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RISK MANAGEMENT STRATEGIES AND PERFORMANCE OF NGO-LED WASH PROJECTS IN ISIOLO COUNTY, KENYA

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ABSTRACT

In Kenya, NGO-led Water, Sanitation, and Hygiene (WASH) projects are crucial in addressing the pressing needs for clean water and improved sanitation facilities, particularly in underserved regions. However, in Isiolo County, Kenya, NGO-led WASH projects face considerable challenges that undermine their effectiveness. Isiolo is characterized by arid and semi-arid conditions, which complicate the provision of reliable water sources and sanitation facilities. Recent data highlights that nearly 60% of the population in Isiolo County lacks access to safe drinking water, and sanitation coverage is similarly inadequate. The general objective of the study was to establish the influence of risk management strategies on performance of NGO-led wash projects in Isiolo County, Kenya. Specifically, the study sought to establish the influence of risk reduction on performance of NGO-led wash projects in Isiolo County, Kenya, to assess the influence of risk transfer on performance of NGO-led wash projects in Isiolo County, Kenya. This study used of a descriptive research design. The study targeted NGO-led wash projects in Isiolo County, Kenya. According to the NGO Coordination Board as of 31st December 2023, there are 36 NGO-led wash projects in Isiolo County, Kenya. The study targeted management employees working with these NGOs. The total population was therefore 216 respondents. The study used simple random sampling in selecting the sample from study population. The researcher obtained a letter of confirmation from the University for Collection of data. A research permit was also obtained from National Commission for Science, Technology and Innovation. Primary data was used in this study. The study's primary data was obtained using a structured questionnaire. The study conducted a pilot study on 10% of the sample hence 14 respondents. This study used both construct validity and content validity. The Cronbach Alpha coefficient was used to measure the consistency of variables. Primary data was analyzed using both descriptive statistics (frequency, percentage, mean) and inferential statistics that included Pearson correlation and regression. The findings revealed that strategies had a significant positive impact on project performance, with risk transfer having the highest coefficient (0.387, $p = 0.000$), followed by risk reduction (0.345, $p = 0.000$). These results suggest that risk management is critical to project success, with risk transfer being the most effective. It is concluded that implementing comprehensive risk management strategies enhances project outcomes. The study recommends NGOs to prioritize risk transfer through contracts, reinforce preventive measures to further improve performance.

Key Words: Risk Management Strategies, Risk Reduction, Risk Transfer, Performance, NGO-Led Wash Projects, Isiolo County

Background of the Study

The performance of NGO-led Water, Sanitation, and Hygiene (WASH) projects is a critical area of study due to the profound impact these initiatives have on public health and community well-being. Non-Governmental Organizations (NGOs) often play a pivotal role in implementing WASH projects, particularly in underserved and developing regions where government infrastructure may be lacking or insufficient. These projects aim to improve access to clean water, enhance sanitation facilities, and promote effective hygiene practices, which are essential for preventing waterborne diseases and ensuring overall health (Tahit, Tahir & Shujaat, 2020).

Historically, the success of NGO-led WASH projects has been mixed, with some initiatives leading to significant improvements in community health and quality of life, while others have faced challenges related to sustainability, community engagement, and resource management (Ali, *et al*, 2020). The effectiveness of these projects can be influenced by various factors, including the design and implementation strategies, the level of local stakeholder involvement, and the adequacy of funding and resources. Evaluating the performance of these projects involves assessing both the short-term outcomes, such as improvements in water quality and sanitation infrastructure, and the long-term impacts, such as behavioral changes and the sustainability of the interventions (Yirenkyi-Fianko & Chileshe, 2023).

In recent years, there has been an increased focus on understanding the factors that contribute to the success or failure of WASH projects led by NGOs. This includes examining the role of local context, the adaptability of project models, and the capacity of implementing organizations. Researchers and practitioners are interested in identifying best practices and lessons learned to enhance the effectiveness of future interventions. By analyzing case studies, conducting field surveys, and evaluating project data, stakeholders aim to develop more robust frameworks for assessing and improving the performance of NGO-led WASH projects, ultimately contributing to better health outcomes and more resilient communities (Chipozya & Khatleli, 2020).

Statement of the Problem

In Kenya, NGO-led Water, Sanitation, and Hygiene (WASH) projects are crucial in addressing the pressing needs for clean water and improved sanitation facilities, particularly in underserved regions. These projects play a significant role in mitigating the risks associated with waterborne diseases, enhancing public health, and contributing to the overall socio-economic development of communities (Otieno & Mutiso, 2021). By providing access to safe water sources and promoting hygienic practices, these initiatives help reduce the prevalence of diseases, lower healthcare costs, and improve educational outcomes by reducing the time spent on water collection. In a country where access to clean water and sanitation remains a challenge, the success of these projects is pivotal for sustainable development and poverty alleviation (Ebola & Nyang'au, 2021).

