability of projects, and guarantees the effective delivery of healthcare interventions (Fleming & Koppelman, 2022). In project management, budget estimation plays a vital role in financial planning, guaranteeing that resources are allocated effectively to meet project objectives. Precise budget forecasting reduces financial deficits, avoids cost overruns, and enhances accountability critical issues for health projects funded by donors. It is essential to maintain rigorous financial discipline and ensure transparency in the use of budgets for donors. Utilizing Estimation Theory allows project managers to improve budget precision via data-informed forecasting models, analysis of past expenditures, and budgeting those accounts for risks. This leads to enhanced financial planning, more effective utilization of donor resources, and greater project credibility, which in turn boosts the chances of ongoing funding and project growth.

Performance Measurement Theory and Program Earned Value

The Performance Measurement Theory supports the idea of earned value by highlighting the significance of employing systematic metrics to assess performance. The theory promotes the use of structured measurement methods that enable organizations to evaluate their efficiency, effectiveness, and impact concerning established objectives (Neely, 2022). The Program Earned Value (EV) serves as an essential tool for financial and performance evaluation in project management, enabling the measurement of actual progress in a donor-funded health project relative to its planned objectives. Earned Value Management (EVM) combines cost, schedule, and scope to assess project efficiency and success (Neely, Gregory, & Platts, 1995).

Evaluating performance in projects funded by donors guarantees that financial resources are used effectively and that project outcomes meet the expectations of the donors (Kaplan & Norton, 2023). Utilizing Earned Value concepts allows project managers to monitor project health, detect cost deviations, and take corrective actions as needed (Kerzner, 2022). The three essential indicators of Earned Value—Actual Cost, Planned Value, and Performance Indices—serve as the foundation for assessing whether a project is progressing towards its intended goals.

The Actual Cost (AC) signifies the complete amount spent on project activities at a specific moment in time. This metric assist project managers in comprehending the expenditure in relation to the designated budget (Fleming & Koppelman, 2022). In health projects funded by donors, conducting a thorough cost analysis enables project teams to track expenditures across different cost elements, including personnel, medical supplies, logistics, and administrative overheads (Turner, 2021). Monitoring real expenses promotes clarity and responsibility, which is essential for initiatives supported by donors that depend on outside funding (Too & Weaver, 2021). In the absence of adequate oversight of real expenditures, projects face the danger of financial mismanagement, potentially resulting in the withdrawal of funding or the failure of the project (Meredith & Mantel, 2023). Moreover, discrepancies between actual expenses and the intended budget may reveal inefficiencies, necessitating interventions like cost-reduction strategies or financial reorganization (Rad & Levin, 2023).

Planned Value (PV) represents the anticipated cost of work that is expected to be completed by a certain moment in the project timeline. This acts as a standard for evaluating actual progress (Fleming & Koppelman, 2022). In health projects funded by donors, PV plays a vital role in evaluating the progress of project implementation regarding resource use and output delivery (Bryde, 2022). A robust relationship between Planned Value and Actual Cost signifies that the project is financially aligned, while notable discrepancies could imply budget excesses or delays in execution (Turner & Müller, 2023). For instance, in a health initiative designed to provide medical supplies to 50,000 beneficiaries over a six-month period, if by the fourth month only 20,000 individuals had been reached, the performance variance would reveal the discrepancy and allow project teams to explore the root causes of the inefficiencies (Harrison & Lock, 2022).

Consistent evaluation of Planned Value guarantees that project milestones are achieved, thereby fostering trust among donor agencies and stakeholders in the project's capacity to meet established goals (Singh & Lano, 2023). Not following the established values may lead to doubts from donors, possible reductions in budget, or even the cancellation of the project (Jørgensen, 2022).

Performance indices in Earned Value Management encompass the Cost Performance Index (CPI) and the Schedule Performance Index (SPI), each offering valuable insights into the efficiency of a project. These indices enable project managers to assess cost efficiency and adherence to schedules, ensuring that the project achieves its intended benefits within the established timeframe (Flyvbjerg, 2023). The Cost Performance Index (CPI) is determined by dividing Earned Value (EV) by Actual Cost (AC). A CPI greater than 1 signifies cost efficiency, whereas a CPI less than 1 indicates cost overruns (Kerzner, 2022).

