RISK MANAGEMENT PRACTICES AND PERFORMANCE OF PROJECTS IN KENYA POWER LIMITED

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ABSTRACT

The study's primary goals were to determine the effects of risk planning, detection, analysis, and control on project performance at Kenya Power Limited. The theory of constraints and portfolio theory were used. The study embraced descriptive research approach and examined 77 members of Kenya Power's project management committee, 110 members of the project implementation team, and 11 representatives of the company's contractors over the last five years. The 198 members of the project management team and contractors who participated in the study served as both observational and analytical units. SPSS was adopted in analyzing the collected data and this was presented using mean, frequency table, graphs and pie charts. Kenya Power Limited projects performed better when risk analysis was conducted initially followed by risk planning and risk identification. According to the analysis, the company's risk management procedures aided project performance greatly. Risk managers should emphasize risk planning in order to strengthen KPLC's risk management systems, according to the research. Risk managers should attempt to improve risk planning procedures in order to boost KPLC's project performance. To boost performance, KPLC's project implementation team should prioritize risk detection techniques. To improve project performance, additional resources should be dedicated to developing and strengthening KPLC's risk management procedures. To improve their performance, regulatory authorities would use the study's findings and recommendations to build risk management policies, acts, and regulations.

Key Words: Risk Planning, Detection, Analysis, Control, Project Performance

INTRODUCTION

Risk management is seen as an essential exercise for an organization in achieving good project performance (Bromiley, McShane, Nair & Rustambekov, 2015). The project's schedule and cost is the principal indicator of project performance. If it is completed within the planned period and cost, a project is considered to be attainable. The big challenge facing developing countries is insufficiency of the project's financial resources. When the projects are efficient, they add value to the GDP and increase employment levels in many countries making it essential for economic and growth of a country. The ambiguity and the risk can have negative consequences for the performance of the project (Abyad, 2017). This has resulted in companies conducting a risk management and risk analysis that is still the main feature of project performance management and in an effort to deal effectively with doubts and unforeseen circumstances in order to achieve project performance.

Performance measurement is a critical factor that plays an important role in performance optimization (Robinson & Sensoy, 2016). Often the performance of a project is determined by its ability to be accomplished within the expected budget, met its quality standards, meet the expectation of the users. However, a single agency or organization can't address many of the problems facing growth today. According to Wibowo and Sholeh (2015), the problems are complex and require countless actors, such as donors who finance projects, officials receiving authority over the region where the projects are being carried out, and local and domestic stakeholders who know best local interests and have the ability of assisting in informing and engaging the local communities; Engagement in this context means the opportunity to identify, employ, involve significant local stakeholders in project-related activities and sustain their participation through continuous contact for the duration of the project.

Project risk management includes the phases of preparation, identification, analysis, reaction, monitoring, and control (Tomanek & Juricek, 2015). Predicting, characterizing, and reducing the chances of bad things happening are the backbone of any good risk management plan. Once the potential for bad things to happen has been identified, the risks associated with them can be evaluated. Some effective risk management tools mentioned by Hernández, Carreo, and Castillo (2018) include probability or impact matrices, SWOT analysis, and the top ten risk item tracking technique. In recent years, the value of risk management in projects has increased. Exposure, or the possibility for monetary loss, is another way of thinking about risk. As a result, businesses are putting more resources into developing early warning systems to detect and neutralize potential dangers before they may cause serious damage.

To most Kenyans electricity has been considered as one of the needs thus it ought to be harnessed and developed in a more effective and efficient way. The nature of provision of the service must be well defined and structured to ensure that the expected users get it with easiness considering also the fact that it determines country's economy has this is one of the major sources of energy eve in most of the country's industrial sectors. On such grounds the Kenyan entity The Kenya Power and Lighting Company has been defined as the major player that ensures there is effective and efficient supply of electricity.

KPLC's major issues include weak transmission and distribution network redundancy, access to rural electrification is still low standing at not more than 20%, high operation costs, unsatisfactory quality of power supplied leading to high number of complaints, heavy expenditure on expansion of electrification schemes and poor planning of projects among stakeholders. Many projects have been initiated to address these challenges by KPLC with the support of the government and development partners. However, in most cases the benefits from these projects are not realized due to poor performance during implementation. Without

putting in place proper risk management practices, oversight of project measurements, that is time, cost and quality is not properly done.

