RISK MANAGEMENT STRATEGIES AND PERFORMANCE OF AGRICULTURAL PUBLIC PRIVATE PARTNERSHIP PROJECTS IN KENYA

[1] Michael Jackson A., [2] Dr. Mungai Anne-Marie Wairimu, PhD

[1] Master of Science in Project Management, Jomo Kenyatta University of Agriculture and Technology

[2] Lecturer, Jomo Kenyatta University of Agriculture and Technology

ABSTRACT

The performance of the Public Private Partnership Projects is important in ensuring that Kenya is food secure and has ability to meet the food requirements of its citizens in all the areas and at all times in a sustainable manner. However, Kenya has been faced with diverse poor Public Private Partnership Projects' performance. This study sought to examine the influence of risk management strategies on performance of Public Private Partnership agricultural projects in Kenya. The study was guided by the following specific research objectives; to determine the influence of project risk identification practices, and project risk assessment practices on the performance of Public Private Partnership agricultural projects in Kenya. The study was guided by principal agent theory and contingent theory. The study adopted descriptive research design. The study target was 22 Public Private Partnership agricultural projects in Kenya. The projects have a total of 22 project managers, 69 project officers and 276 field extension officers. Proportionate stratified random sampling was used to select 190 project members (11 project managers, 34 senior operations officials, and 145 field extension officers). Data was collected using questionnaires. This study used Cronbach's Alpha coefficient to test the reliability of the research questionnaires. Data was analysed using Statistical Package for Social Sciences (SPSS) version 28. Both descriptive and inferential statistics were used. The entire data analysis was presented by the use of tables. Findings show that; there is a strong significant relationship between risk identification and project performance (r=0.678, p=0.001), and a strong significant relationship between risk assessment and project performance (r=0.501, p=0.020). The recommendations are; The project managers should describe in detail risks to ensure that they are not mixed up with other project activities. Each risk should be given an identification number, there should be effective communication to the project team on the risk assessment reports.

Key Words: Risk management strategies, Project risk identification, Project risk assessment, Public Private Partnership agricultural projects

Background of the Study

Public Private Partnerships (PPPs) have increasingly been used as a way to finance and deliver public projects, such as infrastructure, transportation, and social services. In agriculture, PPP promote and support agribusiness development through increased diversification, economic and wealth production, increased food security and market competiveness expansion (Rottger, 2018). PPPs therefore offer potential benefits such as increased efficiency and innovation, reduced costs, and improved project delivery (International Monetary Fund, 2016). However, there are also risks associated with PPPs, including financial, technical, and operational risks (World Bank, n.d.). Effective risk management is therefore critical to the success of PPP projects (Ramkumar, 2015).

According to Murtaja and Al-Wattar (2016) the concept of risk management first emerged around 2100 BC. Risk management strategies refer to the processes and practices that are used to identify, assess, and mitigate risks in a project (Murtaja & Al-Wattar, 2016). In the context of Public Private Partnerships (PPPs), risk management is particularly important, as PPP projects involve collaboration between the public and private sectors, and involve a range of financial, technical, and operational risks (World Bank, n.d.).

Effective risk management strategies can help to minimize the impact of risks on the project, and improve the overall performance of PPPs. This can involve a variety of techniques, such as identifying and assessing risks at the outset of the project, developing contingency plans, and reviewing risks throughout the project lifecycle (European Investment Bank, 2019).

Performance, in this context, refers to the success or effectiveness of PPP projects in achieving their objectives, as well as their economic and social impact. Factors that can influence the performance of PPP projects include the quality of project design and planning, the effectiveness of risk management strategies, the level of stakeholder engagement and consultation, and the level of transparency and accountability in the project (OECD, 2018).

Research on the risk management strategies and performance of PPP projects can help to identify best practices for managing risks and improving the overall effectiveness of these projects. This can inform policy decisions related to the use of PPPs, and help to ensure that PPPs are used in a way that maximizes their potential benefits and minimizes their risks. This study therefore seeks to investigate the influence of Risk Management Strategies on the performance of Public Private Partnership agricultural projects in Kenya.

Statement of the Problem

Public Private Partnership (PPP) projects play a great role to economic growth. PPPs ensure that peoples livelihood improves because they enable the country to transition from a developing country to a developed country. The Public Private Partnership (PPP) framework has over the years enabled the Government of Kenya to implement high quality projects that have helped buttress and build resilience in the Kenyan economy, moving it towards achieving its full potential. However, approximately 60% of agricultural projects implemented through PPP have either been delayed, experienced funds overruns, or performed below expectations (World Bank, 2018). Kenya Agricultural Productivity and Agribusiness Project, the Kenya Climate Smart Agriculture Project, and the National Agricultural and Rural Inclusive Growth Project that were all funded by the government in collaboration with World Bank have had 56% levels of performance which is considered as moderate performance level. The PPs have struggled to meet their mandates in a cost-effective manner and with high levels of stakeholder satisfaction (World Bank, 2018).