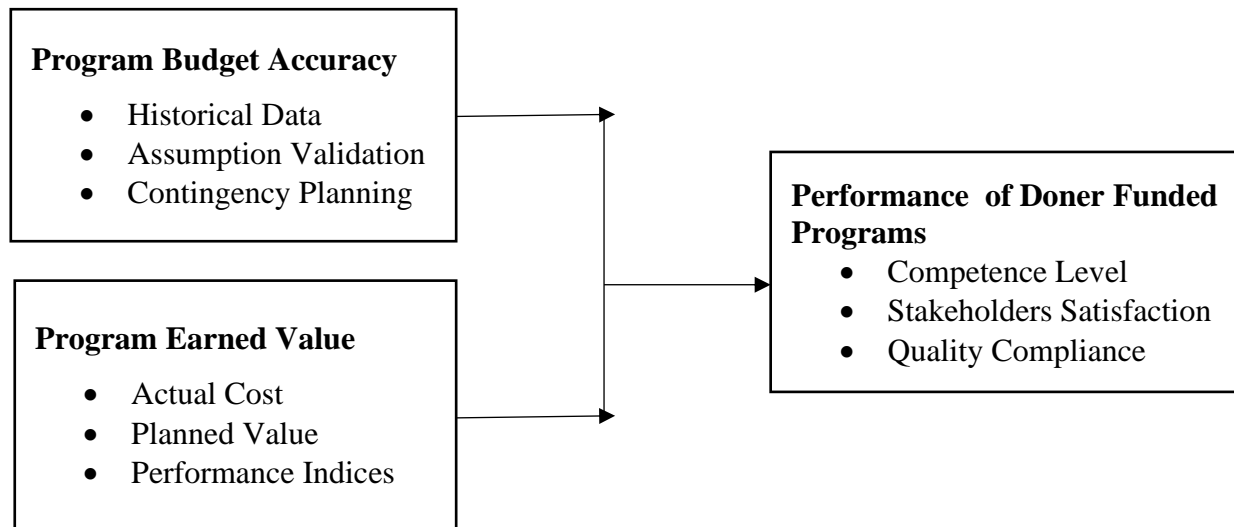
The Schedule Performance Index (SPI) is calculated by dividing Earned Value (EV) by Planned Value (PV). A value greater than 1 suggests that the project is progressing ahead of schedule, while a value less than 1 indicates a delay (Müller & Jugdev, 2022). By utilizing these indices, health projects funded by donors can assess their financial and operational efficiency, enabling them to make informed decisions aimed at enhancing performance (Bredillet et al., 2023). When performance indices indicate inefficiencies, it is essential to implement corrective measures, which may include reallocating resources, streamlining processes, or engaging stakeholders to improve project execution (Love et al., 2023).

The Performance Measurement Theory is closely connected to donor-funded health projects, offering organized approaches to assess project results. Funding organizations necessitate clear and measurable criteria to assess project effectiveness and validate ongoing financial support (Kaplan & Norton, 2023). The principles of Earned Value, along with performance measurement models, allow project managers to monitor financial and operational efficiency, ensuring that resources are used effectively to accomplish desired health interventions (Merrow, 2023). Furthermore, performance measurement guarantees accountability, as projects funded by donors are required to submit financial and impact reports to the funding agencies (Too & Weaver, 2021). In the absence of a systematic approach to performance evaluation, projects may encounter inefficiencies, misallocation of resources, and an inability to achieve anticipated outcomes, which could threaten future support from donors (Flyvbjerg, 2023). Integrating Actual Cost, Planned Value, and Performance Indices allows donor-funded health projects to boost financial sustainability, refine project tracking, and ensure alignment with donor expectations regarding set goals (Morris, 2022). Consequently, utilizing Performance Measurement Theory via Earned Value methodologies is crucial for guaranteeing the sustained impact and efficacy of health programs funded by donors.

Conceptual Framework

Conceptual frameworks define research issue growth and connection (Yin, 2013). According to Sawang and Unsworth (2011), conceptual framework difficulties help researchers

comprehend the process. The variables may be measured. Dependent variables have other causes. Kothari (2006) prioritizes independent variables. budgeting, and program cost estimation are independent variables, whereas performance of donor funded programs is the dependent variable. Figure 2.1 shows the conceptual framework.



Independent variables

Dependent variable

Fig 2.1 Conceptual framework

Source (Author 2024)

Program Budgeting Accuracy

The precision of budgeting plays a vital role in maintaining the financial viability of projects supported by donors. Inaccurate budgeting may result in funding shortages, reductions in scope, or inefficiencies during project execution (Flyvbjerg, 2023). The three main indicators of budget accuracy are Historical Data, Assumption Validation, and Contingency Planning. Leveraging historical financial data and spending patterns significantly improves the precision of budget forecasts. Examining past projects funded by donors enables managers to recognize common cost trends and create accurate financial forecasts (Trost & Oberlender, 2022). Historical data facilitates risk assessment, contributing to the enhancement of cost predictions informed by previous deviations (Love et al., 2023). It is essential to critically evaluate budgeting assumptions to confirm their accuracy and relevance.

Typical assumptions encompass inflation rates, stability of exchange rates, and procurement expenses (Jørgensen, 2022). Through the validation of these assumptions using data-driven methodologies, projects funded by donors can reduce financial uncertainties and uphold cost-effectiveness (Merrow, 2023). Including contingency funds in project budgets protects against unexpected risks like cost inflation, supply chain disruptions, or changes in policy. It is generally advised to set aside 5–15% of the overall budget for contingency reserves (Bryde, 2022). This promotes financial stability, enabling projects to manage unforeseen cost fluctuations while maintaining essential operations (Singh & Lano, 2023)

Program Earned Value

Initiative Earned Value (EV) serves as a performance measurement technique that assesses project progress through the integration of cost, schedule, and scope metrics. This guarantees that projects funded by donors maintain both financial and operational efficiency, all while realizing their intended impact (Vanhoucke, 2022). Essential metrics of earned value encompass Actual Cost, Planned Value, and Performance Indices. Actual Cost pertains to the overall costs associated with finalized project activities. Monitoring actual expenses enables program managers to assess if the project is staying within its financial limits and pinpoint

areas that may require fiscal modifications (Meredith & Mantel, 2023). In projects funded by donors, monitoring AC plays a crucial role in preventing financial mismanagement and ensuring the responsible utilization of donor resources (Harrison & Lock, 2022). PV signifies the projected budget allocated for work that is scheduled to occur within a designated timeframe.

