Int Journal of Social Sciences Management and Entrepreneurship 9(1): 904-918 2025

ISSN 2411-7323

www.sagepublishers.com

PROJECT RISK MANAGEMENT PRACTICES AND PERFORMANCE OF INFRASTRUCTURAL PROJECTS IN KISUMU CITY COUNTY, KENYA

[1] Ogallo Lynnjoy, [2] Dr. Osoro Anthony (Ph.D)

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

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

ABSTRACT

This study sought to explore on projects risk management practices and performance of infrastructure project in Kisumu City County, Kenya. The specific objectives of the study were: project risk identification, and project risk response planning on performance of infrastructure in Kisumu city County, Kenya. The was anchored incontinency theory and social cognitive theory. The study adopted a descriptive research design, and used both qualitative and quantitative approaches. The target population was 203 respondents from infrastructure projects in Kisumu city County. This study used purposive random sampling techniques. It was census survey. The study used open-ended and closed-ended questionnaire. The collected data was edited, coded and entered into Statistical Package for Social Science version 28. Data was analysed using descriptive and inferential statistics. In particular, Regression Analysis was use to investigate the relationships between hypothesized variables. Analysis of Variance (ANOVA) was also used to investigate whether independent variables has a combined effect on the dependent variable. The results were presented in tables and figures. The pilot test verified the reliability and validity of the research instrument. Where the reliability was over 0.7 and validity was over 0.5 respectively. The research study concludes and recommends that project risk management practices had strong relationship with performance of infrastructure project in Kisumu City County, Kenya. This validates the need to implement the finding of this study results towards improvement of performance of infrastructure projects.

Key Words: Projects Risk Management Practices, Performance of Infrastructure Projects, Project Risk Identification, Project Risk Response Planning

Background of the Study

The members of any organization engage in a myriad of tasks and activities on a day-to-day basis. While each member has his or her own list of task responsibilities, the tasks and activities performed by various members are typically interrelated and require some level of collaboration. It is impossible to track and measure all these activities without breaking them down into understandable units. One way of doing this is to look at the workflow within the company as various projects and to view the managers and employees involved in those projects as teams (Aarthipriya et al., 2020). If that approach is accepted it is apparent that project and team management are important subjects for any company and that the members of the company, particularly executives and managers, need to be trained in how to effectively design and implement projects and collaborate with one another in a team environment. A set of tasks and activities that need to be performed are not necessarily a project regardless of how important they are to the organization or the number of members that might be involved. A project is indeed a set of tasks and activities; however, a project is more specifically defined as a temporary process to complete a clearly identified set of tasks and activities within a defined period in order to achieve clear and agreed upon goals and objectives (Burtonshaw, 2017).

Projects are generally used for new or one-time efforts, such as development of a new product; however, once a project is completed certain aspects of the project activities may be incorporated permanently into the organizational structure. A project is a process that must be carried out in accordance with very definite requirements relating to time, resources and performance specifications of the outputs of the project. As such, a project must be "managed" to ensure that the goals and objectives are clear; that the process is well thought out; and that resource limits in terms of people, money, time, raw materials and equipment are observed and respected. Project management encompasses all of the skills and tools necessary to effectively define, plan and execute projects. Project management is a tool for conducting and completing unique, one-of-a-kind projects or functions necessary for execution of the strategy of a company without disrupting what would otherwise be the normal workflow imbedded in the formal organizational structure (Aarthipriya et al., 2020).

In general, project management creates and imposes a temporary management system over the normal organizational structure in order to accomplish a specific task or activity. Harold Kerzner, one of the leaders in research relating to project management, offers the following useful formal definition of project management that identifies key elements of the process: "Project management is the planning, organizing, directing, and controlling of company resources for a relatively short-term project that has been established to completed specific goals and objectives. Furthermore, project management utilizes the systems approach to management by urthermore, project management utilizes the systems approach to management (Burtonshaw, 2017).

Project Management Copyright © 2023 by Alan S. Gutterman. Information about the author and permitted uses of this Work appears at the end of this Work. 2 having functional personnel (the vertical hierarchy) assigned to a specific project (the horizontal hierarchy)."1 Planning, organizing, directing and controlling are four of the five functions or activities that are normally associated with traditional management and each of these are reflected in Kerzner's definition of project management. Missing from the array of activities delegated to a project manager is the responsibility for "staffing," which is the fifth activity that is normally associated with traditional management. The reason is that staffing remains a line responsibility and the project manager can only request resources while the final decision as

to what, and how many, resources will be diverted to the project will normally be left to the line managers for each of the functions involved in the project (Burtonshaw, 2017).