There have been a number of studies that have identified challenges with the performance of PPP agricultural projects in Kenya. A study by Gachahi et al. (2017) found that PPPs in the agricultural sector in Kenya face a number of challenges, including a lack of clear policies and guidelines,

inadequate risk assessment and management, and a lack of transparency and accountability. Njogu et al. (2016) found that PPPs in the agricultural sector in Kenya have often struggled to meet their performance targets and deliver expected benefits, due to a range of factors including poor project planning, inadequate stakeholder consultation, and inadequate risk management. Matere (2016) found that risk identification had an influence on the performance of PPP projects. Nkirimpai (2017) indicated that the importance of risk assessments on performance lay in threats identification, identification of potential dangers or losses, management evaluation of risks, and estimation of the likelihood of the project risks materializing.

Previous studies have generally looked at PPPs in a broad range of sectors, such as infrastructure, transportation, and social services, but have not specifically focused on the agricultural sector (Gachahi et al., 2017). This gap in the literature may be due to the fact that the agricultural sector has unique risks and challenges that are not adequately addressed in more general studies of PPPs. While previous research has identified a number of factors that can influence the performance of PPP projects (Njogu et al., 2016), there is a lack of empirical evidence on the relationship between risk management practices and project performance (Matere, 2016). Previous research has not adequately addressed the specific challenges and risks faced by PPP agricultural projects in Kenya (Nkirimpai, 2017). These gaps in the literature highlight the need for further research on the risk management practices and performance of PPP agricultural projects in Kenya, in order to better understand the specific challenges and risks faced by these projects, and to identify best practices for managing these risks and improving project performance. Therefore, the current study sought to examine the manner in which the risk management practices influence the performance of Public Private Partnership agricultural projects in Kenya.

Objectives of the Study

The general objective of the study was to examine the influence of risk Management Strategies on the performance of Public Private Partnership agricultural projects in Kenya.

The study was guided by the following specific research objectives.

  (i)   To determine the influence of project risk identification strategies on the performance of Public Private Partnership agricultural projects in Kenya.
  (ii) To examine the influence of project risk assessment strategies on the performance of Public Private Partnership agricultural projects in Kenya.

LITERATURE REVIEW

Theoretical Review

Risk Management Theory

Risk management theory was developed by Karol Marek Klimczak in the year 2007 to address risk management issues from a practical perspective. The theory outlines seven steps in risk management. These processes are; setting project objectives, identification of risks, and assessment of the impact of the risks, rank the risks from the risks with the highest impact to the risk with the lowest impact, responding (treating) to the risks, monitoring the risks and review of the risks (Nkirimpai, 2017). According to the theory, the first step is to set clear objective of what the project is supposed to achieve. In stating the objective, it is easy to identify what is exposed to risk. Therefore the second step identification of risks. This step involves listing all risks and linking the risks to project objectives and activities (Matere, 2016).

The third step is to measure the impact of the risks to the project. This can be done by comparing the adverse effects of each of the risk listed in the second step. The impact to the risk can either be in form of monetary losses, reputation damages, injuries, frequency of occurrence of the risks and other qualitative aspects. Once the impact of the risks has been established, the fourth step is to

rank the risk starting from the risk that would result to more adverse effects to the least. The purpose of the ranking is to establish which risks needs to be treated first and which risks should be given the least attention. The risks can be ranked using risk matrix which gives priority to risks in measures attributes (Musyoka, 2012).