Analyzing PV alongside AC and Earned Value (EV) offers valuable perspectives on financial efficiency and adherence to project timelines (Morris, 2022). For example, when PV is considerably greater than AC, it could suggest that resources are not being fully utilized, while a reduced PV might point to ineffective allocation of funds (Mirzaei & Mabin, 2023). Essential performance indices like the Cost Performance Index (CPI) and Schedule Performance Index (SPI) evaluate cost efficiency and the timeliness of projects. A CPI exceeding 1.0 signifies financial efficiency, whereas an SPI falling below 1.0 indicates potential delays (Fleming & Koppelman, 2022). In programs funded by donors, these indices assist project managers in refining strategies to enhance performance and prevent financial discrepancies (Turner & Müller, 2023).

Performance of Donor Funded Health Programs

Several key characteristics may assess donor-funded activities. Stakeholder satisfaction, quality compliance, and competence are crucial (Silva, 2020). Program efficiency and effectiveness depend on program team expertise. Competent and educated teams can overcome challenges, make smart decisions, and accomplish goals (Rodriguez & Mehta, 2021). A team without the right expertise may struggle to complete program tasks, causing delays, cost overruns, and poor outcomes. Program success is measured by stakeholder satisfaction.

The program meets stakeholders' requirements and expectations when beneficiaries, funders, implementing partners, and government agencies are happy with its activities and outcomes (Benson & Carver, 2023). High satisfaction is essential for trust, teamwork, and program longevity. The effectiveness of donor-funded health programs depends on quality standards (Hernandez & Okello, 2019). Funders and other stakeholders should anticipate high-quality outcomes from initiatives that follow standards and criteria (Ochieng & Wangari, 2022). Quality compliance boosts the implementing organization's credibility and financial prospects.

Empirical Review

Program Budget Accuracy and Performance of Donor Funded Health Programs

Donor-funded health initiatives need budgets to outline their finances. It ensures resource allocation, prevents financial mismanagement, and meets project goals within budget. Budgeting skills ensure the viability and completion of donor-funded health projects within their budgetary limits. When it comes to maintaining the financial viability of health initiatives, having an accurate budget is absolutely necessary. Historical data, the validation of assumptions, and contingency planning are three essential components that have a significant impact on the accuracy of the budget (Kerzner, 2022).

A better understanding of prior expenditures may be gained through the use of historical data, which enables more precise cost estimation and resource allocation (Bryde, 2022). According to the findings of a research conducted by Jørgensen (2022) on child feeding programs in Tanzania, the utilization of historical spending data resulted in a 32% improvement in budget accuracy. According to Jørgensen (2022), programs that failed to take into account the previous expenditure trends were subject to financial instability and frequent budget modifications. In a similar vein, Flyvbjerg (2023) conducted an analysis of HIV/AIDS programs in South Africa and discovered that relying on previous budget patterns resulted in a reduction of financial disparities and an improvement in money usage by 28% (Flyvbjerg, 2023). It is necessary to evaluate the assumptions of the budget by comparing them to the real market circumstances,

inflation trends, and cost variations in order to guarantee the stability of the financial system (Kaplan & Norton, 2023).

According to the findings of a research conducted by Turner and Muller (2023) on rural healthcare initiatives in Kenya, programs that utilized thorough assumption validation were able to reduce budget overruns by twenty percent. According to Turner and Muller (2023), programs that failed to confirm their financial assumptions did not only suffer with unanticipated expenditures but also with financing deficiencies. In a similar vein, Morris (2022) discovered that the validation of assumptions in vaccination programs in Ethiopia enhanced budget predictability, which in turn ensured that vaccines were procured and distributed in a timely manner (Morris, 2022). In order to provide financial resilience, contingency reserves are helpful in managing expenditures that are not anticipated (Kerzner, 2022).

According to the findings of a research conducted by Harrison and Lock (2022) on TB treatment programs in India, programs that used contingency budgeting were able to avoid experiencing financial difficulties during emergency outbreaks. There was frequent service outages experienced by programs that did not have any contingency planning in place (Harrison & Lock, 2022). In a similar vein, Rad and Levin (2023) discovered that contingency planning enhanced the financial stability of disease prevention programs in Nigeria, allowing for the seamless reallocation of funds in the case of unanticipated increases in costs (Rad & Levin, 2023).

Program Earned Value and Performance of Donor Funded Health Programs

Earned Value Management (EVM) plays a vital role in evaluating the financial and operational performance of health programs. Actual Cost, Planned Value, and Performance Indices serve as essential metrics for assessing project efficiency and compliance with budgetary constraints (Fleming & Koppelman, 2022). The actual cost denotes the complete financial outlay associated with carrying out program activities. Precise monitoring of real expenses aids in budgeting and evaluating operational effectiveness (Morris, 2022). A study conducted by Flyvbjerg (2020) regarding reproductive health programs in Malawi revealed that discrepancies between budgeted and actual costs resulted in a 22% decrease in the efficiency of service delivery. Programs that consistently tracked actual costs attained improved financial oversight and operational sustainability (Too & Weaver, 2021).