There are exceptions to this rule, of course, for situations when senior management intercedes and overrides the discretion of line managers to ensure that sufficient resources are diverted to certain mission-critical projects that must take priority over day-to-day tasks and activities. An example is creation of "project teams," which are groups of specialists from throughout the company who are brought together on a one-time basis by senior management to collaborate on solving a particular issue or problem that is central to the company's strategy and operational activities (Aarthipriya et al., 2020). While project management pertains to relatively short-term projects, there is no hard and fast rule with respect to scope and duration. For example, engineering or construction projects may be as short as six months and as long as five years. Larger projects, such as the designing, building and launching a nuclear power facility or a state-of-the-art manufacturing plan, may take as long as ten years. For most small companies, however, short-term projects generally must be completed within three to twelve months since they are typically critical to the overall mission and strategy of the company and delays can be particularly risky to the survival of the company. Estimating the duration of a proposed project can be difficult in many cases since the actual scope of the work required may be impossible to determine until project activities are well under way (Aarthipriya et al., 2020). Moreover, project managers need to carefully guard against the possibility of unanticipated changes in the scope of the project that can lead substantial deviations from the original schedule as well as additional costs. Since projects are, by their very nature, limited in scope, the participants must deal with specific constraints that will ultimately determine how the work of the project team is designed and scheduled and the specifications and value of the outputs of the work of the team. For internal projects, the relevant constraints include time, cost and performance. However, when the project is done for a customer, an additional constraint—customer satisfaction—must be added. Another thing to consider for customer-focused projects is that the customer is concerned only with results and has no real interest in how the company designs the way in which the project is approached and completed. Regardless of whether a project is internal or done for a specific customer, success will depend not only on technical abilities, and the availability of resources, but also upon the creation (Burtonshaw, 2017).

Statement of the Problem

Project Risk management aims to reduce the risk areas in the project life cycle. Also according to Muraya and Rambo (2019), it has effect on performance of infrastructures projects in Kisumu city county, Kenya. Proper risk management helps to avoid project crises and improve problem solving by managing risks early in the project life cycle. Plenty of positive reasons for investing in effective risk management practices can be found. Effective risk management provides a better basis for decision-making at strategic, tactical and operational levels when it builds logical, systematic and transparent auditable processes. The use of those processes must end up by providing a clear understanding of potential risk profiles and options for dealing with them. In order to prevent possible risks and conflicts, the definition of the possible critical risks in projects is necessary. Risk management starts with identifying potential problems and eliminating or reducing the damage the realisation of those risks would cause.

Infrastructure projects management have failed to sustain their operations because of inadequate capacity during the construction process. Other reasons are not using modern technologies, bad management skills employed by infrastructure managers, funds mismanaged leading to poor quality projects, no training of staff and relying on public sector for service provisions. It has been observed that most of the Infrastructure projects management implementation schedule lag from what was planned in the design/ feasibility studies (Republic

of Kenya, 2019). Delays in completion of infrastructure development projects during implementation continue to pose great challenges to developing countries (Sabasvan & Soon, 2017). Despite the importance of infrastructure and the huge financial resources committed to it, the intended benefits are partly or never realized due to many unsuccessful or delayed project completions (Mwandali 2016).

Muraya and Rambo (2019) in their study noted that it is common to have non-functional infrastructure systems with features like no protection of the infrastructure like fencing, vandalism of equipment like solar pumps for boreholes and hand pumps for shallow wells and infrastructure pans and the unwillingness of community members to manage and maintain the infrastructure sources lead to collapse of the infrastructure projects management. The reasons for delays are primarily due to an unreasonable project scope, inadequate early planning, and the absence of risk management systems. The riskor further contributes to delay due to lack of resources and labour productivity. Over ambitious estimates, incorrect task assessment, lack of task clarity, design/ approval delays and interference in the decision-making process by the client add on to the delay (Shaikh, 2019). Effects of construction delays include total abandonment of the project; ligation/ court cases; time and cost overrun (Owusu & Aggrey, 2020) and poor quality of outputs. This study therefore, sought to establish the relationship between implementation of infrastructures projects management and performance of risks in Kisumu City County, Kenya.

