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Risk Management Strategies and Performance of Africa Medical Research and Foundation Projects in Kenya

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Abstract— **Organizations or projects regardless of their field and size can benefit from integrating a systematic plan to deal with potential risks using a risk management strategy. Risk management strategy allows to continuously assess and respond to risks to ensure the project or organization is safe from threats. The risk management strategy that is adopted determines the capability to manage effectively each risk in the project or the organization or whether the choice will be disastrous. Depending on nature of the given risk, the choice made by the project manager is based on many options though the same action may not be a solution to every risk. This study aimed to examine the influence of risk management strategies on performance of Africa Medical Research Foundation's projects in Kenya. The study specifically examined the influence of the risk strategies of: avoidance, transfer, acceptance and reduction on performance of AMREF projects in Kenya. Descriptive survey design was adopted where a total of 131 project team members in AMREF projects in Siaya county were targeted and a sample of 99 respondents will be drawn using Yamane formula. The questionnaire was the main data collection instrument comprising of closed and open-ended questions. The study found that there is a positive joint strong correlation between Risk Management Strategies (Risk Avoidance Strategy, Risk Reduction Strategy) with performance of AMREF development Projects. Risk Reduction Strategy had a strong positive significant (p =.0000, r =.792) relationship with performance of AMREF development projects in Kenya. The variable also had significant coefficients of estimate (β2 = .607, p-value = .000 < .05, r = .792). Risk Reduction Strategy significantly influence performance of AMREF development projects in Kenya by .792 or 79.2%. In regards to Risk Reduction Strategy. Risk Retention Strategy had a positive, significant, and strong correlation (r = 0.499; p<0.004) with performance of AMREF development projects in Kenya. Risk Retention Strategy had a strong positive significant (p = .002, r = .644) relationship with performance of AMREF development projects in Kenya. The coefficients of estimate were also significant (β3 = .715, p-value = .002 < .05, r =.644). Risk Retention Strategy significantly influence performance of AMREF development projects by .644 or 64.4%.**

Index Terms—**Risk management strategies, Risk reduction strategy, Risk avoidance strategy, AMREF projects**

I. Introduction

Community development is the practice through which a local community develops more employment, revenue, and develops infrastructure, thereby assisting their community in essentially improving and being able to manage [1] Community development entails interaction between support workers, such as social workers, youth groups, and facilitators, and the local community in order to push for change in the community's best interests. As a result, put in place long-term projects and programs that enable the establishment of social infrastructures, resulting in beneficial differences in the lives of the members of the community [2]. According to [2], donor-funded initiatives, as well as the guidelines of stakeholders who were purposefully funding the advancement and re-structuring of all segments of the Kenyan economy, pushed project management to spotlight in the early 1990s as a good option for delivering intervention programs. The number of factors influencing the success of development initiatives include: scope, time for intervention programs execution, and the funds supplied, which are all chosen by donors. As a result, non-governmental organizations (NGOs) have been compelled to do ongoing study on risk management measures to aid in the success of their community projects.

One key factor that have a negative bearing on performance of projects is projects risks. Projects are prone to risks the numerous types of risks that may affect a project are financial, strategic, hazardous and operational risks [3]. Unexpected events and uncertainty often result to damaging consequences for projects. If these risks are not effectively dealt with, they may pose a challenge in the completion of the project. Therefore, risk analysis and management of risks is a major feature of project management in which project managers need to effectively deal with the risks and uncertainty in order to fully achieve the vision of the project. Unexpected events and uncertainty often result to damaging consequences for projects [4].

According to [5], project risk response and control includes acceptance, mitigation, avoidance and transfer. As for positive risks, they can be exploited, enhanced or even shared. There should be continuous evaluation and monitoring of risks so as to identify new risks as well know the effectiveness of the risk controlling strategies. In the process of risk control, there is the execution of risk response plan, identification of new risks, tracking of the identified risks evaluation of the effectiveness of the risk process and observing of the residual risks. The process is beneficial as it enhances the risk management approach efficiency in the project timeline [6]. ALL risk management solutions fit into one of four major categories: Withstand, treat, dismiss, and

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transfer are all options. It's possible that making the best use of these tactics won't be possible. Some of these may entail trade-offs that the organization or person making the risk management decisions does not agree with. There is no ideal strategy for dealing with risks, since some of the strategies involve tradeoffs which may not be acceptable to the individual making the decisions or to the organization [7].