However, in Isiolo County, Kenya, NGO-led WASH projects face considerable challenges that undermine their effectiveness. Isiolo is characterized by arid and semi-arid conditions, which complicate the provision of reliable water sources and sanitation facilities. Recent data highlights that nearly 60% of the population in Isiolo County lacks access to safe drinking water, and sanitation coverage is similarly inadequate (Ondara, Bula & Kamau, 2020). Despite significant investments from NGOs, many projects in the region struggle with issues such as inadequate infrastructure, low community involvement, and high rates of project abandonment. For instance, a 2023 assessment revealed that only 40% of completed WASH projects in Isiolo were functioning optimally, with many failing to sustain operations beyond the initial implementation phase (Aduma & Kimutai, 2020).

The implementation of effective risk management strategies can significantly influence the performance of NGO-led WASH projects by addressing potential challenges proactively. Risk management involves identifying, assessing, and mitigating risks that could impede project

success, such as logistical issues, financial constraints, and community resistance. By adopting comprehensive risk management frameworks, NGOs can enhance project planning, improve resource allocation, and strengthen stakeholder engagement (Nguru & Kaburu, 2023). Effective risk management ensures that potential problems are anticipated and addressed before they escalate, leading to more resilient and sustainable project outcomes. In Isiolo County, where environmental and socio-economic risks are particularly pronounced, robust risk management practices can be the key to improving the overall performance and impact of WASH projects, ensuring that they meet their objectives and deliver lasting benefits to the community (Otieno & Mutiso, 2021). This study therefore sought to establish the influence of risk management strategies on performance of NGO-led wash projects in Isiolo County, Kenya.

Objectives of the Study

The general objective of the study was to establish the influence of risk management strategies on performance of NGO-led wash projects in Isiolo County, Kenya

Specific Objectives

i. To establish the influence of risk reduction on performance of NGO-led wash projects in Isiolo County, Kenya
ii. To assess the influence of risk transfer on performance of NGO-led wash projects in Isiolo County, Kenya

LITERATURE REVIEW

Theoretical Framework

Contingency Theory

Contingency Theory developed by Austrian psychologist, Professor Fred Fiedler in the 1960s is a management framework that suggests there is no universal approach to organizing and managing organizations. Instead, the optimal organizational structure and management practices depend on various factors, including the organization's environment, strategy, technology, and size. Contingency Theory posits that different situations require different organizational responses, and there is no one-size-fits-all solution to management problems (Butt, *et al*, 2021). Contingency Theory emphasizes the importance of matching organizational practices with the demands of the external environment. It suggests that effective organizations adapt their structures, processes, and resource allocation mechanisms to fit the unique contingencies they face. This theory recognizes that what works in one situation may not work in another and encourages managers to analyze and understand the specific contingencies affecting their organization (Igihizo & Irechukwu, 2022).

The theory operates on several key assumptions. Firstly, it assumes that organizations operate within complex and dynamic environments characterized by uncertainty and change. Secondly, Contingency Theory assumes that there is no universally best way to organize and manage organizations; instead, the effectiveness of organizational practices depends on the fit between the organization and its environment. Thirdly, it assumes that organizations must be flexible and adaptable, able to adjust their structures and practices in response to changing circumstances and contingencies (Mutunga & Ondara, 2021).

Despite its contributions to the field of management, Contingency Theory has faced several critiques. One criticism is that it can be overly deterministic, suggesting that organizational practices are entirely determined by external contingencies. This perspective overlooks the role of human agency and decision-making in shaping organizational outcomes (Gathigia & Wairimu, 2023). Additionally, some argue that Contingency Theory lacks prescriptive guidance, providing little practical advice for managers on how to analyze and respond to contingencies effectively. Moreover, critics suggest that the theory may lead to an overly fragmented view of management, where each situation requires a unique solution, making it challenging to develop generalizable principles and best practices (Kinyua, Ogolla & Mburu,

2020). This theory was relevant in establishing the influence of risk reduction on performance of NGO-led wash projects in Isiolo County, Kenya.

Agency Theory

Agency Theory developed by Jensen and Meckling (1976) is a concept rooted in economics and management that examines the relationship between principals and agents. The theory primarily addresses the issues that arise when one party (the principal) delegates decision-making authority to another party (the agent). This delegation can lead to conflicts of interest and information asymmetry, where the agent might pursue personal objectives that are not necessarily aligned with the principal's goals (Kabweine, *et al*, 2023). At its core, Agency Theory explores the challenges of ensuring that agents act in the best interests of principals. Principals often face difficulties in monitoring and controlling the actions of agents, which can lead to inefficiencies and suboptimal outcomes. For instance, in a corporate setting, shareholders (principals) rely on managers (agents) to make decisions that maximize shareholder value. However, managers might prioritize personal gains, such as bonuses or job security, which could lead them to make decisions that are not necessarily beneficial for the shareholders (Rutabubura & Mulyungi, 2020).