Objectives of the Study

The general objective was to establish the relationship between project risk management practices and performance of infrastructure projects in Kisumu City County, Kenya.

Specific Objectives

The specific objectives of the study were: -

i. To determine the effect of project risk identification on performance of infrastructure projects in Kisumu City County, Kenya.
ii. To evaluate the effect of project risk response planning on performance of Infrastructure projects in Kisumu City County, Kenya

LITERATURE REVIEW

Theoretical Review

Contingency Theory

According to Cox (1993), improved contingency theory from Max Weber's bureaucracy and Fredrick Taylor's scientific management theory. About this contingency theory, there is no universally applicable set of management values to manage organizations under all circumstances. This theory opposes the theory of Fredrick Taylor's scientific management, who came up with the standard principles of management and alluded that for a firm to advance in terms of its objectives and goals, it must apply the principles of management regardless of the type, the size, and environment it operates. Warren (2005) indicated that organizations are separately diverse, face different situations, and need different ways of managing. Therefore, contingency theory postulates that it is a class of behavioral theory that claims there is no best way to organize a corporation, lead a company, or make decisions.

According to Gupta & Boyd (2008), indicated that contingency theory is about the need to achieve a fit between what the enterprise is and wants to become and what it does; how it is structured, and the processes, procedures, and principles it puts into effect. Hence, organizations are supposed to establish diverse strategies in order to realize their objectives and goals. This is because a single strategy may not be suitable due to the environmental influences

in the market. Rue and Byars (2014) allude that contingency theory is an extension of humanistic theories, whereas classical theories assumed a universal view in managing enterprises; whatever worked for one enterprise could work for another. However, this was an extension of Taylor and Max Weber's ideas. According to Gupta & Boyd (2008), contingency theory explains that there is no universal principle to be found in the management of enterprises. However, one learns about management by experiencing many case problem situations and determining what will work for every situation. This is true because different infrastructure projects management have a different unique challenges from one another. For example, a infrastructure projects management may be experiencing a shortage of materials, and another one may be experiencing go slow or boycotts of workers. The approach to solving these challenges may be quite different.

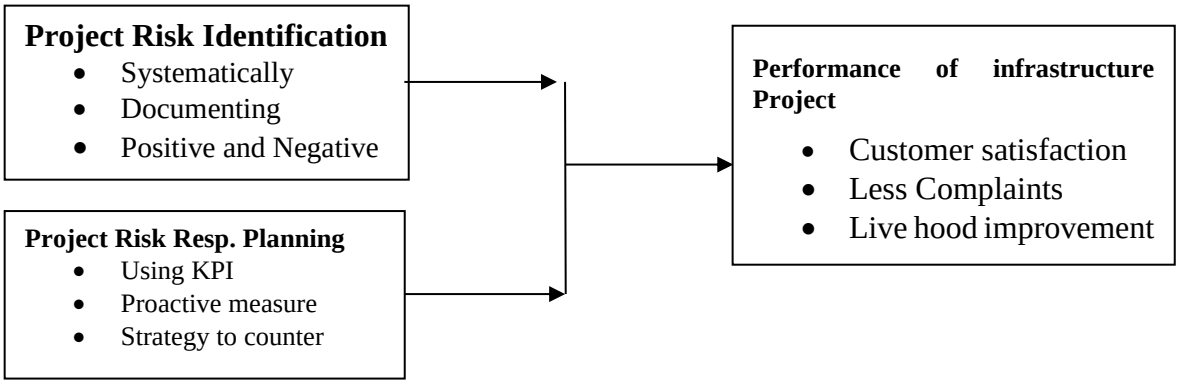
Social Cognitive Theory

According to this theory, behavior is shaped by a dynamic interplay between personal factors, environmental factors, and behavior itself. Personal factors such as knowledge, attitudes, and self-efficacy can influence behavior change. If the individuals involved in risks in Kisumu City County lack knowledge about the importance of Infrastructure projects management, or have negative attitudes toward the projects, they may be less likely to embrace the changes that come with the implementation of the projects. However, if they have high levels of self-efficacy, or confidence in their ability to perform their duties despite the changes, they may be more likely to adapt to the changes and improve their performance (Cox 1993).