Statement of the Problem

Over the previous five years, the power distributor has participated in eleven projects, with finance coming primarily from the African Development Bank, the World Bank, and the Government of Kenya. However, most projects have been carried out late, with cost overruns, corruption, and mediocre outcomes being the norm. This has been influenced by a number of factors, such as the presence of possible threats over the duration of a project's lifespan. The present risk management processes at Kenya Power Limited must be evaluated if the company is to improve the effectiveness with which it carries out its projects.

For instance, Pimchangthong and Boonjing (2017) sought to find out how risk management procedures influenced IT projects and discovered a positive association. What matters more than differences in company size, according to the findings, is the organization's size and kind. Using a case study approach, Wanyonyi (2015) looked into how different multinational companies situated in Nairobi, Kenya handled risk management and how that affected project outcomes. The results point to a connection between risk management strategies and completed projects.

According to Aduma and Kimutai's (2018) findings, risk management techniques and project outcomes can have a major effect on the National Hospital Insurance Fund of Kenya. As with any initiative, the primary factor in the NHIF's success was prevention, followed by control, acceptance, and transfer of risk.

New product development efforts were studied by Oehmen et al. to see how their success was influenced by risk management techniques (2014). Risk management strategies were found to have a direct effect on decision quality, program consistency, and problem solving. The success rate of building projects in Pakistan was studied by Tahir,

Tahir, and Shujaat to determine what measures may be used to reduce the potential for disaster. The results showed that the overall project grade was affected by the quality of risk management.

Each of the aforementioned research had its own unique methodology, objectives, and findings because it was based on a unique set of circumstances, concepts, and populations. This research aims to fill this knowledge gap by identifying how Kenya Power Limited's risk management techniques affect the success of their projects.

Objectives of the Study

The general objective of the study was to investigate the effect of risk management practices on performance of projects in Kenya Power Limited. The specific research Objectives

- To examine the impacts of risk planning and on performance of projects
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LITERATURE REVIEW

Theoretical Literature Review

Stakeholders Theory

Initiated by Freeman (1994) and expanded by Jones (1999), stakeholder theory (1995). The concept's primary emphasis was on how the ripple effect may benefit the company's stakeholders. The basic goal of this idea is to encourage the growth of moral and value-based skills among project managers. This phase involves the identification of influential members of the local community who have a vested interest in the company's success. The idea was developed by Igor Ansoff and Robert Steward of Lockheed Company's planning division. Jones and Wicks both approached this paradigm from their own unique vantage point (1999). The idea of normative stakeholders was dissected by him. This is the original spark that ignited the conflict. If we

accept his description, the model shows how the manager and shareholders establish ethical standards for the business. Another school of thought, known as the "unique partner hypothesis," places an emphasis on the pragmatic aspects of partnerships and leadership. The management team's main concern was how the partners were treated.

Theory of Constraints

According to this management theory, the organizational vision of every controllable system must overcome a number of challenges before it can be achieved (Barausse et.al, 2016). The inquiry was centered on the theory of change. In doing so, it undermines the credibility of the enterprise's entire value chain. This notion takes a process-based approach to an organization's effectiveness and identifies the rate-determining stages, or those that are most likely to affect the project's success and, by extension, the whole company's effectiveness. When these are addressed, productivity increases and less time is wasted on inefficient resources.

Portfolio Theory

This hypothesis was proposed by Markowitz (1991). Two important ideas serve as the cornerstone of this method. The initial concept was that no matter what level of risk his company takes, every investor wants to maximize their return. The second premise is that spreading risk across a variety of assets may be beneficial. This model implies that investors will choose the safest possible portfolio in order to maximize profits. As a result, investors may only contribute capital to high-risk businesses if they can also expect a high return. To make this notion work, it is necessary to suppose that there exist unsystematic and systematic types of risks. Thus, to change their portfolio, an investor must first add additional stocks to it.

Empirical Review

Kinyua et al (2015) did a research examining the relationship between risk management strategies and performance of SME within the ICT sector. The research aimed at establishing how the strategies of managing risks influenced the SMS's performance.

The study embraced descriptive research design and embraced 48 ICT SMEs. Through the use of questionnaires, the study's findings that the adoption of strategies in the management of risks positively enhances the business performance. Project performance becomes effective when it is met on time and achieves the set goals and objectives. Risk planning is required in the lifecycle of a project as it extends the achievement being measured as far as time, degree, quality, consumer loyalty and costs incurred.