A. Global, Regional, and Local Perspectives of Risk Management Strategies

In Malaysia risk management strategies on performance of projects has been known to enhance productivity [8]. A study on risk management practices of German firms revealed that participants showed no difficulty in developing a risk management system and rated business survival as the top risk management goal. The respondents were also found to be more risk-neutral than risk-averse for project risks, and that 88 % use derivatives [9]. In sub-Sahararan Africa, the concept of project risk management has gained prominence due to recent disasters including COVID-19 pandemic. Consequently, different strategies have been adopted by different industries and companies in the region. A study on risk management practices carried out on the Ghanaian insurance industry by [3] revealed that companies insuring life, different from companies insuring non-life, have their risk appetite levels statements recorded. This enables the identification of those risks to on-board and those ones to transfer. Moreover, they exposed that the industry lacks adequate skilled personnel and risk management is reactive as a response to regulatory directives. In Kenya a study on project risk management strategies and performance of the National Hospital Insurance Funds (NHIF) in Kenya found risk prevention highly affected performance of NHIF projects. Risk acceptance and Risk control also affected performance of projects with risk transfer as the strategy that had a least effect on performance [10]. In a study by [4] on 'effects of risk management practices and performance of projects in Nairobi city county' recommended the integration of risk management procedures during project implementation. Although risk procedures were introduced, they were not fully utilized to ensure increased performance. The study identified risk prevention, risk retention, risk control and risk transfer as risk management practices used in Nairobi City County projects

B. STATEMENT OF THE PROBLEM

Projects are prone to risks the numerous types of risks that may affect a project are financial, strategic, hazardous and operational risks [3]. Unexpected events and uncertainty often result to damaging consequences for projects. If these risks are not effectively dealt with, they may pose a challenge in the completion of the project. Therefore, risk analysis and management of risks is a major feature of project management in which project managers need to effectively deal with the risks and uncertainty in order to fully achieve the vision of the project. Unexpected events and uncertainty often result to damaging consequences for projects [11]. Recently, there has been increasing community needs and scarcity of donor funding across the world that has meant that NGOs including AMREF must be much more careful about how they manage projects to continue to attract funding. This therefore has mounted a lot of pressure on most NGO's managers to explore various risk management strategies to enhance project performance [11]. In Kenya more than 60% registered projects under NGOs have been poorly formed or neither complete. According to NGO coordination Board report of 2019, 15 projects registered by about 8 locals NGOs in Siaya County only 6 projects in youth development, health and community projects have positive performance within their expected maturity of 2 years. This situation has been since 2016 to 2019. The trend has been the same worldwide especially in Asia and Europe 12]. Projects require heavy funding and this is good indicator for that risks are inevitable in any project that is undertaken. NGOs have always struggled in have projects perform though the initiation or kick off has always been colorful [13]. Even though there are various literature on Risk Management Strategies [10], [14], [15] though the studies are relevant to the proposed study, none investigated whether risk management strategies influence the performance of AMREF projects in Kenya.

C. Objectives of the Study

The main objective of the study was to investigate the influence of project risk management strategies on the performance of AMREF projects Kenya.

Specific Objectives

i. To determine the influence of project risk avoidance strategy on the performance of AMREF development projects in Kenya.
ii. To establish the influence of project risk reduction strategy on the performance of AMREF development projects in Kenya.

II. LITERATURE REVIEW

A. Theoretical Review

Prospect theory was developed by Daniel Kahneman and Amos Tversky in 1979. Prospect theory is a theory of decision-making under conditions of risk [16]. Decisions involve internal conflict over value trade-offs. This theory is designed to better describe, explain, and predict the choices that typical person makes in a world of uncertainty. The theory addresses how these choices are framed and evaluated in the decision-making process. Prospect theory advances the notion that utility curves differ in domains of gain from those in domains of loss. Prospect Theory looks at two parts of decision making: the editing, or framing, phase, and the evaluation phase [17]. Framing refers to the way in which a choice, or an option can be affected by the order or manner in which it is presented to a decision maker. The evaluation phase of a prospect theory encompasses two parts, the value function and the weighting function. The value function is defined in terms of gains and losses relative to the reference point not in terms of absolute wealth. In prospect theory, value is a function of change with a focus on the starting point so that the change is either negative or positive. Prospect theory predicts that domain affects risk propensity. Losses have more emotional impact than an equivalent amount of gains and therefore weighted more heavily in 12 our decision-making [16].

The prospect theory starts with the concept of loss aversion, an asymmetric form of risk aversion, from the observation that people react differently between potential losses and potential gains. Thus, people make decisions based on the potential gain or losses relative to their specific situation (the reference point) rather than in absolute terms; this is referred to as reference dependence. Faced with a risky choice leading to gains, individuals are risk-averse, preferring solutions that lead to a lower expected utility but with a higher certainty [18]. Faced with a risky choice leading to losses, individuals are risk-seeking, preferring solutions that lead to a lower expected utility as long as it has the potential to avoid losses. Critics to theory argue that the theory is borrowed psychology without the acknowledgement for the mathematical calculations to the average person and thus is unrealistic in the real world [19]. Since strategic decisions result in outcomes beyond the decision makers time for making the decision. Prospect theory isn't applicable in situations of uncertainty. Though a theory of decisions under risk. most strategic choices are related uncertainty rather than a well-defined risk [20].