Environmental factors such as organizational culture and leadership can also influence behavior change. If the organizational culture in Kisumu City County supports the implementation of Infrastructure projects management and values risks performance, individuals may be more likely to embrace the changes and improve their performance. Additionally, if leadership in Kisumu City County communicates the importance of Infrastructure projects management and supports the risks team through the changes, individuals may be more motivated to adapt and improve. Finally, behavior itself can influence behavior change. As individuals in risks in Kisumu City County start to experience the positive effects of Infrastructure projects management, such as improved infrastructure access and increased revenue generation, they may become more motivated to continue improving their performance. Additionally, as they observe others in the organization successfully adapting to the changes, they may be more likely to adopt similar behaviors. In summary, the implementation of Infrastructure projects management in Kisumu City County can lead to community participation in risks performance, according to Social Cognitive Theory. By addressing personal, environmental, and behavioural factors, the County can support its risks team (Gupta & Boyd, 2008).

Conceptual Framework

A conceptual frame work is defined as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation (Kombo and Tromp, 2019). A conceptual framework refers to a research tool intended to assist a researcher to develop awareness and understanding of the situation under scrutiny and to communicate it. It is a diagram that visually shows the relationship between the independent and dependent variable of the study.



Independent Variables **Dependent Variable**

Figure 2.1: Conceptual Framework

Project Risk Identification

Project risk identification" refers to the initial step in project risk management, where potential threats and opportunities that could impact a project's objectives are systematically identified and documented, essentially creating a comprehensive list of possible events that could affect the project's success, allowing for proactive planning and mitigation strategies to be developed. Project risk identification is considered by many researchers as one of the components of project delivery process and use project performance as the basis of evaluating its effectiveness. Project risk identification is identified as one of the key tools that stakeholders use to ensure that projects are successful (Naoum, Fong & Walker, 2004; Ling & Chan, 2002; Thomas, Macken, Chung & Kim, 2002; Naoum 2017). In separate studies Faniran, Love and Smith (2000) described Project risk identification as the systematic arrangement of project resources in the best way so as to achieve project objectives. According to Faniran et al. (2000), project success is measured in terms of the achievement of project objectives. Naoum et al. (2014) state that Project risk identification is the process of determining appropriate strategies for the achievement of predefined project objectives and it classified into preconstruction and construction planning. Preconstruction planning is also referred to as pre-risk planning which is the planning done during the conception, design and risks stages of a project. Construction planning on the other hand refers to risk planning which describes the planning done during the construction of a project (Faniran et al., 2018).

Project risk identification has are three levels, these are; end-user level of planning which focuses on the functional characteristics of the project and the end-product, the second level is the technical level that focuses on the technical specifications of the project deliverables that are needed to support the functional requirements, and the third level is the Project risk identification level which focuses on planning the activities and processes that need to be carried out to ensure that the technical work proceed effectively (Dvir, Raz &Shenhar, 2015). These three levels of planning can also be referred to as project conception planning, project design planning and risk planning. From the review above, it can be understood that different

forms of planning are carried out in each of the five stages namely: conception, design, risks, construction and closeout (Dvir et al., 2017).

It is further pointed out by Dvir et al. (2017) that in Project risk identification, project objectives are the focal point of every effort and activity and they are important in planning because project plans are derived from them. Project objectives in Project risk identification are first defined; then the strategies to achieve them are formulated and presented as project plans and these are used in evaluating the achievement of the objectives (Dvir et al., 2017). Project risk identification can therefore be regarded as the process of defining project objectives, determining the framework, methods, strategies, tactics, targets and deadlines to achieve the objectives and the techniques of communicating them to project stakeholders.

The process of Project risk identification requires that clients' expectations and available resources are defined first, matched to set project objectives, so that available options are identified and evaluated and the most appropriate frameworks, strategies and tactics to achieve the objectives are selected (Puthamont &Charoenngam, 2016). The final planning process is communicating the objectives and the frameworks, methods, strategies, targets/deadlines to achieve them to people, parties and organizations concerned with their implementation, monitoring and control. The end products of Project risk identification are numerous project plans that represent defined strategies to achieve defined project objectives (Puthamont & Charoenngam, 2016).