In a similar vein, Love et al. (2023) examined malaria treatment programs in Ghana, revealing that unmonitored cost variations led to funding shortfalls and delays in service delivery. Programs with comprehensive cost-tracking systems demonstrated superior capabilities in reallocating resources and achieving program goals (Love et al., 2023). The planned value quantifies the anticipated financial and operational advancement at a specific moment, acting as a standard for evaluating performance (Kerzner, 2022). A study conducted by (Fleming and Aritua et al. 2023) regarding immunization programs in India revealed that health initiatives that consistently monitored planned value attained a 95% efficiency in budget utilization. Programs that deviated from their planned values frequently encountered operational challenges and dissatisfaction from donors (Fleming & Koppelman, 2022).

Ika et al. (2022) investigated maternal health programs in Bangladesh and discovered that planned value tracking enhanced service coverage by 18%, as it facilitated the proactive identification of financial discrepancies. Programs that did not synchronize expenditures with the intended value experienced greater budget deficits and diminished service effectiveness (Turner, 2021). Performance indices, including the Cost Performance Index (CPI) and Schedule Performance Index (SPI), evaluate program efficiency regarding budget adherence and timeline compliance (Bryde, 2022). A study conducted by Kaplan and Norton (2023) regarding HIV treatment programs in Brazil revealed that initiatives with a CPI exceeding 1.0 were able to sustain financial viability, while those with a CPI below 1.0 faced challenges

related to cost overruns. Programs utilizing performance indices demonstrated enhanced capabilities for dynamic budget adjustments and achieving performance targets (Kaplan & Norton, 2023). A recent investigation conducted by Morris (2022) regarding sanitation initiatives in Uganda revealed that programs with an SPI exceeding 1.0 successfully completed 94% of their planned activities on time. Programs that overlooked performance metrics encountered regular delays and uncertainties regarding funding (Morris, 2022).

RESEARCH METHODOLOGY

The study used descriptive research design. Descriptive research design was used to establish a cause and effect between the variable as asserted by (Mugenda & Mugenda, 2003). Descriptive research design is also chosen since the study used both qualitative and quantitative data to aid findings and conclusion. According to Ministry of Health (MOH), as of 2018, the county recorded a cumulative total of 220 health facilities, comprising 11 (level 4) hospitals, 50 (level 3) health centers, and 159 (level 3) dispensaries. This county is among the 47 counties in Kenya, functioning within a devolved system of governance instituted by the 201 Constitution of Kenya. This study employed a stratified sampling technique since the population is heterogenous and all the members have different characteristics. The Sample size is 111 from the total population of 220. The sample size represents 50% hence, a good representation of the populations since it is greater than 10 percent of the target population (Kothari, 2014).

Table 1: Distribution of Study Population

Units of Study	Total	Program Manger	Finance Manager	Health Administrators	Target Population	(%)
Hospitals (Level 4)	11	2	2	1	5	4.50%
Health Centers (Level 3)	50	10	10	5	25	22.53%
Dispensaries (Level 3)	159	40	35	6	81	72.97%
Total	220	52	42	12	111	100%

The study made use of both secondary and primary sources of information. The use of questionnaires allowed for the collection of primary data. Descriptive and inferential statistics was used in the investigation. Kaur et al. (2018) describes how descriptive statistics organize data by explaining the connection between variables in a sample or population. According to Zhang et al. (2018), inferential statistics use sample data from ANOVA, correlation, coefficient, and multiple regression analysis to analyze populations. Correlation was used to quantify variable connections. Most correlations are linear Pearson product moment correlations between two continuous variables (Schober et al., 2018). The study used multiple regression analysis models. According to Fraenkel & Wallen, (2012) multiple regressions is used to examine the relationship between variables and is used to predict the value of one variable based on the value of the other.

RESEARCH FINDINGS AND DISCUSION

The researcher administered 96 questionnaires out of which only 84 were returned while fully filled. This resulted in a response rate of 87.5% which was adequate for data analysis as stated by (Saunders, 2011) who argues that a response rate for statistical analysis should be more than 50%. Therefore, the data can be used to generalize the opinion of the entire population as the response rate is adequate for the study.

Descriptive Statistics of Study Variables

The study constituted the independent and dependent variables. The independent variable of the study included; Program Budget Accuracy, and Project Earned Value. The dependent variable was performance of donor funded health programs in Siaya County.

Program Budget Accuracy

The respondents were asked to indicate their level of agreement on various statements relating to the relationship between Program Budget Accuracy and Performance of Donor Funded Health Programs in Siaya County, Kenya. A Likert scale of 1-5 was used, where 1 was Strongly Disagree, 2 was Disagree, 3 was neutral, 4 was Agree, and 5 was Strongly Agree. The table below shows the descriptive statistics of the analyzed data, which are represented using percentages.