To address these issues, Agency Theory suggests various mechanisms to align the interests of agents with those of principals. These mechanisms include incentive structures, such as performance-based compensation, and monitoring systems, like regular audits or performance reviews. By designing appropriate contracts and monitoring systems, principals can reduce the likelihood of agents acting against their interests and thus mitigate the problems associated with agency relationships (Macharia & Kirui, 2020).

Agency Theory is based on several key assumptions that underpin its analysis of principal-agent relationships. One fundamental assumption is that individuals are rational actors who seek to maximize their own utility. This implies that agents act in their own best interests, which may not always align with the goals of the principals (Gitonga & Nyang'au, 2023). Another crucial assumption is the presence of information asymmetry, where agents have more information about their actions and intentions than principals do. This discrepancy can lead to challenges in monitoring and ensuring that agents act in the best interests of principals. Additionally, Agency Theory assumes that contracts and incentive structures can be designed to mitigate these issues. The theory relies on the idea that principals can create mechanisms to align the interests of agents with their own by offering financial incentives or implementing monitoring systems (Odhiambo & Senelwa, 2021).

Despite its usefulness, Agency Theory has faced several critiques. One major critique is its reliance on the assumption of rational self-interest. Critics argue that this view oversimplifies human behavior by ignoring the roles of ethics, values, and social norms in decision-making. In reality, individuals may act based on moral considerations or long-term relationships, which can complicate the straightforward pursuit of self-interest (Kabweine, *et al*, 2023). Another criticism is the theory's focus on formal contracts and incentive systems, which can overlook informal aspects of organizational behavior, such as trust and organizational culture. Critics also point out that Agency Theory can sometimes lead to excessive emphasis on short-term financial incentives, potentially undermining long-term organizational health and employee satisfaction (Rutabubura & Mulyungi, 2020). Moreover, the theory often assumes a clear separation between principals and agents, which may not accurately reflect the complexities and interdependencies within modern organizations. These critiques suggest that while Agency Theory provides a useful framework for understanding principal-agent relationships, it may need to be complemented with additional perspectives to address its limitations (Macharia & Kirui, 2020). This theory was relevant in assessing the influence of risk transfer on performance of NGO-led wash projects in Isiolo County, Kenya

Conceptual Framework

Conceptual framework refers to a diagrammatic set of interrelated ideas on a particular phenomenon and it's characterized by cause and effect relationships which helps interpret more and hence making it easily understandable. This makes it more straightforward and also easily predictable (Svinicki, 2019).