The fifth step is to respond to the ranked risks. The response to risks can be either treating the risks, transferring the risks, terminating the risks or tolerating the risks. Some risks cannot be completely dealt with and can be tolerated in small prevalence. After responding to the risk, the sixth step is to monitor the risk to be within the tolerable margins. During this phase, the feedback on risk margins after the risks have been responded to is determined. Risk monitoring also ensures that threated risk does not reoccur. The last stage is to reassess the risks and then the risk management cycle repeats from step four (Tabi, 2016). In the context of Public Private Partnership Projects, the risk management theory was used to guide the study in regard to the influence of project risk identification practices on the performance of Public Private Partnership agricultural projects in Kenya.
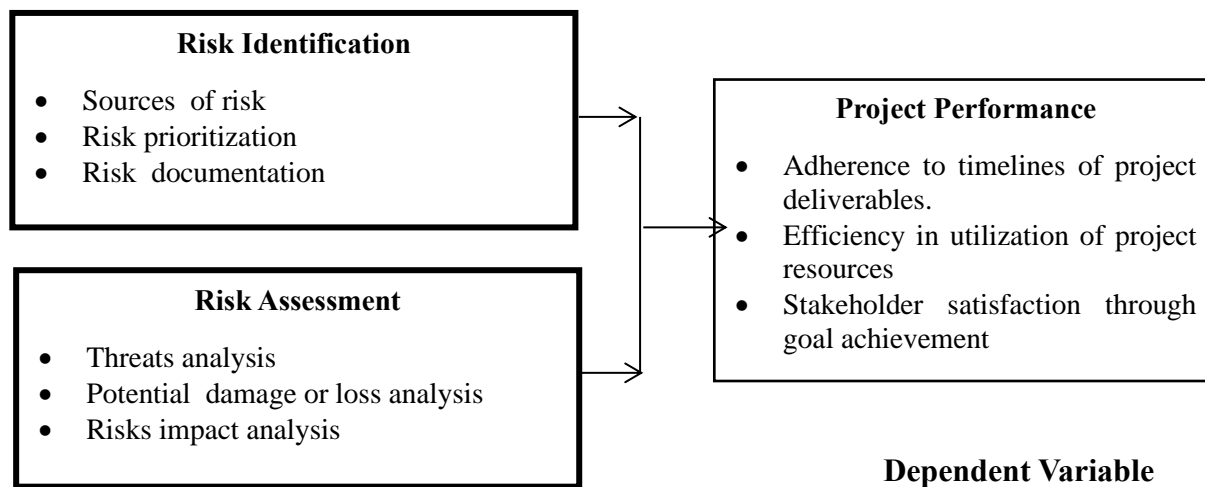
Decision Theory

Decision theory was developed by Sven Ove Hansson in the year 1994. The theory states that the management team of an organization makes decision makes based on future uncertainties in the business. It explains how the management team assesses the risks involved in certain risks and then takes decision based on the level and magnitude of the risks. According to the decision theory, the decision made in response to the assessed risk depends on risk appetite, expected value, risk attitude, and loss aversion (Kinyua, Ogollah, & Mburu, 2015).

Project managers who have high appetite for risk will undertake decision and be ready to face the risks that may be associated to taking such risks. In this context, project managers may take decision that may threaten the survival of the Public Private Partnership Projects. The theory also explains that project managers can make a decision which is risky with an expectation of increasing the value of the project in future. Such project managers do not focus on the current status by the expected value they will receive in the long run from such decision (Nkirimpai, 2017).

The attitude project managers also have towards risk may inform of the decision they make in running a project. Those who have negative attitude towards risk will make decisions that are unlikely to result into a risk while those who have positive attitude towards risk will take risky decisions. The theory further states that project managers who prefer profit than loss will make decisions that may lead the project in profit making (Kaliti, 2015). For either decision to be taken by the management team, risk has to be first evaluated and the consequences of making decisions in the organization measured against such risks. Therefore, decision theory was relevant in guiding the current study in regard to the influence of project risk assessment practices on the performance of Public Private Partnership agricultural projects in Kenya.

Conceptual Framework

In examining the influence of Risk Management Strategies on performance of Public Private Partnership agricultural projects in Kenya, the study will use risk identification practices, project risk assessment practices as independent variables and agricultural Performance as dependent variable.

Risk Identification

- Sources of risk
- Risk prioritization
- Risk documentation

Project Performance

- Adherence to timelines of project deliverables.
- Efficiency in utilization of project resources
- Stakeholder satisfaction through goal achievement

Risk Assessment

- Threats analysis
- Potential damage or loss analysis
- Risks impact analysis

Dependent Variable

Figure 1: Conceptual Framework

Risk Identification Practices

Risk identification practices refer to the processes and methods that are used to identify potential risks in a project (Matere, 2016). These practices are an important part of effective risk management, as they help to ensure that risks are identified and assessed at an early stage, and can be addressed before they have a negative impact on the project (European Investment Bank, 2017). According to Musyoka (2018), it entails the use of various techniques to gain an understanding and determine potential unsatisfactory outcomes that have the likelihood of affecting the project. Risk identification practices are crucial for effective risk management and can have a significant impact on the performance of Public Private Partnership (PPP) projects. Risk identification involves identifying and assessing potential risks that may affect a project, and includes techniques such as meetings with project managers and stakeholders, identifying high risk areas, and breaking down risks according to their severity (Gitau, 2015).

Factors that can influence the performance of PPP projects through risk identification include the involvement of internal and external auditors, the identification of unproductive farm departments or activities, and the development of accurate budget estimates. Additionally, breaking down risks according to their severity and identifying high risk areas can help project managers develop risk management strategies and allocate resources efficiently, leading to improved project performance (Tabi, 2016). There is evidence to suggest that risk identification practices can have a positive influence on the performance of PPP projects. A study by Matere (2016) found that risk identification had a positive influence on the performance of PPP projects in the Kenyan public sector.