B. Conceptual Framework

The variables of this study comprised of one dependent variable (community project performance) and two independent variables (project risk avoidance, risk reduction) as shown in figure 1 below.

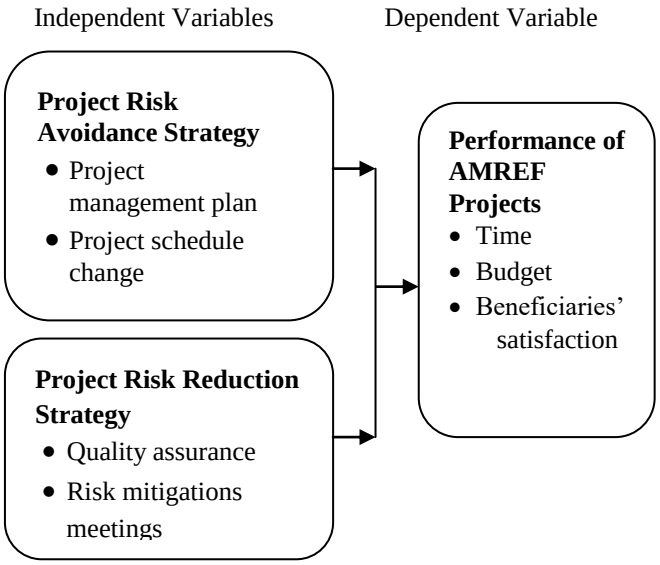

Fig 1: Conceptual Framework

1) Risk Avoidance Strategy

Risk avoidance refers to not accepting the risk or any activity to ensure that risk will not occur [21]. A risk avoidance methodology seeks to minimize vulnerabilities that can represent a threat. It's considered to be the easiest way of handling project risk though it is not possible since it relies on removal of project tasks that are related to the tasks. Not all project risks are removable and thus, some may be too costly as they may need change in timeline, scope, and other resources. It is therefore crucial to do a cost benefit analysis on the various risks that are to be removed. This strategy is normally implemented when the risks associate with the projects have significant negative impact that are not within the project's threshold. In other cases, it may entail project cancellation should the risk threshold be unacceptable [5]. This strategy is also possible through making changes to the project management plan whereby the project schedule is shortened or extended, the scope reduced or the project strategy is changed [22].

Risk avoidance and mitigation can be performed by policy and procedure, training and education, and technological deployments. Risk avoidance is the most successful risk management method in that by avoiding an activity, any danger of loss is eliminated. This strategy also involves coming up with an alternative strategy that has high chances of success though the cost might be a little bit higher in accomplishing the various tasks. For example, in a project, the project team might opt to use existing technologies rather than change to new technologies though the new technologies have promises of better performance or even a lower cost. In another example, the project team may decide to choose a vendor that has a proven track record though there is a vendor with has significant price incentives so as to void working with the new vendor who is new and thus risky [23].

2) Risk Reduction Strategy

Risk reduction is the process of avoiding risk or reducing the probability and impact of risk. The process of risk reduction begins with risk identification [5]. Unless the risk management team has the required competencies to identify the possible risks the organization cannot anticipate the risk

in advance and prepare itself to face the challenges it may cause. Examples of risks mitigation strategies include redundant activities, choosing of a stable supplier, conducting a safety training, and simplification of processes. The organization's roles and responsibilities must have a provision for risk identification when things could go wrong Knowledge about the strengths and weaknesses of other organizations is also important for the risk identification of an organization. So, a systematic procedure for risk identification for the risk will have to be developed by an organization and it differs from organization to organization [22].

Cost-benefit analysis plays an important role in the RAA [24]. An active management is required for analyzing risk includes identifying, prioritizing of risk and selection. A resource constraint on risk treatment implementation is the project's response to analyze risk which includes identifying, prioritizing risk treatment. Human judgment should not be undermined when it comes to RAA [25] explained the significance of a cost-benefit analysis on risks that exist in the project. They also recommend utilizing an affectability investigation to distinguish hazard parameters that may affect the development of the project, operational period and may prompt failure at a varied point of a life cycle of projects.