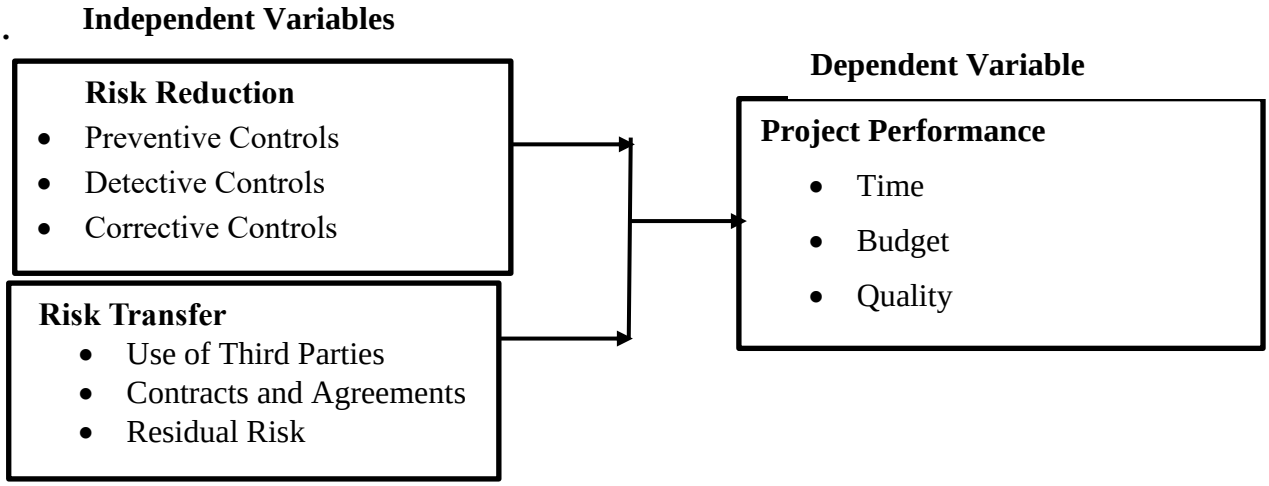

Figure 2. 1: Conceptual Framework

Risk Reduction

Risk reduction involves implementing measures and strategies to minimize the likelihood or impact of potential risks. This approach is about managing and controlling risks to an acceptable level rather than trying to avoid them entirely (Butt, *et al*, 2021). Preventive controls are proactive measures designed to prevent risks or issues from occurring in the first place. These controls aim to establish systems, procedures, and policies that reduce the likelihood of undesirable events or non-compliance before they happen. For example, in a business context, preventive controls might include implementing stringent security protocols to safeguard against data breaches or designing comprehensive training programs to ensure employees follow safety and regulatory standards. By addressing potential problems before they arise, preventive controls help create a secure and efficient operating environment, reducing the need for corrective actions later. These controls are integral to risk management strategies, as they proactively address vulnerabilities and aim to prevent issues from materializing (Igihizo & Irechukwu, 2022).

Detective controls are designed to identify and detect issues or deviations from expected performance once they have occurred. Unlike preventive controls, which aim to avoid problems, detective controls focus on identifying problems or breaches that have already happened, allowing for timely response and resolution. Examples of detective controls include monitoring systems that alert management to unusual financial transactions, conducting regular audits to uncover discrepancies, or employing surveillance systems to identify unauthorized access to sensitive areas. By promptly detecting issues, these controls help organizations respond quickly to mitigate damage and prevent further issues. Detective controls are crucial for ensuring that any problems that slip through preventive measures are identified and addressed as early as possible (Mutunga & Ondara, 2021).

Corrective controls are reactive measures implemented to address and rectify problems or deviations that have already occurred. These controls come into play after an issue has been detected, with the goal of resolving the problem and preventing its recurrence. Corrective actions may include revising policies, repairing damaged systems, or taking disciplinary measures against individuals who have violated procedures. For instance, if a security breach occurs, corrective controls might involve enhancing security measures, conducting a thorough investigation, and implementing new protocols to prevent future breaches. While corrective controls are essential for addressing immediate issues and restoring normal operations, they are

often considered less ideal compared to preventive controls, as they deal with problems after they have impacted the organization. Nevertheless, effective corrective controls are critical for continuous improvement and resilience in any risk management strategy (Gathigia & Wairimu, 2023).

Risk Transfer

Risk transfer involves shifting the financial burden or responsibility of a potential risk from one party to another. This strategy is commonly used to manage and mitigate risks by making another entity responsible for handling the consequences should a risk materialize. Risk transfer is typically achieved through contractual agreements, insurance policies, or outsourcing arrangements (Fikadu, & Kant, 2023). The use of third parties is a common strategy in risk management where organizations delegate certain functions or responsibilities to external entities. This approach allows businesses to leverage the expertise and resources of specialized service providers while mitigating risks associated with those functions (Gathigia, & Wairimu, 2023). For instance, a company might outsource its IT services, human resources, or logistics to third-party providers who are better equipped to handle these areas effectively (Egboga, & Worlu, 2020). By doing so, the organization transfers specific risks—such as those related to operational inefficiencies, compliance issues, or data security—to the third-party provider. However, it is crucial for organizations to carefully select and monitor these third parties, as the risks associated with their performance and reliability can still impact the primary organization. Proper due diligence, regular audits, and clear communication are essential to ensure that third-party relationships are managed effectively and that the risks are adequately controlled (Ebola, & Nyang'au, 2021).

Contracts and agreements play a pivotal role in risk transfer and management when engaging with third parties. These legal documents outline the terms, conditions, and responsibilities of each party involved, including how risks and liabilities were addressed (Chipozya, & Khatleli, 2020). Well-drafted contracts specify the scope of services, performance standards, and the mechanisms for resolving disputes, thus providing a framework for managing expectations and responsibilities. For example, an outsourcing contract might include clauses that address indemnification, liability limitations, and compliance with relevant regulations. By clearly defining these terms, organizations can reduce uncertainties and ensure that both, 2023). Contracts also often include provisions for risk mitigation, such as insurance requirements and regular performance reviews, to safeguard against potential issues. Ensuring that contracts are thorough and carefully negotiated is crucial for effectively managing risks associated with third-party relationships (Bukar, & Ibrahim, 2021).