Often organizations are faced with various challenges regarding risk management and risk identification as argued by Lagat and Tenai (2017) determines how effective a company performance. The findings of this study were intended to shed light on how risk identification affects the functioning of financial institutions. The study, which used an explanatory research technique, enrolled 239 managers from 46 commercial banks, 52 microfinance institutions, and 200 savings cooperatives. According to the research, risk detection is related to financial performance. According to the findings, regulators should investigate more effective methods for detecting risk in financial institutions in order to improve their performance. Risk identification is a critical phase in the risk management process's success. Successful project managers should have methods in place that enable them to recognize hazards throughout the project's lifecycle. The overall performance of the project is improved.

Mayavi (2015) examined the relationship between Kenya's Nairobi based petrol station construction quality and risk management. The research examined risk identification, assessment, mitigation, and monitoring in order to help in determining effect of these aspects on establishing more qualitative stations in Kenya's Westlands Constituency. Questionnaires were used to collect data. The researcher collected data for this experiment using basic random probabilistic sampling and was analyzed using spearman's rank correlation. The study's intended audience was fifty
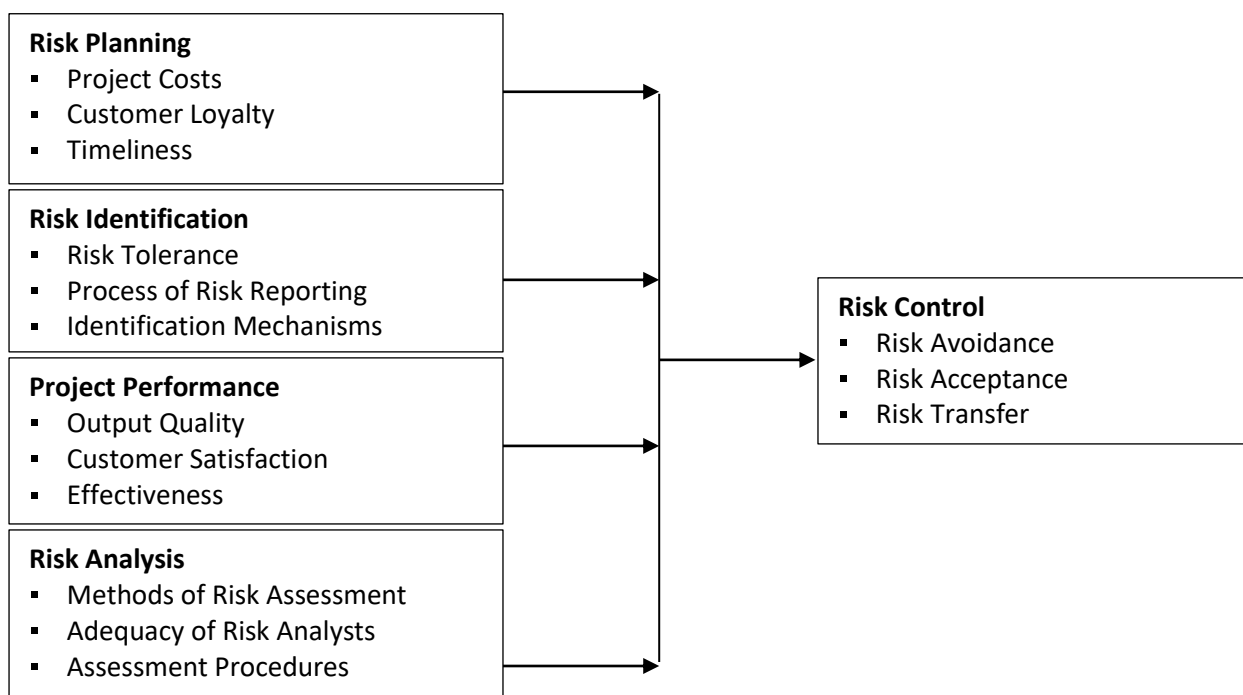
members of the constituency for gas station construction, and data were collected from a random sample of 35 of them.