3) Project Performance

Project performance is still a major concern in project delivery around the world. This is so that projects have specific goals that must be met as well as a large number of resources that must be used effectively [26]. Internal elements are considered as objective performance metrics because they are measurable, quantifiable, and predictable. As a result, schedule, time, cost, and quality are all measurable, quantifiable, and controlled. Nevertheless, because project stakeholders are numerous and satisfaction varies greatly from one to the next, external elements are considered as subjective performance [27]. Performance of community projects considered an area of interest both in the public and private sector. Project performance denotes both subjective and quantitative criteria for which a project is judged in achievement of the objectives set out to attain. According to [28], the performance of a project can be determined from the perspective of the output and outcome depending on the interests of the stakeholder. Most community projects have multiple stakeholders with different views on the project's purpose and different expectations of what the project must achieve [28]. These stakeholders might include the people who originally identified the need for the project, those who fund the project and those who stand to benefit from the project, the people who are impacted by the project and its outputs, the project team members and the people who have to oversee the project [29].

C. Empirical Review

1) Risk Avoidance Strategy and performance of Projects

In a study by, [14] on 'risk transfer strategies and performance of construction project in Murang'a. The study targeted public secondary schools' projects in Murang'a county. The study found risk avoidance strategy to have the highest influence on performance of public secondary schools' projects in Murang'a county. Risk avoidance strategy had a significant positive impact on performance. [15) examined the effect of risk avoidance strategy on success of construction projects in judiciary at the Narok county courts. The study targeted 60 employees from Narok county courts. The study found that a weak correlation between risk avoidance and construction project success. Thus, according to the study, though risk avoidance is an important risk strategy in project management it doesn't have a significant effect on the construction project success.

2) Risk Reduction Strategy and performance of Projects

[10] studied Project risk management strategies and project performance at the National Hospital Insurance Fund in Kenya' and focused risk reduction or reduction strategy. A descriptive research design was adopted where and targeted 651 management staff. The study found that risk reductions have the greatest effect on NHIF project performance. {30] carried out a study in India to investigate the influence of risk management practices in India construction firms. The study adopted a descriptive research design and questionnaires were developed based on the existing literature. A total of 152 respondents consisting of project managers, project team, supervisors and general managers of 3 construction firms were included in the study. Findings of the study revealed that the 3 construction firms used risk reduction strategies such as safety inspections, safety systems, contingency and detailed work plan to influence the construction projects performance. The study findings further revealed that alternative approaches for risk reduction.

III. RESEARCH METHODOLOGY

A. Research Design

Descriptive research design was adopted as it enabled the researcher to generalize the findings to the study population.

B. Target Population

In Kenya, AMREF Health Africa on December 5, 2016 carried out a 4-year project (2016-2020) that sought to enhance the well-being and health of children and mothers in 4 sub-counties in Siaya County that comprised Ugunja, Alego-Usonga, Bondo and Ugenya. As shown in the AMREF project reports (2021). a total of 131 employees participated. A sample of 99 respondents.

C. Data Analysis

Pearson's correlations coefficients was used to examine the relationship among the independent and the dependent study variables that are set out in the objectives of the study. The regression model is represented below:

$$Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \quad (i)$$

Where;
Y= Performance of Community Development Projects
β_0=Constant
X_1= Risk avoidance strategy
X_2= Risk reduction strategy

IV. RESEARCH FINDINGS AND DISCUSSIONS

A. Descriptive Statistics

The section attempts to establish the influence of digital literacy on the performance of AMREF projects in Kenya. A Likert scale was used where the responses were coded as follows: 1= Strongly Agree, 2= Agree, 3= Neutral, 4= Disagree, 5 = Strongly Disagree. The ranges for the mean will be as follows: Strongly Disagree (1-1.8), Disagree (1.9- 2.6), Neutral (2.7-3.4), Agree (3.5-4.2), and Strongly Agree (4.3-5). The results were presented in tables and analysed and discussed. The descriptive statistics for the study variables are as follows:

1) Risk Avoidance Strategy

The first objective of the study was to determine the influence of project risk avoidance strategy on the performance of AMREF development projects in Kenya. The study attempted to address the research question 'What is the influence of project risk avoidance strategy on the performance of AMREF development projects in Kenya?' According to [21] risk avoidance methodology seeks to minimize vulnerabilities that can represent a threat by not accepting the risk or any activity to ensure that risk will not occur. Though it's the easiest way of handling project risks it not that possible since some risks are impossible to avoid thus, it may be costly and at times needs change of scope, timeline, and other resources. The statistics indicated that the average Risk Avoidance strategy was 3.54 and standard deviation of 1.192 indicated that respondents agreed on the indicators of Risk Avoidance Strategy as a Risk management strategy on the performance of AMREF development projects in Kenya.