Residual risk refers to the level of risk that remains after all risk management strategies have been applied. Despite implementing comprehensive risk controls, it is often impossible to eliminate all risks entirely. Residual risk represents the exposure that an organization or individual still faces after all mitigation efforts have been exhausted (Alsaadi, & Norhayatizakuan, 2020). For instance, even with robust cybersecurity measures in place, there might still be a residual risk of a data breach due to evolving threats. Organizations must continuously monitor and reassess residual risks to ensure they are within acceptable levels and adjust their risk management strategies as needed (Algremazy, *et al*, 2023). Understanding and managing residual risk is crucial for maintaining resilience and preparedness, as it helps organizations anticipate potential issues and implement contingency plans to address them. Regular risk assessments and updates to risk management practices are essential to effectively handle residual risk and ensure that it does not escalate into more significant problems (Aduma, & Kimutai, 2020).

Empirical Review

Risk Reduction and Project Performance

Butt, *et al* (2021) examined on the effect of risk reduction on performance of construction projects in Pakistan. The exploration project utilized quantitative examination plan. The

number of inhabitants in the exploration study comprise of enlisted engineers, project chiefs and experts identified with development industry in Pakistan. The study found that there is strong positive relation between risk reduction and project performance. The study concluded that risk reduction has positive impact on project performance.

Igihizo and Irechukwu (2022) investigated on risk reduction and Performance of Mpazi Channel construction project in Nyabugogo, Kigali-Rwanda. The descriptive research design with a mixed qualitative and quantitative approach was used to a sample of 118 respondents selected from 168 target population using stratified sampling technique and Sloven's formula. The study found that risk reduction and performance of Mpazi channel construction project has a highly positive and significant relationship. The study concluded that risk reduction has an impact on the performance of the Mpazi Channel construction project.

Mutunga and Ondara (2021) conducted a study on risk reduction and project performance at Kenya Airports Authority. The examination plan for this investigation was descriptive. The research population was made up of 281 staff which was from KAA projects' board division. The study found that risk reduction significantly affects project performance at Kenya Airport Authority. The study concluded that risk reduction contributes significantly to project performance at Kenya Airport Authority.

Gathigia and Wairimu (2023) assessed on risk reduction and performance of infrastructural projects in Nakuru County, Kenya. The study adopted a cross-sectional survey design. The unit of observation was 201 project managers of the infrastructural projects. Yamane sampling was used to sample 134 project managers. The study found a strong significant relationship between risk reduction and project performance. The study concluded that risk reduction has an effect on project performance.

Kinyua, Ogolla and Mburu (2020) researched on the effect of risk reduction on project performance of small and medium information communication technology enterprises in Nairobi, Kenya. A descriptive research design was adopted. Target population was 48 ICT SMEs in Nairobi, Kenya. The study adopted random sampling technique to select sample size of the project staff in the target population. The study found that there existed a significant positive relationship between risk reduction and project performance. The study concluded risk reduction t influence project performance.

Risk Transfer and Project Performance

Kabweine, *et al* (2023) conducted a study on the effect of risk transfer on financial performance in Uganda. a case of Kabale municipal council, Kabale district. A descriptive research design was adopted and a sample size of 169, which constituted council employees and beneficiaries was used. The study found a significant effect of risk transfer on financial performance. The study concluded that there is a positive and significant relationship between risk transfer and financial performance.

Rutabubura and Mulyungi (2020) researched on the influence of risk transfer on project success in access to finance Rwanda. Conclusive research design has been selected for this study. The sample size is of 169 from a population of 291 using Slovin's formula. The study found that risk transfer had positive impact on project success at access to finance Rwanda. The study concluded that insuring project staff has a positive and high effect on performance of Access to Finance Rwanda.

Macharia and Kirui (2020) examined on risk transfer and performance of construction projects in public secondary schools in Murang'a County, Kenya. The study employed descriptive research design while judgmental or purposive sampling technique was used to select public secondary schools in Murang'a County to participate in the study. The study found that risk transfer and performance have positive correlation. The study concluded that risk transfer has a significant influence on performance of construction project in secondary schools.

Gitonga and Nyang'au (2023) assessed on risk transfer and performance of air safety projects in civil aviation industry in Nairobi County, Kenya. A descriptive research design was adopted,

and the target population comprised 277 KCAA staff in the ANS department stationed in different stations in Nairobi County. Slovin's formula was used to obtain a sample population of 164 from a target population of 277. The study found that risk transfer had a positive and significant influence on the performance of air safety projects in the civil aviation industry. The study concluded that there is a positive link between risk transfer and the performance of air safety projects in the civil aviation industry in Nairobi County.

Odhiambo and Senelwa (2021) investigated on the effect of project risk transfer on project sustainability of NGO healthcare projects in south Nyanza, Kenya. The study employed a correlational research design. The target population of the study was the project managers of the NGO healthcare projects in South Nyanza. Census survey design was used in the present study on the 93 project managers of the 93 NGO projects in South Nyanza. The study found that risk transfer has a positive significant effect on project sustainability. The study concluded that risk transfer is significantly important in increasing the Project sustainability in the organization.