Risk Assessment Practices

Risk assessment practices are the processes and methods that are used to assess the potential risks facing a project (Nkirimpai, 2017). These practices are an important part of effective risk management, as they help to identify and evaluate the likelihood and impact of different risks, and allow project managers to develop appropriate risk management strategies. Risk assessment practices may include techniques such as identifying potential threats and dangers, evaluating the likelihood of risks occurring, and assessing the potential damage or loss that could result from a risk (Kinyua, Ogollah, & Mburu, 2015). Risk assessment practices may also involve seeking professional help to assess risk potentials, or setting aside time to evaluate risks at different stages of project execution. Overall, risk assessment practices are designed to help project managers understand and manage the risks facing their projects, and to minimize their impact on the project's performance.

Risk assessment practices, or the processes and methods used to assess the potential risks facing a project, can also have a significant influence on the performance of Public Private Partnership (PPP) projects. Factors that have been identified as influencing the performance of PPP projects through risk assessment include time availability for risk assessment, effective communication among team members on risk issues, and professional help to assess risk potentials (Kaliti, 2015). In addition, the ability to set aside time to evaluate risks at different stages of project execution and accurately calculate the impact of risks when they occur can also impact the performance of PPP projects (Nkirimpai, 2017). Therefore, effective risk assessment practices are important for ensuring that PPP projects are able to identify and manage potential risks in a timely and effective manner. By accurately assessing the likelihood and impact of different risks, project managers can develop appropriate risk management strategies and take steps to minimize their impact on the project. This can help to improve the overall performance of PPP projects, and increase the likelihood of project success.

Project Performance

Project performance refers to the extent to which a project meets its goals and objectives, and delivers the intended outcomes and benefits (Theuri, 2018). It is typically evaluated in terms of cost, schedule, scope, and quality, as well as other criteria such as risk management, stakeholder satisfaction, and sustainability. Project performance can be influenced by a wide range of factors, including project planning and management, stakeholder engagement, risk identification and assessment, and resource allocation. To ensure that a project performs well, it is important to implement effective risk management practices and to monitor and evaluate performance throughout the project lifecycle (Matere, 2017; Nkirimpai, 2017).

In this study, project performance measures are used to evaluate the success or effectiveness of a project. These measures can include adherence to timelines of project deliverables (Kinyua, Ogollah, & Mburu, 2015), efficiency in the utilization of project resources (Tabi, 2016), and stakeholder satisfaction through goal achievement (Matere, 2016). Adherence to timelines of project deliverables is an important measure of project performance, as it ensures that the project is completed on schedule and within budget. Efficiency in the utilization of project resources is also a key measure of project performance, as it helps to ensure that the project is being carried out in a cost-effective manner. Stakeholder satisfaction through goal achievement is another important measure of project performance, as it reflects the extent to which the project is meeting the needs and expectations of stakeholders. Overall, these measures are used to assess the success or effectiveness of a project and to identify areas for improvement.

Empirical Review

Risk Identification Practices and Performance

Tworek (2019) study examined the methods of risk identification in companies' investment projects. The study exclusively dealt with the methodological aspects of risk identification in investment projects carried out by companies' and carried out in 25, out of 100, leading construction and assembly companies in Poland. The research was conducted in the third quarter of 2019. The study found that effective identification of the effects of the risk is especially vital as it guarantees increasingly compelling assurance against risks.

Tadayon, Jaafar and Nasri (2018) study assessed risk identification in large construction projects in Iran. The data were collected through questionnaires from 43 respondents using email and mails. The study established those brainstorming sessions and historical analysis of data for comparative projects were observed to be the most favored strategies for the identification of the risk in the Iranian construction industry. Gitau (2015) carried out a study to examine the effects of risk management at planning phase of construction projects in Rwanda. The study used both descriptive

and explanatory research designs. A sample size of 161 employees of construction projects and 10 construction professionals was used. Questionnaires and face to face interviews were used to collect data. The study found out that 92.5% of respondents agreed that there was risk identification during the planning stages of the construction projects.

From Ghana, Tabi (2016) carried out a study on risk identification and analysis in construction firms in Ghana. The study used both qualitative and quantitative approach to obtain its data from a sample of 55 respondents. The study used questionnaires that were both open and closed. The study found out that 96.15% of the respondents indicated that risk identification was a major consideration before carrying out the construction projects. Mutua and Kirui (2020) examined the extent to which project risk identification influences core banking system projects performance in selected commercial banks, in Kenya. A descriptive research design was utilized. The accessible population was 80 respondents comprising of 10 project managers from each bank. A census of 80 respondents was done to form the study sample size. Questionnaires were utilized to collect data. The collected data was quantitatively analyzed using descriptive statistics and multiple regression analysis. The study found that risk identification, risk analysis, and risk response had a positive significance on project performance. The study concluded that identifying risk enables full risk analysis to be done and risk to be addressed and the project managers qualify risk based on likelihood and impact. The study recommended that commercial banks should increase level of project risk identification as it enhances the risk management activities on each significant risk.