Table 1: Risk Avoidance Strategy

Risk Avoidance Strategy	SD %	D %	N %	A %	SA %
To deal with certain risks AMREF sometimes changes the project management plan.	3.3	10	16.7	46.7	23.3
AMREF in some occasions extends or shortens the project schedule to avoid some certain risks.	0	6.7	10	30	33.3
Where possible, AMREF initiates scope changes to avoid some certain project risks	3.3	10	20	23.3	43.3
In some cases, AMREF project team changes the project strategy to eliminate some of the project risks.	6.7	23.3	20	26.7	23.3
There a system in place that helps to eliminated risky sectors that are undertaken by AMREF.	3.3	20	26.7	26.7	23.3
In some instances, project team members who are uncomfortable with the projects are replaced to avoid other risks	3.3	13.3	20	40	23.3
In some instances when the projects are too risky and unviable AMREF pulls out of such projects.	16.7	26.7	13.3	20	23.3

Majority (70%) of the respondents agreed that AMREF in some occasions changes the project management plan in order to deal with certain risks (M = 3.77, SD = 1.040). Similarly, 63.3% of the respondents also agreed that AMREF occasionally extends the project schedule to avoid certain risks (M =3.50, SD = 1.137). In addition, AMREF sometimes initiates scope changes as a way to avoid certain project risks as supported by 66.6% of the respondents (M = 3.93, SD = 1.172). Respondents (63.3%) also agreed that sometimes the project team members who are uncomfortable with the project are replaced in order to avoid risks (M =3.67, SD = 1.093). Respondents (50%) also agreed that there is a system in place at AMREF to help eliminate the risky sectors projects undertaken by the organization. (M = 3.47, SD = 1.167). The project team in some cases changes the project strategy in order to eliminate some project risks as opined by 50% of the respondents (M= 3.37, SD = 1.273). However, the respondents could not conclude whether or not AMREF pulls out in projects that are too risky (M = 3.07, SD = 1.461).

How does AMREF adopt Risk Avoidance strategy as a Risk Management strategy in its development projects?

Respondents had varied opinion however, based on their responses the respondents unanimously agreed that Risk Avoidance Strategy is applied on situations where the project risks have a negative significant impact on the project performance. On the same, about 63.3% of the respondents also added that whenever the project risks are beyond the project thresholds risk avoidance is implemented and, in some instances, may even lead to cancellation of the project. Majority (66.6%) of the respondents mentioned that AMREF has a contingency plan as an alternative to deal with risk issues that can be avoided. The sentiments are also recommended by [31] who suggested that suggested that risk avoidance entails the adoption of contingency plan in eliminations of a hazard. Respondents (70%) generally agreed that the Risk avoidance Strategy is only applicable when there are policies that have been laid done on how the risks management strategies will be selected. The respondents (50%) also mentioned that it is crucial to do a cost benefit analysis on the various risks to be avoided.

Respondents pointed out that in stakeholders expectations and interests are some of the examples of the risks that sometimes are avoid. It is difficult to meet the expectations of the numerous stakeholders in projects because they

sometimes have conflict interests. Thus, Risk avoidance strategy is used especially where the interests of particular stakeholders are avoided and alternative met after careful consideration. The stakeholder theory explained that that stakeholder's needs and interests cannot be equitably reconciled [32]. [33] asserted that stakeholder theory helps managers in making decisions on how they can balance interests of all stakeholders surrounding organizations to ensure that they maintain the support they receive from the stakeholders.

To mention a few, AMREF in some instances has opted to use previous suppliers in the projects since they are sure of achieving certain performance thresholds due to their proven track record even though there are other suppliers who are promising better performance. According to [22] Risk Avoidance as a strategy is possible through changes to the project management plan whereby the project schedule is shortened or extended, the scope reduced or the project strategy is changed. [23] opined that Risk avoidance is the most successful risk management method in that by avoiding an activity, any danger of loss is eliminated. The strategy also involves coming up with an alternative strategy that has high chances of success though the cost might be a little bit higher in accomplishing the various tasks.

2) Risk Reduction Strategy

The second objective of the study was to establish the influence of project risk reduction strategy on the performance of AMREF development projects in Kenya. The objective was also guided by the research question 'What is the influence of project risk reduction strategy on the performance of AMREF development projects in Kenya.?' According to the [5] Risk reduction is the process of avoiding risk or reducing the probability and impact of risk. The process of risk reduction begins with risk identification. This is because sometimes the risk management team lacks the required competences to identify the possible risks the organization cannot anticipate in advance and prepare itself to face the challenges it may cause. The [22] asserted that the organization has to develop a systematic procedure for identifying risks based on the knowledge of what could go wrong in terms of the strength and weakness of the organization. From the statistics the average Risk Reduction Strategy of 3.65 and standard deviation of 1.289 indicated that the respondents agreed on the indicators of Risk Reduction strategy on the performance of AMREF development projects in Kenya.