RESEARCH METHODOLOGY

This study used of a descriptive research design. The study targeted NGO-led wash projects in Isiolo County, Kenya. According to the NGO Coordination Board as of 31st December 2023, there are 36 NGO-led wash projects in Isiolo County, Kenya (NGO Board, 2023). The study targeted management employees working with these NGOs. The total population was therefore 216 respondents. The Yamane formula was adopted to calculate the study sample size. Therefore, the study sample size was 140 respondents. The study used simple random sampling in selecting the sample from study population.

Primary data was used in this study. obtained using semi-structured questionnaires. Inferential and descriptive statistics were employed for analysis of quantitative data with the assistance of Statistical Package for Social Sciences (SPSS version 25). Descriptive statistics such as frequency distribution, mean (measure of dispersion), standard deviation, and percentages were used. Inferential data analysis was conducted by use of Pearson correlation coefficient, and multiple regression analysis.

RESEARCH FINDINGS AND DISCUSSION

The study targeted 140 respondents from the management teams of NGO-led WASH projects in Isiolo County. Out of these, 112 valid responses were received, resulting in a response rate of 80.0%. This response rate meets the recommended threshold of 70% (Sekaran & Bougie, 2016), indicating a good level of participation that strengthens the validity and reliability of the findings. The high response rate suggests that the respondents were adequately engaged and interested in the subject matter, thereby providing data that is reflective of the target population.

Descriptive Analysis

Risk Reduction

The first objective of the study was to establish the influence of risk reduction on performance of NGO-led wash projects in Isiolo County, Kenya. Risk reduction strategies focus on minimizing the likelihood of risks through preventive, detective, and corrective measures. Table 1 presents the findings obtained.

Table 1: Descriptive Statistics for Risk Reduction

Statement	Mean	Std. Dev.
We implement preventive controls to reduce the likelihood of project risks.	3.871	0.802
Preventive measures are effectively integrated into our project planning.	3.843	0.814
Preventive controls have successfully minimized potential issues in our projects.	3.859	0.792
Detective controls are used to identify risks and issues early in the project.	3.872	0.809
We utilize detective measures to monitor and assess project risks continuously.	3.866	0.815
Detective controls help us quickly spot deviations from the project plan.	3.861	0.822
Corrective actions are promptly taken when risks are identified.	3.884	0.799
Our project team effectively implements corrective controls to address issues.	3.856	0.806
Aggregate Score	**3.864**	

The findings indicate that respondents generally agree that risk reduction measures significantly improve the performance of NGO-led WASH projects. With an aggregate score of 3.864, the responses suggest strong agreement and relatively consistent views on the effectiveness of preventive, detective, and corrective controls. Specifically, respondents agreed that preventive controls are implemented to reduce the likelihood of risks (mean = 3.871, SD = 0.802) and are effectively integrated into project planning (mean = 3.843, SD = 0.814). Additionally, preventive controls have successfully minimized potential project issues (mean = 3.859, SD = 0.792). Detective controls are used to identify risks early (mean = 3.872, SD = 0.809) and continuously monitor project risks (mean = 3.866, SD = 0.815). Respondents also agreed that detective controls quickly spot deviations from the project plan (mean = 3.861, SD = 0.822). Finally, corrective actions are promptly taken when risks are identified (mean = 3.884, SD = 0.799), and the project team effectively implements corrective controls to address issues (mean = 3.856, SD = 0.806). The relatively low standard deviations indicate consistent agreement among respondents on the effectiveness of these risk reduction measures in enhancing project performance.

The aggregate mean score of 3.864 indicates agreement among respondents that risk reduction measures enhance project performance. This finding aligns with Butt et al. (2021), who reported a strong positive relationship between risk reduction and project performance in the construction industry. Additionally, Igihizo and Irechukwu (2022) found that risk reduction significantly improves the performance of construction projects in Rwanda.

Risk Transfer

The second objective of the study was to assess the influence of risk transfer on performance of NGO-led wash projects in Isiolo County, Kenya. Risk transfer involves shifting certain risks to third parties, such as through contracts and insurance. Table 2 presents summary of findings obtained.