Risk Assessment Practices and Performance

Kinyua, Ogollah, and Mburu (2015) examined the role of project risk assessment in relations to Performance with a focus on Information and Communication Technology projects amongst small and medium ICT enterprises in Nairobi. The study was based on descriptive research design and a sample size of 48 respondents that were purposively chosen. Using regression analysis, the study found that a unit increase in project risk assessment will lead to an increase in performance. This result was found to be statistically significant.

Kaliti (2015) undertook a study that amongst other aspects examined the role of risk assessment on the performance of firms within hospitality industry. The study utilized a descriptive survey research design and a sample size of 73 tour operators that were purposively chosen for the study. Structured questionnaires were administered for the purposes of data collection. Using quality as the proxy for performance, the study found that risk assessment was positively and significantly correlated to the quality aspects. Using regression analysis, the study found that a unit increase in risk assessment led to increase in project quality. These results were significant at 5% level of significance.

Charles and Oketch (2018) studied the influence of risk assessment on performance of sme projects in Machakos County, Kenya. The study applied pragmatism philosophical approach and descriptive survey research design. It tested the hypothesis at 95% confidence level which stated that risk assessment does not significantly influence performance of small and medium enterprise projects in Machakos County. The study used multiple regressions model against a sample size of 265 selected from a population of 5311 small and medium enterprise projects in Machakos County using stratified and convenience sampling approach as guided by the Yamane (1967) formula. A structured questionnaire was used to collect data whereby drop and pick approach was used. The study finding revealed that majority of the risk assessment components were positively supported. Inferential statistics depicted that risk identification, prioritization and managing change significantly influenced financial whereas organizational goals and objectives had insignificant influence. Further, risk identification and prioritization significantly influenced non-financial performance whereas organizational goals and objectives and managing change had insignificant influence. Management of SME projects should ensure the significant contribution by risk

identification and prioritization towards performance in general is upheld with further endeavors to improve on the risk assessment components which have insignificant impact on performance.

RESEARCH METHODOLOGY

Keller (2018) defines research design as strategies used by a study to incorporate different methodological aspects in a study in meeting the set study objectives. Descriptive research design was used to guide this study. Descriptive research design is methodological framework that gives in-depth details about a phenomenon under investigation in its natural setting (Orodho & Kombo, 2002). This research design is a comprehensive summarization of specific events experienced by individuals in a population (Mugenda & Mugenda, 2003). Target population refers to a group of individuals with the set characteristics that the study is interested on and falls on the geographical location of the study (Saunder, Lews, & Thornhill, 2019). The target population for this study was project managers, project officers and field extension officers working on agricultural Public Private Partnership projects in Kenya. There are selected 22 Public Private Partnership agricultural projects in Kenya. The projects have a total of 22 project managers, 69 project officers and 276 field extension officers. Therefore, the target population of this study was 367 project members.

The sample size of respondents was determined using Yamane 1967 formula. A sample size of 190 respondents were selected for the study. Proportionate stratified random sampling was used to select 190 project members (11 project managers, 34 senior operations officials, and 145 field extension officers). This study utilized structured questionnaires to obtain data for the study. The pilot study was carried out among 19 employees of two Public Private Partnership Projects as per the recommendation of Orodho (2003) that the sample size for a pilot study should be equivalent to 10% of the sample size for the actual study. Respondents of the pilot study were eliminated from the main study to avoid data contamination.

Both descriptive and inferential statistics were used in meeting the study objectives. The multiple linear regression was used to show how enterprise risk identification practices, and project risk assessment practices can be used to predict the performance of Public Private Partnership agricultural projects in Kenya. The entire data analysis was presented by the use of Tables and Figures

RESEARCH FINDINGS AND DISCUSSIONS

The study sampled 190 respondents out which a pilot was conducted with 19 respondents. Questionnaires were administered to 171 respondents and 130 successfully answered the questionnaires. This represents a 76% response rate which was considered adequate for analysis.

Risk Identification

The first objective sought to assess the influence of supplier identification on performance of petroleum companies in Nairobi city county, Kenya. Respondents were asked to tick on the degree to which they agree with listed statements on risk identification. Findings are presented in Table 1.