Table 2: Risk Reduction Strategy

Risk Reduction Strategy	SD %	D %	N %	A %	SA %
AMREF ensures simplification of the project process to reduce some of the project risks.	10	33.3	23.3	20	13.3
To ensure continuity in the project implementation process, AMREF ensures there is a stable supplier for the project resources.	6.7	26.7	26.7	23.3	16.7
The project team is trained on how to handle some of the risks to ensure they are equipped with the right skills to handle them for future occurrence.	10	16.7	6.7	23.3	43.3
The project team ensures redundant activities are dealt with to reduce some of the project risks.	6.7	6.7	6.7	33.3	46.7
AMREF has measures in place for improving on positive risks	10	3.3	3.3	36.7	46.7
The organization has fixed measures in place to deal with all possible risks	10	10	6.7	23.3	50
AMREF ensures cost overruns are well estimated in order to handle the risks	6.7	10	23.3	30	30
AMREF projects have been cushioned with measures to anticipate risks	10	16.7	10	30	33.3

Majority of the respondents (43.3%) disagreed that AMREF ensures simplification of project processes to reduce project risks (M = 2.93, SD = 1.230). To ensure continuity in the project implementation process, 40% agreed that AMREF ensures to have a stable supplier for the project resources (M = 3.17, SD = 1.206). Majority of the respondents (66.6%) agreed that the project team is trained to handle some of the risks to equipe them with the right skills to handle future risks in case they occur (M = 3.73, SD = 1.437). Majority of the respondents (80%) agreed that the project team ensures they deal with redundant activities to reduces some of the project risks (M = 4.07, SD = 1.202). Majority of the respondents (83.4%) agreed that there are measures in place at AMREF to improve on the positive risks (M = 4.09, SD = 1.258). In addition, AMREF has fixed measures in place to deal with all the possible risks as agreed by 73.3% of the respondents (M = 3.93, SD = 1.388). For the AMREF development projects, cost overruns are well estimated to reduce such risks as agreed by 60% of the respondents (M = 3.67, SD = 1.213). Finally, respondents (63.3%) agreed that AMREF projects have been cushioned with measures to anticipate risks (M = 3.60, SD = 1.380).

In your opinion how has AMREF implemented Risk Reduction Strategy to ensure performance of development projects?

In regard to implementation of Risk Reduction Strategy, the respondents differed in opinion however several key

reduction strategies were mentioned. About 68% of the respondents mentioned training, where AMREF ensures the project team are trained to handle risk situations in projects. AMREF also ensures that it adheres to compliance of Statutory bodies such as National Environmental Management Authority (NEMA), National Construction Authority (NCA), public health and others. With compliance to those bodies, it ensures it has reduced the likely hood of some risks as the compliances ensures specific standards are met. In other examples, 43.3% of the respondents opined that redundant activities are eliminated to ensure the implementation process is smooth. About 60% of the respondents also mentioned that AMREF has specific suppliers that have been tested and verified to be stable in supplying the project resources and thus, this eliminates issues like delays, non-conformance to standards, and payment issues.

However, 33.4% of the respondents believed that AMREF is able to reduce the project risks as it ensures the project simples are simplified through involvements of experts, stakeholder engagement and involvement, benchmarking, and also borrowing from lesson learnt from previous similar projects. According to the [22], the organization needs to have a systematic risk identification procedure to ensure the organization has the knowledge of the possible risks and is well prepared to dela with them. According to [28] communication of risk appraisal process in important in alleviating the project risks. There must be an assessment regarding the likelihood of risk where several quantitative techniques are available to assess the risk. A team must be constituted to study those quantitative techniques and pick the relevant ones. Qualitative methods of risk assessment should also be used such as those which classify risk to be low, medium and high qualitatively. Cost-benefit analysis plays an important role in the risk assessment and analysis [24].

3) Performance of AMREF Projects

The main objective of the study was to investigate the influence of project risk management strategies on the performance of AMREF projects Kenya. The objective was measured by timeliness of completion, adherence to budget, and beneficiaries' satisfaction. [26] argued that Project performance is still a major concern in project delivery around the world since projects have specific goals that must be met as well as a large number of resources that must be used effectively. [27] posited that Internal elements are considered as objective performance metrics because they are measurable, quantifiable, and predictable. As a result, schedule, time, cost, and quality are all measurable, quantifiable, and controlled. Nevertheless, because project stakeholders are numerous and satisfaction varies greatly from one to the next, external elements are considered as subjective performance metrics. Most community projects have multiple stakeholders with different views on the project's purpose and different expectations of what the project must achieve [28].

A project is considered to have attained objectives if it achieves what it set out at the beginning. For instance, community projects need to be able to improve the livelihoods of the people for whom the project serves. Timely completion on the other hand assesses whether various milestones of the project are achieved as set out during planning. Each of the milestone including the project completion of closure need to be completed at the scheduled time for the project to be considered successful. A project is considered successful if it is completed on time at cost and according to the specifications of the customer [28]. In a development project the management of time is critical, thus predicting a likelihood that schedule delay plays a key role in overall project success [29].