Table 2: Descriptive Statistics for Risk Transfer

Statement	Mean	Std. Dev.
We effectively use third parties to transfer certain project risks.	3.889	0.787
Engaging third parties successfully mitigates some of our project risks.	3.902	0.795
Third-party involvement in our projects helps manage risk exposure.	3.908	0.781
Contracts and agreements are used to clearly define risk transfer responsibilities.	3.914	0.799
Our project contracts effectively allocate and transfer risks to appropriate parties.	3.897	0.786
We regularly review and update contracts to ensure they manage risk effectively.	3.912	0.804
Residual risks are clearly identified and managed after transferring primary risks.	3.874	0.808
We have strategies in place to address residual risks that remain after risk transfer.	3.906	0.792
Aggregate Score	**3.900**	

The findings suggest strong agreement among respondents regarding the effectiveness of risk transfer strategies in managing project risks, with an aggregate score of 3.900, indicating relatively consistent views. Respondents agreed that third parties are effectively used to transfer certain project risks (mean = 3.889, SD = 0.787) and that engaging these parties successfully mitigates some of the risks (mean = 3.902, SD = 0.795). Furthermore, the involvement of third parties is seen as helpful in managing risk exposure (mean = 3.908, SD = 0.781). Contracts and agreements are frequently used to clearly define risk transfer responsibilities (mean = 3.914, SD = 0.799), and these contracts effectively allocate and transfer risks to appropriate parties (mean = 3.897, SD = 0.786). Regular reviews and updates of contracts ensure they continue to manage risk effectively (mean = 3.912, SD = 0.804). Additionally, respondents agreed that residual risks are clearly identified after primary risks are transferred (mean = 3.874, SD = 0.808), and strategies are in place to manage these residual risks (mean = 3.906, SD = 0.792). Overall, these results reflect a well-structured and proactive approach to risk transfer in managing project risks effectively.

The aggregate mean score of 3.900 demonstrates strong agreement that risk transfer enhances project performance. These findings are consistent with Macharia and Kirui (2020), who observed that risk transfer significantly influences project performance in construction projects in Kenya. Gitonga and Nyang'au (2023) also support this by showing a positive impact of risk transfer on air safety projects in Nairobi's civil aviation industry.

Project Performance

The main focus of this study was to establish the influence of risk management strategies on performance of NGO-led wash projects in Isiolo County, Kenya. The study assessed the performance of WASH projects in relation to the implementation of risk management strategies. Table 3 presents summary of findings obtained.

Table 3: Descriptive Statistics for Project Performance

Statement	Mean	Std. Dev.
Our projects are completed within the scheduled time frame.	3.898	0.792
We consistently meet project deadlines as planned.	3.876	0.807
Time management practices effectively support timely project delivery.	3.891	0.794
We effectively manage and control project costs to avoid budget overruns.	3.881	0.813
Budget forecasting and tracking are accurately handled throughout the project.	3.872	0.799
Unexpected costs are minimized through effective budget management.	3.884	0.805
The quality of deliverables consistently meets project requirements and standards.	3.879	0.811
Quality control processes are effectively implemented in our projects.	3.887	0.808
Aggregate Score	**3.884**	

The findings suggest that respondents agree that the performance of NGO-led WASH projects is generally strong in terms of time, cost, and quality management, with an aggregate score of 3.884, indicating consistency in the responses. Respondents agreed that their projects are completed within the scheduled time frame (mean = 3.898, SD = 0.792), and they consistently meet project deadlines as planned (mean = 3.876, SD = 0.807). Time management practices are effectively supporting timely project delivery (mean = 3.891, SD = 0.794). In terms of financial control, respondents indicated that project costs are well-managed to avoid budget overruns (mean = 3.881, SD = 0.813), with accurate budget forecasting and tracking throughout the project (mean = 3.872, SD = 0.799). Additionally, unexpected costs are minimized through effective budget management (mean = 3.884, SD = 0.805). In terms of quality, respondents agreed that the quality of deliverables consistently meets project requirements and standards (mean = 3.879, SD = 0.811), and quality control processes are effectively implemented (mean = 3.887, SD = 0.808).

The aggregate mean score of 3.884 indicates that respondents agree the projects are performing well in terms of time, cost, and quality management, directly influenced by the applied risk management strategies. These findings align with existing literature that emphasizes the importance of effective time, cost, and quality management in project performance. For instance, Butt et al. (2021) found a strong positive relationship between time management and project performance, suggesting that the timely delivery of projects is critical to achieving project goals. Similarly, Mutunga and Ondara (2021) highlighted that effective budget control significantly enhances project performance, particularly when budget forecasting and tracking are handled accurately, minimizing unexpected costs. Additionally, Gathigia and Wairimu (2023) emphasized the role of quality control processes in ensuring that project deliverables meet required standards, thus improving overall project outcomes.

Correlation Anahlysis

Correlation analysis was conducted to determine the strength and direction of the relationships between the independent variables (risk management strategies) and the dependent variable (project performance). The correlation coefficients and significance levels provide insights into how each strategy affects project performance. If the correlation values are $r = \pm 0.1$ to ± 0.29 then the relationship between the two variables is small, if it is $r = \pm 0.3$ to ± 0.49 the relationship is medium, and when $r = \pm 0.5$ and above there is a strong relationship between the two variables under consideration. Significance was tested at 0.05 level of significance. Table 4.8 presents the findings obtained.