Table 2: Program Budget Accuracy

	Strongly	Agree	Neutral	Disagree	Strongly	Descriptive	
	Agree	Agree	Neutral	Disagree	Disagree	Mean	SD
The utilization of historical data influences budget forecasts for future projects.	6.1%	41.5%	39.0%	13.4%	0.0%	2.60	.80
Lessons learned from historical data can be systematically integrated into future budgeting processes.	4.9%	50.0%	39.0%	6.1%	0.0%	2.46	.69
Insufficient validation of assumptions in program budgeting presents significant risks.	6.1%	51.2%	34.1%	8.5%	0.0%	2.45	.74
A well-defined contingency plan enhances budget accuracy in unpredictable circumstances.	2.4%	52.4%	35.4%	9.8%	0.0%	2.52	.71
Several factors must be considered when determining the level of contingency funds required for effective budget management	4.9%	47.6%	41.5%	6.1%	0.0%	2.49	.69

According to the findings, 41.5% expressed agreement and 39.0% maintained a neutral stance regarding the impact of historical data on budget forecasts for upcoming projects, yielding a mean score of 2.60 (SD = 0.80). This is consistent with previous studies, including Flyvbjerg (2020), which highlights that historical data serves as a dependable basis for forecasting future costs and risks. Nonetheless, the significant proportion of neutral responses could indicate difficulties in obtaining or understanding historical data, as highlighted by Williams and Samset (2021). In a similar vein, 50.0% expressed agreement while 39.0% maintained a neutral stance regarding the systematic integration of lessons learned from historical data into future budgeting processes, resulting in a mean score of 2.46 (SD = 0.69). The findings of Kerzner (2019) reinforce this notion, emphasizing that a structured incorporation of previous experiences enhances budget precision and diminishes the chances of recurring errors from the past.

This aligns with the findings of Aritua et al. (2023), who contend that validating assumptions via data analysis and stakeholder consultation reduces errors and improves reliability.

Furthermore, 51.2% expressed agreement and 34.1% maintained a neutral stance regarding the notion that inadequate validation of assumptions poses considerable risks, yielding a mean score of 2.45 (SD = 0.74). This finding is corroborated by literature like Ika et al. (2022), which emphasizes that unvalidated assumptions may result in budget overruns and project failures, especially in complex programs.

Contingency planning emerges as a significant element, with 52.4% in agreement and 35.4% neutral on the notion that a clearly articulated contingency plan improves budget accuracy in uncertain situations, resulting in a mean score of 2.52 (SD = 0.71). This corresponds with findings by Turner and Müller (2021), highlighting that contingency funds serve as a safeguard against unexpected risks, thereby promoting financial stability. Additionally, 47.6% expressed agreement while 41.5% maintained a neutral stance regarding the necessity of considering various factors in assessing the required level of contingency funds, resulting in a mean score of 2.49 (SD = 0.69). Research conducted by Pinto and Slevin (2020) indicates that elements like project complexity, risk exposure, and stakeholder expectations ought to inform contingency planning for the purpose of achieving effective budget management.

Regression Analysis Model for Program Budget Accuracy and Performance of Donor Funded Health Programs

Model Summary

Table 3 Model Summary for Program Budget Accuracy

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.443 ^a	.196	.186	.43778

a. Predictors: (Constant), Program Budget Accuracy

Program Budget Accuracy was found to be a very important variable in ensuring that there is Performance of Donor Funded Health Programs in Kenya. This is supported from the results found, where the R square (0.196) which is also known as the coefficient of determination explains 19.6% of the variations in the dependent variable which is Performance of Donor Funded Health Programs hence the relationship of the variables is satisfactory. The model summary indicates that Program Budget Accuracy is an important factor in predicting the Donor Funded Health Programs.

Analysis of Variance

Table 4 Analysis of Variance for Program Budget Accuracy

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.743	1	3.743	19.530	.000 ^b
	Residual	15.332	80	.192		
	Total	19.075	81			

a. **Dependent Variable:** Performance of Donor Funded Health Programs

b. Predictors: (Constant), Program Budget Accuracy

From the results above, the F value (19.530) is greater than the F critical (3.96) which indicates that the model explains a significant portion of the variance in the dependent variable. The p value (0.000) is also less than 0.05 therefore this confirms that there is a strong statistical significance. Therefore, from the findings, program budget accuracy is a significant predictor of the performance of donor funded health programs. Budget controlled accurately can have a substantial impact on the performance of donor funded programs, as indicated by the statistical significance of the model.

Regression Coefficient Analysis

Table 5: Regression Coefficient Analysis for Program Budget Accuracy

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.279	.320		3.995	.000
	Program Budget Accuracy	.572	.129	.443	4.419	.000

a. Dependent Variable: Performance of Donor Funded Health Programs

The study assessed the beta coefficient of program budget accuracy in relation to the Performance of Donor Funded Health Programs. The beta coefficient was found to be 0.572, with a p-value of 0.000, which is below 0.05 significance level. Therefore, there is a positive and significant relationship between program budget accuracy and performance of donor funded health programs ($\beta=0.572$, $p<0.000$). The regression model is as follows:

Performance of Donor Funded Health Programs = $1.279 + 0.572$ Program Budget Accuracy

The coefficients table indicates that Program Budget Accuracy has a significant and positive impact on the Performance of Donor Funded Health Programs. The relationship is both statistically significant and practically meaningful, as evidenced by the significant p-values and the magnitude of the coefficients. This is in line with the research findings by Marnada et al. (2021), who states that only uncontrolled Budget Accuracy are the ones that are likely to cause budget creep or variance hence affecting program performance due to cost and schedule overruns. Therefore, the author acknowledges the importance of budget in ensuring program performance.

The findings were also supported by Ajmal et al. (2022) who acknowledges that proper budget accuracy results to program performance. The author also states that improper budget accuracy may lead to project budget negative variation which negatively impacts the performance of programs. Therefore, through the evidence from the results and various research conducted, it is clear that there is positive and significant correlation between program budget accuracy and donor funded health program performance.