Table 3: Performance of AMREF Projects

Performance of AMREF Projects	SD %	D %	N %	A %	SA %
Due to risk management strategies the number of risks affecting the projects have been dealt with.	10	6.7	6.7	23.3	53.3
Risk management strategies has ensured timely delivery of projects by AMREF.	13.3	3.3	6.7	20	56.7
AMREF development have been completed within their desired budgets.	13.3	3.3	3.3	26.7	53.3
Due to risk management strategies, AMREF projects have witnessed minimal cost overruns.	13.3	13.3	6.7	23.3	43.3
Stakeholders of AMREF projects are satisfied with the community projects delivered.	6.7	6.7	20	36.7	30
Risk management strategies have ensured quality projects by AMREF	3.3	10	30	23.3	33.3
Project stakeholders can intervene in the project to ensure their interests are well taken care off	3.3	10	20	30	36.7
The project beneficiaries are involved in the project activities	6.7	10	20	43.3	20

The statistics indicated that majority (76.6%) of the respondents agreed that the number of risks affecting the development project undertaken by AMREF have been delt with due to adoption of risk management strategies (M = 4.03, SD = 1.351). Risk management strategies has ensured

timely delivery of projects undertaken by AMREF as agreed by a majority of 76.7% of the respondents (M = 4.21, SD = 1.402). The respondents also agreed that AMREF development projects have been completed within their desired budgets (M = 4.01, SD = 1.402). Respondents (66.6%) also agreed that adoption of risk management strategies has ensured AMREF projects witnessed minimal cost overruns (M =3.70, SD = 1.489). Majority (66.7%) of the respondents agreed that the stakeholders of the AMREF development projects are satisfied with the community projects delivered (M = 3.77, SD = 1.165). Respondents (56.6%) also agreed that due to risk management strategies the AMREF development projects are desired quality (M =3.67, SD = 1.143). The respondents (66.7%) also agreed that the project stakeholders can intervene to ensure their interests are addressed (M = 3.73, SD = 1.090). Lastly, majority (63.3%) of the respondents agreed that the project beneficiaries are involved in the project activities (M = 3.54, SD = 1.176).

B. Diagnostic tests

1. Autocorrelation

Autocorrelation also called serial correlation occurs when the error terms are correlated. It is a correlation coefficient between two different variables that show correlation of two values of the same variable at a given time series [34]. To ascertain autocorrelation, the Durbin-Watson statistic will be calculated and the resulting value will be compared with the acceptable threshold which is usually a value near 2. A value of 0 to less than 2 implies that autocorrelation hasn't been detected therefore the data is fit for use. A value close to zero (0) implies positive correlation while a value from 2 to 4 indicates a negative correlation [35]. In this study, the Durbin-Watson value was 1.955<2 thus, no autocorrelation was detected.

Table 4: Autocorrelation Test

Model	Durbin-Watson
1	1.955

2. Correlation Analysis

Correlation analysis was used to determine the magnitude, significance, and direction of the relationship. Pearson correlation analysis (r) was used to determine the strength of association between independent variables (Risk Avoidance Strategy and Risk Reduction Strategy) and the dependent variable (Performance of AMREF projects).

Table 5: Correlation Matrix

		Employee Performance
Risk Avoidance Strategy	Pearson Correlation	.513**
	Sig. (2-tailed)	.000
	N	90
Risk Reduction Strategy	Pearson Correlation	.683**
	Sig. (2-tailed)	.003
	N	90

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

Table 5 show a correlation (r = 0.513; p<0.000) between Risk Avoidance Strategy and performance of AMREF development projects in Kenya. This implies that the Risk Avoidance Strategy is positively correlated to the performance of AMREF development projects in Kenya. In addition, the correlation between these two variables was significant, that is p (.000) <0.05 implying a linear relationship between Risk Avoidance Strategy and performance of AMREF development projects in Kenya. The findings concur with [36] who found a positive significant correlation (r = .236, p = .008) between Risk Avoidance Strategy and performance of NGOs projects in Nairobi County.

There is a positive, significant, and strong correlation (r = 0.683; p<0.003) between Risk Reduction Strategy and performance of AMREF development projects in Kenya. This implies that the Risk Reduction Strategy is positively correlated to the performance of AMREF development projects in Kenya. In addition, the correlation between these two variables was significant, that is p (.003) <0.05 implying a linear relationship between Risk Reduction Strategy and performance of AMREF development projects in Kenya. The findings are however contrary to [36] who found an insignificant correlation (r = .029, p = .752) between Risk Reduction strategy and performance of NGOs projects in Nairobi County. [14] also found a positive weak correlation (r = .427, p = .000) between Risk Avoidance Strategy and performance of public-schools construction projects in Murang'a County.