Table 1: Risk Identification

Key: 1-Strongly disagree, 2-Disagree, 3-Not sure, 4-Agree, 5-Strongly agree

Statements	SD		D		N		A		SA		M
	F	%	F	%	F	%	F	%	F	%	
The unproductive departments (or farming methods, or employees etc.) in the agricultural project are always identified	11	8.5	3	2.3	8	6.2	35	26.9	73	56.2	4.20
Budget estimates for the Public Private Partnership Projects are thoroughly scrutinized to identify any risk that may occur	4	3.1	4	3.1	10	7.7	50	38.5	62	47.7	4.25
The project managers always break down risk according to level of severity	37	28.5	74	56.9	7	5.4	6	4.6	6	46	2.28
Auditors are always involved in identification of risk in the agricultural project	3	2.3	6	4.6	13	10.0	44	33.8	64	49.2	4.23
There is constant identification of areas of high risk in the agricultural project	5	3.8	10	7.7	2	1.5	38	29.2	75	57.7	4.57

N=130

Findings show majority of the respondents strongly agreed that; there is constant identification of areas of high risk in the agricultural project (M=4.57), budget estimates for the Public Private Partnership Projects are thoroughly scrutinized to identify any risk that may occur (M=4.25), auditors are always involved in identification of risk in the agricultural project (M=4.23), and the unproductive departments (or farming methods, or employees etc) in the agricultural project are always identified (M=4.20). Respondents disagreed that the project managers always break down risk according to level of severity (M=2.28).

The respondents added that the risks identified for the agriculture projects are climate change risks, market risks, financial risks, pests, and diseases that may lower productivity of the projects. The climate changes are beyond the control of the farmers and they may cause damage incase of extreme weather conditions. The product prices and costs are also beyond the control of the project implementors. The price of farm products is affected by the supply of a product, demand for the product, and the cost of production. Financial risk occurs when the financiers do not avail funds on time leading to shortage. Some financiers may also withdraw from the project or lack the ability to continue to provide funds when needed. Pests and diseases lowers' productivity when they infest a farm. Risk also occurs as a result of changes in government policies. Such risks often have a major impact on farm income. The risks are identified through reviewing documents for the project, gathering information about common risks facing agricultural projects, using past information, and conducting an in-depth project strength, weakness, opportunity and threat analysis. Findings imply that the project implementors identify the risks that may affect performance of agriculture projects. However, they fail to prioritize risks which helps to identify the risks that need to be addressed first based on their effect for project objectives. Findings are in agreement with Tabi (2016) that risk identification was a major consideration before carrying out the construction projects, and Gitau (2015) there is risk identification during the planning stages of projects.

Risk Assessment

To second objective aimed examining the influence of project risk assessment practices on the performance of Public Private Partnership agricultural projects in Kenya. Respondents were asked to tick on the degree to which they agree with listed statements on risk asessment. Findings are presented in Table 2

Table 2: Risk Assessment

Key: 1-Strongly disagree, 2-Disagree, 3-Not sure, 4-Agree, 5-Strongly agree

Statements	SD		D		N		A		SA		M
	F	%	F	%	F	%	F	%	F	%	
The project managers always assess the likelihood of occurrence of risks	6	4.6	13	10.0	2	1.5	59	45.4	50	38.5	4.03
There is effective communication amongst team members on risk aspects of the agricultural project	38	29.2	77	59.2	3	2.3	12	9.2	0	0	2.34
The project managers frequently seek assistance from agricultural professionals to assess risk potentials of the project	16	12.3	9	6.9	3	2.3	66	50.8	36	27.7	3.75
The project always sets time for risk assessment in the agricultural project	6	4.6	5	3.8	1	0.8	26	20.0	92	70.8	4.48
Once a risk occurs, the magnitude of loss caused is immediately calculated	2	1.5	3	2.3	6	4.6	34	26.2	85	65.4	4.52

N=130

Findings show that majority of the respondents strongly agreed that; once a risk occurs, the magnitude of loss caused is immediately calculated (m=4.52), and the project always sets time for risk assessment in the agricultural project (m=4.48). Respondents also agreed that the the project managers always assess the likelihood of occurrence of risks (m=4.03), and the project managers frequently seek assistance from agricultural professionals to assess risk potentials of the project (m=3.75). The respondents disagreed that there is effective communication amongst team members on risk aspects of the agricultural project (m=2.34). The respondents also indicated that various methods are used to assess the risks involved in the agricultural projects. The common methods used are risk matrix asking the farmers and agriculture experts in the project letters the what if questions, and personal judgement of the project managers. The failure to assess the risks associated with the projects has a direct impact on their performance.

Findings imply that the risks that may affect agriculture projects are assessed effectively which helps the project managers to approximate the extent to which the risks would affect the project if they were to occur. The managers also seek professional help to asses the project risks and the magnitude of loss is calculated immediately when they happen. The project managers however do not communicate effectively to the project team members. This is a show of communication delay which may result to more damages if the risks were to occur. The findings are in agreement with Nkirimpai (2017) that risk assessment are used to assess the potential risks facing a project and they are an important part of effective risk management. They y help to identify and evaluate the likelihood and impact of different risks, and allow project managers to develop appropriate risk management strategies.

Project Performance

The respondents were asked to indicate their level of agreement on performance of agricultural projects. Respondents were asked to tick on the degree to which they agree with listed statements on project performance. Findings are presented in Table 3.