Program Earned Value

The respondents were asked to indicate their level of agreement on various statements relating to the relationship between Program Earned Value and donor funded health program performance in Siaya County, Kenya. A Likert scale of 1-5 was used, where 1 was strongly disagree, 2 was disagree, 3 was neutral, 4 was agree, and 5 was strongly agree. The table below shows the descriptive statistics of the analyzed data, which are represented using percentages.

Table 6: Program Earned Value

	Strongly	Agree	Neutral	Disagree	Strongly	Descriptive	
	Agree	Agree	Neutral	Disagree	Disagree	Mean	SD
The analysis of actual costs influences decision-making throughout the life cycle of a program.	2.4%	43.9%	26.8%	26.8%	0.0%	2.78	.88
Variations in actual costs influence stakeholders' perception of project success.	0.0%	52.4%	32.9%	14.6%	0.0%	2.62	.73
The relationship between planned value and project milestones affects resource allocation.	0.0%	28.0%	36.6%	34.1%	1.2%	3.09	.82
Stakeholder involvement in establishing planned value impacts project execution and outcomes.	0.0%	29.3%	34.1%	36.6%	0.0%	3.07	.81
Performance indices serve as predictors of a program's overall success in meeting its objectives.	2.4%	25.6%	56.1%	11.0%	4.9%	2.90	.81
Variations in performance indices influence stakeholder confidence in project reporting.	0.0%	28.0%	47.6%	17.1%	7.3%	3.04	.87

According to the findings, the results indicate a significant agreement. 43.9% expressed agreement and 26.8% maintained a neutral stance regarding the impact of actual cost analysis on decision-making across a program's life cycle, yielding a mean score of 2.78 (SD = 0.88). This is consistent with previous studies, including Kerzner (2019), which highlights the importance of ongoing cost analysis for effective decision-making and resource optimization. Nonetheless, the 26.8% disagreement could indicate difficulties in executing cost analysis practices, potentially due to insufficient data systems or a lack of expertise, as highlighted by Williams and Samset (2021). In a similar vein, 52.4% expressed agreement while 32.9% maintained a neutral stance regarding the impact of variations in actual costs on stakeholders' perception of project success, resulting in a mean score of 2.62 (SD = 0.73). This finding aligns with the studies conducted by Flyvbjerg (2020), indicating that cost overruns frequently result in adverse perceptions among stakeholders and diminished confidence in project results. Nonetheless, the 14.6% disagreement could arise from stakeholders emphasizing other considerations, like quality or timeliness, rather than cost performance.

The connection between planned value and project milestones garnered a favorable reception, with 34.1% in agreement and 36.6% expressing neutrality regarding its impact on resource allocation, as indicated by a mean score of 3.09 (SD = 0.82). This is consistent with findings by Turner and Müller (2021), which emphasize that aligning planned value with milestones facilitates efficient resource allocation and timely project delivery. Furthermore, 36.6% expressed agreement and 34.1% maintained a neutral stance regarding the influence of stakeholder involvement in the establishment of planned value on project execution and outcomes, yielding a mean score of 3.07 (SD = 0.81). This aligns with findings from Aritua et al. (2023), which suggest that involving stakeholders improves the precision of planned value and encourages buy-in, resulting in more favorable project outcomes.

Performance indices also emerged as a significant factor, with 56.1% remaining neutral and 25.6% agreeing that they serve as predictors of a program's overall success, yielding a mean score of 2.90 (SD = 0.81). This finding is corroborated by literature including Pinto and Slevin

(2020), which highlights that performance indices, like the cost performance index (CPI) and schedule performance index (SPI), serve as early indicators of possible challenges. Nonetheless, the significant proportion of neutral responses could indicate a possible lack of comprehension or dependence on these indices in practical applications. In a similar vein, 47.6% expressed neutrality while 28.0% concurred that fluctuations in performance indices affect stakeholder confidence in project reporting, yielding a mean score of 3.04 (SD = 0.87). The study conducted by Ika et al. (2022) reinforces this idea, highlighting that stable performance metrics foster stakeholder trust, whereas inconsistencies may result in skepticism.

Regression Analysis Model for Program Earned Value and performance of Donor Funded Health Programs

Model Summary

Table 7: Model Summary for Program Earned Value

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.605 ^a	.366	.358	.38877

a. Predictors: (Constant), Program Earned Value

Program Earned Value was found to be a very important variable in ensuring that there is performance of donor funded health programs in Kenya. This is supported from the results found, where the R square (0.366) which is also known as the coefficient of determination explains 36.6% of the variations in the dependent variable which is performance of donor funded health program hence the relationship of the variables is satisfactory. The model summary indicates that Program Earned Value is an important factor in predicting the performance of donor funded health program.

Analysis of Variance

Table 7 Analysis of Variance for Program Earned Value

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.984	1	6.984	46.206	.000 ^b
	Residual	12.091	80	.151		
	Total	19.075	81			

a. Dependent Variable: Performance of Donor Funded Health Program

b. Predictors: (Constant), Program Earned Value

From the results above, the F value (46.206) is greater than the F critical (3.96) which indicates that the model explains a significant portion of the variance in the dependent variable. The p value (0.000) is also less than 0.05 therefore this confirms that there is a strong statistical significance. Therefore, from the findings, Program Earned Value is a significant predictor of the Performance of Donor Funded Health Program. Adequate Program Earned Value is critical to Performance of Donor Funded Health Program and can have a substantial impact on their performance, as indicated by the statistical significance of the model.