3. Analysis of Variance

The analysis of variance was used to examine whether the regression model was a good fit for the data. The F-critical (4, 85) was 2.479 while the F-calculated was 77.129 as shown in Table 6. This shows that F-calculated was greater than the F-critical and hence linear relationship between the Risk Management Strategies and performance of AMREF Projects in Kenya. In addition, the p-value was 0.000, which was less than the significance level (0.05). Therefore, the model can be considered to be a good fit for the data and hence it is appropriate in predicting the influence of the four independent variables (Risk Management Strategies) on the dependent variable (performance of AMREF Projects).

Table 6: ANOVA Test

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	433.514	4	108.378	77.129	.000[b]
	Residual	119.425	85	1.405		
	Total	552.939	89			

a. Dependent Variable: Performance of AMREF Projects

4. Regression Coefficients

Further, the study ran the procedure of obtaining the regression coefficients, and the results were as shown on the Table 4.20. The coefficients or beta weights for each variable allows the researcher to relative importance comparatively of the Risk Management Strategies. In this study the unstandardized coefficients and standardized coefficients are given for the multiple regression equations. However,

discussions are based on both the unstandardized and standardized coefficients. The following regression model was used;

Table 7: Regression Results

a. Dependent Variable: Performance of AMREF Projects

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	21.384	5.177		4.130	.000
Risk Avoidance Strategy	.512	.180	.659	2.843	0.005
Risk Reduction Strategy	.607	.159	.792	3.820	0.000

Risk Avoidance Strategy has a strong positive significant (P= .005< 0.05) relationship (r = .659) with performance of AMREF development project. The coefficients of estimate were also significant (β1 = .512, r = .659, p-value = .005 < .05). The effect is supported by the t-calculated = 32.843 > t-critical =1.987 at a 5 percent level of significance. Risk Avoidance Strategy influence performance by .659 or 65.9%, thus we conclude that Risk Avoidance Strategy significantly influence performance of AMREF development projects in Kenya. The findings are supported by Njuguna (2019) who found a positive significant relationship (p = .000 < .05, r = .175) between Risk Prevention and performance of projects in Nairobi City County in Kenya. Similarly, [36] in a study of Risk Management Strategies and performance of NGOs projects in Nairobi County found a positive relationship (p = .011< .05, r = .302) between Risk Avoidance Strategy and performance of NGOs projects. [14] also found a positive significant relationship ((β = .265, p-value = .001 < .05, r = .302) between Risk Avoidance strategy and performance of public-school construction projects in Murang'a County. However, the findings were contrary to [15] in their studies on risk avoidance strategies in construction companies established that risk avoidance did not significantly influence performance of construction projects in Narok County.

In addition, the findings indicate that Risk Reduction Strategy had strong positive significant (p =.0000, r =.792) relationship with performance of AMREF development projects in Kenya. The variable also had significant coefficients of estimate (β2 = .607, p-value = .000 < .05, r = .792). The influence of Risk Reduction Strategy is supported by the t value where t calculated = 3.820 > t critical =1.987 at a 5 percent level of significance, thus we conclude that Risk Reduction Strategy significantly influence performance of AMREF development projects in Kenya by .792 or 79.2%. The findings are however contrary to [36] who found positive weak insignificant relationship (β = 2.227, p-value = .002 < .05, r = .219) between Risk Reduction Strategy with performance of NGOs projects in Nairobi County.

V.CONCLUSION

The study found a strong positive correlation between Project Risk management Strategies and performance of AMREF development projects in Kenya. The study concludes that Project Risk Management Strategies significantly influence performance of projects. The findings are supported by previous studies [4] who found a strong positive relationship between risk management strategies and performance of projects in Nairobi City County in Kenya, [36] found Risk Management to have a positive weak correlation with performance of NGOs projects in Nairobi City County. The study concluded that Risk Avoidance Strategy significantly influenced performance of AMREF development projects. The study thus recommends AMREF to sometimes change its project strategy in order to eliminate some of the project risk. Whenever there too many risks in a project to affect its viability pulling out is also an option after a careful consideration of benefits of the project. The study also recommends a thorough cost benefit analysis on the various risks before adopting avoidance strategy. However, a change of scope, schedule, or even project management plan is recommended in order to avoid some certain risks. The study found Risk Reduction Strategy to significantly influence performance of AMREF development project in Kenya. The study thus recommends development of a systematic procedure for identification of risks. Project manager should also ensure there is a through risk assessment in order to determine the risks that can be reduced.

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