Nyaga (2014) studied the impact of project management competences on project performance using a sample of construction enterprises in Kenya's Mombasa County. The research's objective was primary goal of the study was to investigate construction project management capacities in Mombasa construction businesses. The used a descriptive research strategy. Out of 111 construction workers in Mombasa, 33 took part in the poll. Questionnaires were used to collect information. According to the report, there is a lack of planning ability, which is critical for project

success. These steps are implemented in order to analyze prospective losses and implement the appropriate procedures to mitigate or eliminate those risks. Risk can be reduced by transferring it, decreasing it, accepting it, or ending it. When dangers are identified early on, the overall performance of a project improves.

Conceptual Framework

The conceptual framework also specifies the indicators for the independent and dependent variables. The conceptual framework uses graphical representations to make the links between these elements and performance crystal evident. Figure 1 showed the overall conceptual structure of the investigation.

Risk Planning
- Project Costs
- Customer Loyalty
- Timeliness

Risk Identification
- Risk Tolerance
- Process of Risk Reporting
- Identification Mechanisms

Project Performance
- Output Quality
- Customer Satisfaction
- Effectiveness

Risk Analysis
- Methods of Risk Assessment
- Adequacy of Risk Analysts
- Assessment Procedures

Risk Control
- Risk Avoidance
- Risk Acceptance
- Risk Transfer

Independent Variables   **Dependent Variables**
Figure 1: Conceptual Framework

METHODOLOGY

The study adopted descriptive research design. The type of research design is often focused don finding out the what, how when and where of a given subject under study (Kaur & Sharma, 2015). The adopted research design sought to examine events and establish the expected conclusions and recommendations.

The target population of the study included 7 project management committee members and 10

project implementation team members from each of the 11 projects and 1 contractor representative from each project implemented by Kenya Power Limited. The respondents were chosen because they had the right information regarding the projects implemented by the power distributor. Primary research was conducted through questionnaires which were divided into five sections, with the first focusing on respondents' personal information and the remaining four on study variables. Closed-ended

surveys were chosen due to their ease of dissemination and collection, as well as their general efficiency. The study selected a pilot study of 15 respondents and this included applying the actual research questions.

The collected data was collected it was checked for completeness and would be entered into excel before being feed to SPSS for analysis. The study adopted descriptive Statistics which entails defining the means, and the data's standard deviations. This was key to examine the distribution of the individuals scores (Norman et al, 2016). In the attaining the outcome multiple regression analysis was done to determine the relationship between the dependent and independent variables. This was attained by using the multiple regression analysis model provided below;

The Multiple Regression Model followed this format:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y= Project Performance B0 = Constant β_1, β_2, β_3 and β_4 are Coefficients

E = error term

X1= Risk Planning X2= Risk Identification X3= Risk Analysis

X4= Risk Control

FINDINGS AND DISCUSSION

Risk Planning

The findings of descriptive statistics on risk planning as the first independent objective variable of the study were as summarized in Table 1.

Table 1: Risk Planning

Statement	Mean	Std. Dev
The organization does plan on project costs and miscellaneous costs	4.026	0.739
The firm always has a budget for cost overruns	3.827	0.953
We do prioritize customer loyalty hence plan for any risk	3.911	0.850
The firm always ensures that project timelines have been adhered to	3.773	0.883
We do plan for any eventuality in all our projects and come up with mitigations	3.928	0.844
Composite Score	**3.893**	**0.854**

The above table showed a composite score of 3.893, this means that most of the participants agreed that their entities did practice risk planning. This was largely through planning on project costs and miscellaneous costs (M=4.026). Consistent with these findings, Hazzi and Maldaon (2015) noted that risk planning is required in the lifecycle of a project as it extends the achievement being measured as far as time, degree, quality, consumer loyalty and costs incurred.

Gateau (2015) said that risk planning is believed to establish a basis for the project's team work, provides a sense of direction and helps in anticipating a problem and coping with the necessary changes.

Risk Identification

Table 2 is an analysis of the descriptive statistics on risk identification.

Table 2: Risk Identification

Statement	Mean	Std. Dev
We do identify project risks in advance	3.827	0.782
Our PMC prioritizes for risk tolerance to ensure projects are completed	3.628	0.977
We have a clear and functional process of risk reporting	3.885	0.795
We do identify mechanisms of risk management earlier before a project commences	3.793	0.974
Our projects have a qualified risk management team that identifies risks earlier and mitigate them	3.802	0.837
Composite Score	**3.787**	**0.873**

Table 2 showed that the composite score was 3.787, this shows that the studied organization had adopted risk identification as its risk management practice. Lagat and Tenai (2017) established that the responsible entities such as the risk management team and regulators ought to embrace risk identification as a one of the major practices of managing performance in financial institutions as this helps the institutions enhance the risk management approaches.