Regression Coefficient Analysis of Program Earned Value

Table 8: Regression Coefficient Analysis for Program Earned Value

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.877	.268		3.272	.002
	Program Earned Value	.617	.091	.605	6.798	.000

a. Dependent Variable: Performance of Donor Funded Health Program

The study assessed the beta coefficient of Program Earned Value in relation to the Performance of Donor Funded Health Program. The beta coefficient was found to be 0.563, with a p-value of 0.000, which is below 0.05 significance level. Therefore, there is a positive and significant relationship between Program Earned Value and Performance of Donor Funded Health Program ($\beta=0.877$, $p<0.000$). The regression model is as follows:

Performance of Donor Funded Health Program = $0.877 + 0.617$ Program Earned Value

The coefficients table indicates that Program Earned Value has a significant and positive impact on the Performance of Donor Funded Health Program. The relationship is both statistically significant and practically meaningful, as evidenced by the significant p-values and the magnitude of the coefficients. This is in line with the research findings by Ahmed (2023), who argues that in order to ascertain the effectiveness and efficiency of the program, performance can be measured using metrics that can help them gauge the earned value of donor funded health program. The findings were also supported by Kerzner (2022) argues that the future of project management may be well driven due to the complexity of projects which forced project managers to better understand how to identify, select, measure, report project metrics showing value creation. Therefore, the author acknowledges the need of Program Earned Value in measuring program performance. Therefore, through the evidence from the results and various research conducted, it is clear that there is positive and significant correlation between Program Earned Value and performance of donor funded health program.

Performance of Donor Funded Health Programs

The respondents were asked to indicate their level of agreement on various statements relating Performance of Donor Funded Health Programs in Siaya County Kenya. A Likert scale of 1-5 was used, where 1 was strongly disagree, 2 was disagree, 3 was neutral, 4 was agree, and 5 was strongly agree. The table below shows the descriptive statistics of the analyzed data, which are represented using percentages.

Table 9: Performance of Donor Funded Health Programs

	Strongly Agree		Neutral Disagree		Strongly Disagree		Description Statistics	
	Agree	Agree	Neutral	Disagree	Disagree	Disagree	Mean	SD
The proficiency of project teams improves cost management and financial outcomes in donor-funded initiatives.	0.0%	57.3%	23.2%	19.5%	0.0%	0.0%	2.62	.80
The satisfaction of stakeholders is essential for ensuring financial transparency and the long-term sustainability of donor-funded programs.	0.0%	36.6%	52.4%	11.0%	0.0%	0.0%	2.74	.64
Consistent adherence to quality compliance standards enhances financial efficiency and contributes to the overall success of donor-funded initiatives.	0.0%	31.7%	43.9%	24.4%	0.0%	0.0%	2.93	.75
The proficiency of leadership and staff significantly influences financial results and the effective distribution of donor funds in projects.	0.0%	70.7%	29.3%	0.0%	0.0%	0.0%	2.29	.46
Aligning stakeholder satisfaction with financial objectives improves the performance and accountability of donor-funded programs.	1.2%	45.1%	41.5%	12.2%	0.0%	0.0%	2.65	.71
Effective quality compliance mechanisms guarantee efficient resource utilization and enhanced financial performance in donor-funded projects.	4.9%	31.7%	39.0%	24.4%	0.0%	0.0%	2.83	.86

According to table 9, The results indicate a significant consensus regarding the value of team expertise and leadership, whereas opinions on stakeholder satisfaction and quality compliance are more varied. For example, 57.3% expressed agreement and 23.2% maintained a neutral stance regarding the notion that the proficiency of project teams enhances cost management and financial results, yielding a mean score of 2.62 (SD = 0.80). This is consistent with previous studies, including Kerzner (2019), which highlights that proficient teams are more capable of managing budgets, reducing risks, and completing projects within the designated timeframe. Nonetheless, the 19.5% disagreement could indicate difficulties in developing team capacity or limitations in resources, as observed by Ika et al. (2022). In a similar vein, 70.7% expressed agreement while 29.3% maintained a neutral stance regarding the assertion that the proficiency of leadership and staff has a significant impact on financial outcomes and the efficient allocation of donor funds, resulting in a mean score of 2.29 (SD = 0.46). This is backed by findings from Turner and Müller (2021), which emphasize that effective leadership guarantees strategic alignment, optimal resource allocation, and accountability in projects funded by donors.

Stakeholder satisfaction holds significant importance, with 36.6% in agreement and 52.4% remaining neutral regarding its necessity for financial transparency and long-term sustainability, as indicated by a mean score of 2.74 (SD = 0.64). This finding aligns with the

work of Brinkerhoff and Brinkerhoff (2020), who contend that satisfied stakeholders are more inclined to support and maintain programs. Nonetheless, the significant proportion of neutral responses could suggest that assessing stakeholder satisfaction is frequently neglected or challenging to quantify in real-world scenarios. Furthermore, 45.1% expressed agreement and 41.5% maintained a neutral stance regarding the notion that aligning stakeholder satisfaction with financial objectives enhances program performance and accountability, yielding a mean score of 2.65 (SD = 0.71). This is consistent with findings by Ebrahim (2021), indicating that engaging stakeholders cultivates trust and guarantees alignment between financial objectives and program results.