Table 4: Correlation Analysis

Variable		Project Performance	Risk Reduction	Risk Transfer
Project Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	112		
Risk Reduction	Pearson Correlation	0.751**	1	
	Sig. (2-tailed)	0.000		
	N	112	112	
Risk Transfer	Pearson Correlation	0.762**	0.155**	1
	Sig. (2-tailed)	0.000	0.312	
	N	112	112	112

Correlation is significant at the 0.05 level (2-tailed).

The correlation coefficient of 0.751 (p = 0.000) reflects a strong positive relationship between risk reduction and project performance, indicating that reducing risks through preventive, detective, and corrective measures significantly enhances project outcomes. This finding is consistent with Butt et al. (2021), who demonstrated that risk reduction positively affects the performance of construction projects in Pakistan. Furthermore, Igihizo and Irechukwu (2022) concluded that risk reduction strategies have a highly positive impact on project performance in Rwanda, supporting the importance of these measures in maintaining project stability and success.

The highest correlation coefficient of 0.762 (p = 0.000) highlights the strong positive impact of risk transfer on project performance. This suggests that the strategic transfer of risks to third parties, such as through contracts and insurance, significantly enhances project outcomes. This finding is in line with Macharia and Kirui (2020), who found a positive correlation between risk transfer and project performance in public secondary schools in Kenya. Rutabubura and Mulyungi (2020) also observed that risk transfer positively impacts project success, particularly in financial access projects in Rwanda.

Regression Coefficients

The regression coefficients provide detailed insights into the individual impact of each risk management strategy on project performance. Each coefficient represents the expected change in project performance for a one-unit change in the respective risk management strategy.

Table 5: Beta Coefficients of Study Variables

Variable	Unstandardized Coefficient (B)	Standard Error	t	Sig.
(Constant)	1.112	0.294	3.784	0.000
Risk Reduction	0.345	0.069	4.989	0.000
Risk Transfer	0.387	0.066	5.864	0.000

The coefficient of 0.345 (p = 0.000) for risk reduction reflects its significant positive impact on project performance. This means that increasing risk reduction measures, such as implementing preventive, detective, and corrective controls, significantly improves project outcomes. This finding supports the work of Kinyua, Ogolla, and Mburu (2020), who concluded that risk reduction strategies have a positive and significant relationship with project performance in ICT SMEs in Nairobi, Kenya, reinforcing the value of these strategies in diverse project settings.

The coefficient of 0.387 (p = 0.000) for risk transfer indicates that it is the most impactful strategy on project performance. This result suggests that transferring risks to third parties through contracts and insurance arrangements is crucial for enhancing project success. This finding corroborates the conclusions of Gitonga and Nyang'au (2023), who observed a

significant positive influence of risk transfer on the performance of air safety projects in Nairobi County's civil aviation industry.

Based on the regression coefficients, the fitted regression equation that models the relationship between the performance of NGO-led WASH projects and risk reduction, and risk transfer is as follows:

Performance of NGO-led WASH Projects = 1.112 + 0.345 (Risk Reduction) + 0.387 (Risk Transfer)

Conclusions

Risk reduction strategies, particularly preventive, detective, and corrective controls, play a vital role in minimizing the likelihood of risks and ensuring project stability. The study concludes that NGO-led WASH projects that implement comprehensive risk reduction measures experience better performance, as evidenced by the strong positive correlation and regression analysis. Effective risk reduction leads to minimized project disruptions and improved overall project success.

Risk transfer was identified as the most impactful risk management strategy in this study. Transferring risks to third parties through contracts or insurance significantly reduces the burden on project teams and leads to better project outcomes. The study concludes that risk transfer is essential for managing project risks effectively, particularly in complex and high-stakes environments like WASH projects in Isiolo County.

Recommendations

NGO-led WASH projects should integrate risk reduction strategies more effectively into their project planning processes. Preventive, detective, and corrective controls should be a part of every project's risk management plan. Regular training should be provided to project teams to ensure they can identify, monitor, and address risks early. Additionally, a robust risk monitoring system should be implemented to detect and mitigate potential issues before they escalate.

It is recommended that NGOs enhance their use of risk transfer strategies by engaging third parties, such as insurance firms or contractors, to manage specific project risks. Contracts and agreements should be reviewed and updated regularly to ensure they accurately reflect the project's risk landscape. Furthermore, NGOs should explore innovative ways to share risks with third parties to minimize their own exposure and improve project performance.

Suggestions for Further Studies

Further research could investigate additional variables, such as leadership styles, stakeholder engagement, or technological adoption, to determine their impact on the performance of NGO-led WASH projects. Additionally, studies could focus on comparing the effectiveness of different risk management strategies in various regions or sectors to provide more generalizable insights.

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