Risk Analysis

The findings of risk analysis as the other variable of the study were as shown below

Table 3: Risk Analysis

Statement	Mean	Std. Dev
Our firm has functional methods of risk assessment	3.903	0.866
We do conduct risk analysis for all risks involved in a project and manage them	3.742	0.991
We have laid down procedures for handling various types of risks in the project lifecycle	4.047	0.748
We do assess all risk management procedures employed in a project	3.829	0.975
We regularly revise our risk analysis mechanism given modern technology and expertise	3.627	0.884
Composite Score	**3.830**	**0.893**

As shown from Table 3, a composite score of 3.830 is shown, this shows that most of the respondents agreed that their organization practiced risk analysis. Moradi, Mousavi and Vahdani (2017) suggest that project risk analysis is aimed at providing simpler ways of improving the insights into how one should be able to successfully manage projects, increase communication in the entire project's team and also providing a reasonable risk-adjusted plan in improving the chances of project performance. Wanyonyi (2015) indicated that risk analysis is considered to be a key project management practice which is geared towards ensuring there is continuity in project process.

Risk Control

Consider Table 4 which provides a summary on risk control.

Table 4: Risk Control

Statement	Mean	Std. Dev
Our team strives to control any type of risk that may hinder project performance	3.748	0.936
We do employ risk avoidance as a technique for risk control	3.819	0.738
The organization employs risk acceptance strategy and manages all risk involved in the project	3.692	0.992
We do transfer some of the risks that we cannot handle at the moment or within our capacity	4.027	0.883
We do update our risk control mechanisms regularly	3.822	0.921
Composite Score	**3.822**	**0.894**

As per the findings in Table 4, the composite score was given as 3.822, which was interpreted to imply that most of the participants in the research agreed that their organization had embraced risk control as one of the risk management practices. According to Nyaga (2014), risk control entails the measures taken to help in evaluating the potential losses and taking the necessary actions so as to help in reducing or eliminating such threats. Aduma and Kimutai (2018) revealed that risk control is regarded as a key

component of managing the risks that are associated with performance of a project.

Regression Results

The study's objective was to examine Kenya Power Limited's risk management practices. The study accomplished this goal through the use of regression analysis. The findings of a regression model summary were summarized below;

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.817[a]	.668	.652	.70426

a. Predictors (Constant), Independent Variables

It is estimated that at Kenya Power Limited, risk management techniques account for 66% of the variance in project performance. The model's Analysis of Variance yields the results shown in Table 6.

Table 6: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	87.665	4	21.916	19.081	.000[b]
Residual	43.647	38	1.149		
Total	131.312	42			

a. Dependent Variable: Project Performance

b. Predictors: (Constant), Risk Planning, Risk Identification, Risk Analysis, Risk Control

The computed value of F is 19.081; this is greater than the minimum value of F necessary for survival, as shown in Table 6. Also, the p-value is 0.000, which is incredibly little compared to the significance level of 0.05. Overall, the importance of the regression model used in the investigation was confirmed. In Table 7, we can see the model's significance together with the regression beta coefficients.

Table 7: Beta Coefficients and Significance

Unstandardized Standardized Coefficients

	B	Std. Error	Beta	t	Sig.
(Constant)	7.196	1.199		6.003	.000
Risk planning	.148	.045	.056	3.289	.031
Risk identification	.119	.048	.156	2.463	.016
Risk analysis	.301	.038	.765	7.921	.000
Risk control	.133	.030	.061	4.433	.033

a. Dependent Variable: Project Performance

b. Significance at 5% or 0.05

The above table fulfills the model below;

$$Y = 7.196 + .148X_1 + .119X_2 + .301X_3 + .133X_4$$

The initial focus of the study was Kenya Power Limited (KPL). As a result, regarding planning of risks in project performances, Kenya Power Limited's beta coefficient was.148, meaning that every unit invested in risk management resulted in an additional 0.148 unit of performance improvement for each of our projects. According to the findings it would be clearly reflected that risk planning influences the performance of KPL projects. Previous research corroborates these findings express that the impact of risks management practices adopted by its SMEs influences their performance.