Table 3: Project Performance

Key: 1-Strongly disagree, 2-Disagree, 3-Not sure, 4-Agree, 5-Strongly agree

Statements	SD		D		N		A		SA		M
	F	%	F	%	F	%	F	%	F	%	
There is efficiency utilization of resources available for the project	40	30.8	46	35.4	7	5.4	20	15.4	17	13.1	2.45
The project works effectively within the set budget scope of the project	30	23.1	44	33.8	11	8.5	19	14.6	26	20.0	2.25
Stakeholders of the Public Private Partnership Projects are always satisfied by project output	20	15.4	22	16.9	4	3.1	56	43.1	28	21.5	3.62
There is efficiency in the day-to-day operations of the project	10	7.7	8	6.2	2	1.5	35	26.9	75	57.7	3.45
The project always meet the set timelines of project deliverables	33	25.4	46	35.4	8	6.2	27	20.8	16	12.3	2.59

N=130

Findings show that respondents agreed that stakeholders of the Public Private Partnership Projects are always satisfied by project output (m=3.62), and there is efficiency in the day to day operations of the project (m=3.45). Results also show that respondents disagreed that there is efficiency utilization of resources available for the project (m=2.45), the project is always meets the set timelines of project deliverables (m=2.59), and the project works effectively within the set budget scope of the project(m=2.25). The results imply that although the project stakeholders are satisfied with the agriculture projects, the projects challenges related to timely delivery, budget overruns, and resources utilization. Results support Njogu et al. (2016) that PPPs in the agricultural sector in Kenya have often struggled to meet their performance targets and deliver expected benefits, due to a range of factors including poor project planning, inadequate stakeholder consultation, and inadequate risk management.

Coefficient of Correlation

Correlation was determined using Karl Pearson's coefficient of correlation (r). This was with aim of determining the relationship between independent and dependent study variables. Findings are presented in Table 4.8 below.

Table 4: Correlation Analysis

Variables		Performance	Risk identification	Risk assessment
Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
Risk identification	Pearson Correlation	.678[**]	1	
	Sig. (2-tailed)	.001		
Risk assessment	Pearson Correlation	.501[**]	.643	1
	Sig. (2-tailed)	.020	.041	

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

Results in Table 4.8 show that; there is a strong significant relationship between risk identification and project performance (r=0.678, p=0.001), a strong significant relationship between risk assessment and project performance (r=0.501, p=0.020). Findings support various scholars who also established that there is a significant relationship between risk management practices and project performance. They include; Gitau (2015) risk identification during the planning stages have a significant effect on project performance, Kinyua, Ogollah, and Mburu (2015) that project risk assessment will lead to a significant increase in performance.

Regression Analysis

A multiple regression analysis was conducted to assess how a unit change in independent variables would predict changes in dependent variables. The coefficient of determination was conducted to assess how well the statistical model was expected to forecast future results. Table 5 presents the Model Summary.

Table 5: Model Summary

Model	R	r^2	Adjusted r^2	Std. Error of the Estimate
1	0.777	0.693	0.584	0.962

Predicators: (constant) Risk identification, Risk assessment,

The results show that the value of R^2 is 0.693. This shows that project risk management practices account for 69.3% variations in project performance. Therefore, other project risk management practices excluded from this study account for 30.7% variations in performance of Public Private Partnership agricultural projects in Kenya.

Table 6: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51.161	4	12.790	13.038	.000[b]
	Residual	115.731	118	.981		
	Total	166.892	122			

Predicators: (constant) risk identification practices, project risk assessment practices
Dependent variable: Project performance

The model was significant (p-value = 0.000) at the 0.05 level in describing the linear relationship between the study variables. As shown in Table 6, the F-statistic of 13.038 indicates that the model is capable of predicting the relationship between the independent and dependent variables.

Table 7: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant/Y Intercept	1.703	.799		2.131	.035
Risk identification	.512	.259	.411	5.325	.000
Risk assessment	.466	.228	.100	4.291	.000

According to findings in Table 7, the equation;

Project performance = 1.703 + 0.512 (risk identification) + 0.466 (risk assessment).

The regression equation shows that; a unit change in risk identification would predict a unit increase in performance of Public Private Partnership agricultural projects in Kenya by a factor of 0.512<0.000, a unit change in risk assessment would cause a unit increase in a unit increase in project performance by a factor of 0.466<0.000. The t statistics show that risk identification had the greatest influence on project performance (5.325) followed by risk assessment (4.291). Results are in consistent with Mutua and Kirui (2020) that risk identification, risk analysis had a positive significance on project performance.