The responses regarding quality compliance were varied, with 31.7% in agreement and 43.9% remaining neutral on the notion that consistent adherence to quality standards improves financial efficiency and program success, resulting in a mean score of 2.93 (SD = 0.75). The literature, including Aritua et al. (2023), supports the notion that quality compliance leads to reduced waste, enhanced resource utilization, and increased donor confidence. Nonetheless, the 24.4% disagreement could indicate difficulties in applying quality standards, potentially due to insufficient resources or competing priorities. In a similar vein, 31.7% expressed agreement while 39.0% maintained a neutral stance regarding the assertion that effective quality compliance mechanisms ensure efficient resource utilization and improved financial performance, resulting in a mean score of 2.83 (SD = 0.86). The findings of Pinto and Slevin (2020) reinforce this idea, highlighting that strong compliance mechanisms promote accountability and enhance financial results.

Table 10: Status of Descriptive Statistics

Variable	N	Mean	Std. Deviation	Variance
Program Budgeting Accuracy	84	3.8818	.47087	.222
Program Earned Value	84	3.7171	.34125	.116
Performance of Donor Funded Health Programs	84	3.4288	.50471	.255

The mean score for Program Budgeting Accuracy stands at a moderate 3.8818, accompanied by a higher standard deviation of 0.47087. This suggests that, although budgeting accuracy is largely viewed positively, there exists considerable variability in the perspectives of the respondents. The Program Earned Value exhibits a mean score of 3.7171 and a standard deviation of 0.34125, indicating that earned value management is viewed as moderately effective, with opinions showing a notable level of consistency. The evaluation of health programs funded by donors reveals a mean score of 3.4288, which is the lowest among the assessed areas, accompanied by a standard deviation of 0.50471. This suggests that respondents view the performance of these programs as comparatively lower, with considerable variability in their perceptions. The average for the Performance of Donor Funded Health Programs (3.4288) is notably lower than the averages for other variables, highlighting a performance gap.

The considerable standard deviation (0.50471) for this variable indicates notable variability in performance, implying that while some programs may excel, others could be underperforming. This is consistent with findings from studies such as Omondi et al. (2022), which indicated that 65% of donor-funded health programs in Siaya County faced budget overruns, and the Siaya County Health Department report (2023), which revealed that 40% of programs did not meet their objectives. The average for the Performance of Donor Funded Health Programs (3.4288) is notably low, indicating that the outcomes of these programs are falling short of expectations. This issue arises as health programs funded by donors play a vital role in enhancing health outcomes in Siaya County.

Conclusion of the Study

The study stressed the importance of proper program budgeting for best results. Effective budgeting ensures donor monies are allocated efficiently, eliminating deficits and unnecessary

spending. Research shows that effective budget forecasting and continuous financial monitoring improve donor-funded program financial discipline. Real-time tracking and historical financial data analysis increase budget accuracy for health initiatives, aligning financial resources with operational needs. Donor-funded health initiatives need periodic budget reviews and independent audits to detect and fix financial inefficiencies, improving accountability and fiscal responsibility.

A favorable association was found between project earned value and donor-funded health program performance. EVM approaches give program managers quick insights into financial efficiency and project progress, allowing them to compare anticipated and actual expenses. Donor-funded health initiatives can discover cost variances and rectify them to avoid financial mismanagement using performance indicators like the CPI and SPI. Maintenance of program efficiency, donor contribution success, and budget overruns and delays need regular earned value evaluations.

Recommendations of the Study

Program Budget Accuracy and Performance of Donor Funded Health Programs

Effective budgeting is crucial for upholding financial discipline and guaranteeing the efficient allocation of donor funds. The study advocated for the implementation of sophisticated financial planning tools and the analysis of historical data to enhance budget estimations. Utilizing zero-based budgeting techniques, which require justification for every expense, can effectively reduce unnecessary costs and improve financial accountability. Regular budget evaluations are necessary to analyze discrepancies between projected and actual spending. Utilizing budget forecasting models that incorporate factors such as inflation, exchange rate fluctuations, and contingency planning is essential for enhancing financial predictability. Donor-funded programs ought to implement automated financial tracking systems to enhance budget monitoring and provide real-time visibility into financial performance.

Program Earned Value and Performance of Donor Funded Health Programs

Earned value management (EVM) serves as an essential instrument for evaluating the financial and operational effectiveness of donor-funded programs. The research suggested the incorporation of Earned Value Management techniques, including the cost performance index (CPI), schedule performance index (SPI), and variance analysis, to deliver real-time insights into program execution. Program managers must establish baseline performance indicators during the initiation phase to enable precise tracking of progress. Regular EVM reports must be generated to evaluate the achievement of program milestones within the designated budget and timeline. Discrepancies must be resolved via corrective action plans to avert financial overruns and delays. Furthermore, sharing EVM data with donors and stakeholders is essential for improving transparency and accountability.

Areas for Further Research

Further studies can be conducted in different state agencies to compare the findings with those of the current study. Variables apart from Program Budget Accuracy and Project Earned Value Performance of Donor Funded Programs should be explored, as these variables only explained 62.2% of the changes in the effective implementation of public health construction projects. This suggests that the remaining 37.8% of the changes in the performance of public health sectors in Kenya could be attributed to other variables not covered in this study. The study recommends that future research should investigate on the relationship between cost management and performance of health projects.

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