The researchers established a connection between

project success and risk management practices. Gitau (2015) discovered that risk management systems had a considerable impact on the outcomes of Rwandan construction projects when he researched the impact of early-stage risks on the outcomes of Rwandan construction projects. According to Marius and Isaiah, risk management had a statistically significant effect on project success in a study of Pakistani and British construction enterprises (2019). The authors assert that effective risk management is crucial to the conception and execution of any project. Both small and large projects run the risk of project failure or under performance.

Regarding identification of risks to project performances in KPL, the results identified that the regression beta coefficient as 0.119, this means that increasing risk identification by one unit would lead to 0.119-unit improvement in projects in Kenya Power Limited. The results further indicate that the p-value of risk identification was less than 0.05, implying that it significantly enhanced performance of projects at KPLC. These findings are consistent with what Lagat and Tenai (2017) view which establishes that risks identification as one of the major process of managing risks in financial sectors positively contributes towards the financial performance. From the study it would be recommended that for effective management of a risk and also ensure that risks are managed to the positive performance of a company the risk management team should embrace risks identification approach.

Regarding analysis of risks to project performances in KPL, the results identified that for each additional unit of risk analysis completed, KPLC's projects would benefit by a factor of 0.301, according to a study's beta coefficient of 0.301. A value of 0.05 (p-value) was found, indicating that risk analysis had a substantial impact on KPLC's project success. Mousavi and Vahdani (Moradi et al., Mousavi and Vahdani) claim that conducting a project risk analysis can help organizations better manage projects, increase team communication, and design

risk-reduction strategies that are both feasible and acceptable (2017). Furthermore, according to Wanyonyi's (2015) research, risk management determines a project success.

Regarding control of risks to project performances in KPL the beta coefficient was achieved at 0.133, implying that for every unit increase in risk control, project performance would increase by 0.133 units. On the other hand, based on the p-value less than 0.01.KPL's performance of projects is influenced by risk management. Aduma and Kimutai (2018) discovered that risk prevention measures had the greatest impact on the success of NHIF initiatives, followed by control, acceptance, and transfer. Risk management, according to researchers, is inextricably connected to improved decision-making, program stability, and problem solutions throughout new product development activities (2014).

CONCLUSION AND RECOMMENDATIONS

The research sought to also examine how Kenya Power Limited's performance is influenced by risk planning. Based on the attained results, they reflected a positive regression showing that Kenya Power Limited has adopted risk planning and this has contributed towards performance of projects in place.

The research's other objective was examining how Kenya Power Limited's performance is influenced by risk identification. As per the regression results, risk identification had a beta coefficient that was positive and significant. Thus, risk identification significantly drives performance of projects at Kenya Power Limited.

These regression findings suggest that the beta coefficient of risk analysis is positive at the p0.05 level. In light of these findings, risk analysis has been identified as a crucial component to Kenya Power Ltd's continued performance.

The study set out to determine how well risk management affected the final product for Kenya Power Limited's projects. According to the

regression analysis, the effect size was significantly positive. This study found that as a result of KPLC's embrace of risk management, the company's efforts have fared better.

Recommendations for Management, Policy and Practice

Risk analysis provided a significantly larger and statistically significant regression beta coefficient than any other approach. The research concluded that KPLC risk managers should place a premium on risk analysis when developing company-wide risk management policies.

Risk planning had the second-highest beta coefficient in the regression research. To boost project outcomes, KPLC's risk managers should endeavor to strengthen their current risk planning methods.

There was a statistically significant link between risk control and the regression analysis's third largest beta coefficient. The report recommends that KPLC's project implementation team place a premium on risk control strategies.

Risk identification has the smallest beta coefficient of the three strategies. As a result of the study, risk managers at KPLC should also spend additional resources in risk identification measures in order to improve the performance of current projects.

Suggestions for Further Research

This inquiry was a case study that focused on KPLC. Hence, future studies are recommended to be conducted using cross sectional approaches to cover more than one firm. The present study related risk management practices and project performance, future studies should focus on project implementation as a concept aside from performance. The study recommends further research to be done away from Kenya to cover other countries across the East Africa region.

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