Conclusion

Performance of agricultural PPP projects in Kenya is influenced by risk management practices which include risk identification, assessment. The project managers identify the risks that are mostly likely to occur in the agricultural projects. These risks are however not planned in order or priority meaning that it is not easy for a project manager to know the high and low risks. The accuracy of project team in identifying potential risks and risk events influence the optimization of resources allocated for agricultural projects and that the techniques employed in risk identification influence the performance of agriculture projects.

Risk assessment influence project performance. To successfully implement agricultural projects, there has been a comprehensive, broad-based approach that is widely understood and used regularly to clearly articulate where risks and opportunities exist throughout the projects. The communication on project risks is poor since not all project team members are informed of the risks.

Recommendations

The project managers should describe in detail risks to ensure that they are not mixed up with other project activities. Each risk should be given an identification number. During the course of the project, as more information is gathered about the risk, all of this information can be consolidated about the particular risk.

There should be effective communication to the project team on the risk assessment reports. This will alert them on the damages that would be caused if the risks were to happen and how to react if such risks happen.

Areas for Further Study

A similar study on relationship between risk management strategies and performance of other PPP projects in Kenya since this study sought to determine if the findings differ or are similar to the current study that was conducted on agricultural projects. A study focusing other risk management strategies that may affect performance of PPP projects in Kenya.

REFERENCES

Charles, M. R., & Oketch, T. *Influence of Risk Assessment on Performance of SME Projects in Machakos County, Kenya*.

Gitau, L. (2015). *The Effects of Risk Management At Project Planning Phase on Preformance Of Construction Project In Rwanda*. Unpublished Master of Science in Project Management Thesis: Jomo Kenyatta University of Agriculture and Technology.

Kaliti, G. (2015). *The Effect of Risk Management Practices on Performance of Firms in the Hospital;ity Industry*. Unpublished Master of Business Administration Thesis: University of Nairobi.

Keller, G. (2018). *Statistics for Management and Economics* (9th ed.). Cengage Learning.

Kinyua, E., Ogollah, K., & Mburu, D. K. (2015). Effect of Risk Management Strategies on Performanceof Small and Medium Information Communication Technology Enterprises in Nairobi , Kenya. *International Journal of Economics, Commerce and Management*, *3*(2), 1–30.

Kombo, D. K., & Tromp, D. L. A. (2019). *Proposal and Thesis Writing: An Introduction*. Nairobi, Kenya: Paulines Publications Africa, Don Bosco Printing Press.

Mburu, D. K. (2015). An assessment of effect of risk identification management strategy on supply chain performance in manufacturing companies in Kenya. *International Journal of Economics, Commerce and Management*, *III*(4), 1–17.

Mugenda, O. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: Acts Press.

Murtaja, O., & Al-Wattar, A. (2016). Enterprise Risk Management Analysis-Case Study of a Petrochemical Company in Qatar, (June).

Musyoka, B. (2012). *Risk Management StrategiesPractices and Success of Capital Projects in Kenya*. Unpublished Master of Business Administration Thesis: University of Nairobi.

Njogu, E. M. (2016). Influence of Stakeholders Involvement on Project Performance: A Case of NEMA Automobile Emmission Control Project in Nairobi County, Kenya. *Journal of Business Administration*, *2*(3), 67–75.

Nkirimpai, J. O., Magadi, S. O., & Koima, J. (2017). Influence of Enterprise Risk Management Practices on Financial Performance of Commercial Maize Farming Ventures in Nakuru County , Kenya, *2*(2), 1–8.

Orodho, A., & Kombo, D. (2002). *Research Methods*. Nairobi: Kenyatta University, Institute of Open Learning.

Ramkumar, A. (n.d.). Rice, Risk and Ritual: What Agriculture and Religion Tell Us about State-Minority Relations among the Khmu of Northern Laos, *5*(2), 1–12.

Saunder, M., Lews, P., & Thornhill, A. (2019). *Research Methods for Business Students* (4th ed.). Harlow: Prentice Hall Financial Times.

Tabi, C. (2016). *Risk Identification and Analysis as Practiced By Construction Firms in Ghana.* Unpublished Master of Science Thesis: Kwame Nkrumah University of Science and Technology.

Tadayon, M., Jaafar, M., & Nasri, E. (2012). An Assessment of Risk Identification in Large Construction Projects in Iran. *Journal of Construction Management and Economics*, *4*(3), 57–69.

Theuri, G. (2018). Determinants Of Project Sustainability Among Selected Non- Governmental Organizations In The Health Sector: A Case Of Nairobi County. *International Journal of Business and Management*, *2*(1), 6–10.

MUtua, A. N. (2020). *Project Risk Management Practices And Performance Of Core Banking System Projects In Selected Commercial Banks In Kenya* (Doctoral Dissertation, Kenyatta University).

International Monetary Fund. (2016). Public-Private Partnerships: An Overview. Retrieved from https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Public-Private-Partnerships-An-Overview-45366

World Bank. (2018). Kenya Agricultural Productivity and Agribusiness Project.