Project Risk Response Planning

"Project risk response and planning" refers to the process of identifying potential risks within a project, analyzing their impact, and then developing specific strategies and actions to either mitigate, avoid, transfer, or accept those risks, aiming to minimize their negative effects on the project's goals and objectives; essentially, it's the proactive planning to manage and address potential project risks throughout its lifecycle. Effective Project risk response planning is essential for ensuring that resources are used efficiently and that goals and objectives are achieved. In the context of risks, good Project risk response planning can help to ensure that risks are managed in a transparent, accountable and effective manner. Operations, on the other hand, refer to the processes and activities involved in the day-to-day management of an organization or project. Effective operations management is essential for ensuring that resources are used efficiently and that goals and objectives are achieved in a timely and effective manner. In the context of risks, good operations management can help to ensure that risks are managed in a timely and efficient manner.

The impact of Project risk response planning and operations on the performance of risks is likely to be significant. Effective Project risk response planning can help to ensure that risks are managed in a transparent and accountable manner, which can improve stakeholder confidence and trust. Effective operations management can help to ensure that risks are managed efficiently and effectively, which can lead to improved performance and cost savings. In order to improve the performance of risks, it is important to focus on both Project risk response planning and operations. This may involve developing policies and procedures that promote transparency and accountability in risks, as well as investing in the development of the necessary skills and resources to effectively manage risks. It may also involve adopting new technologies and approaches to risks that can help to improve efficiency and effectiveness (Muhwezi et al., 2014).

Performance of Infrastructure Projects

Risks for infrastructure Projects are becoming mainstream in all types of organizations (Pellegrinelli & Murray-Webster, 2011). For the past sixty years, organizations have increasingly been using projects and programs to achieve their strategic objectives (Morris

& Jamieson, 2004), while dealing with increasing complexity, uncertainty, and ambiguity affecting organizations and the socio-economic environment within which they operate (Gareis, 2005). Through projects, resources and competencies are mobilized to bring about strategic change, and thereby create competitive advantage and other sources of value. The Government has used Performance Risking since 2003 as a key accountability framework in its endeavour to improve service delivery in the public service. Performance Risking is part of the broader public sector reforms aimed at improving efficiency and effectiveness in the management of the public service. The United Nations Convention on risks for the international sale of goods is a summary of the most important law systems, in the field of international merchandising, i.e. mostly between the Romanist (Roman-Germanic) system and the Anglo-Saxon one (of common law), which ensured the success and the relatively wide success and adherence to the Convention. Key tool in levelling the international trade law, the Vienna Convention adopts modern solutions, compatible with the current requirements of the international trade relations. At international level, the Convention became effective on January 1, 1988, and over 85 States have ratified it currently, turning it into one of the most successful uniform international laws. The Convention has four parts: the scope and general provisions (First Part), Forming the agreement (Second part), Sale of Goods (Third Part) and Final provisions (Fourth Part). According to the provisions of the art. 92, upon becoming a member of the Convention, any State may declare not the it is not bind by Second or Third Part of the Convention. The goal of the Vienna Convention was to set a complex of uniform material legal norms enforceable to the international sales agreements and aimed for the use of the signatory states without appealing to own national regulations on the matter. Performance is what results from a team reaching the objectives of the outsourced project. In outsourcing as with any other project context, project performance can be measured as the extent to which a project is completed in time, within budget, and demonstrates a quality that satisfies customer requirements (Kerzner, 2009). The subject of project success is at the heart of project management. Project Management Institute (2013) has stated that the project manager is responsible and accountable for setting realistic and achievable boundaries for the project and to accomplish the project within the approved baselines. Many factors impact the degree of success in outsourced projects.

However, since outsourced projects always have a specific performance outcome, this study adhered to Hackman's (1987) concept of performance being the degree to which a team meets its goals, and how well its output fulfils project objectives. The study was interested in perceptions of the general work performance of outsourced project teams in medium manufacturing enterprises. Various surveys report a surprisingly high rate of outsourcing failures. For example, a 2003 report published by research and consulting company Gartner reported that one-half of all outsourcing deals are labelled "failures" by decision-making executives because the results do not meet expectations (Keiser, 2003). A survey by PA Consulting Group (2003) found that sixty-six percent of the benefits anticipated by enterprises from project outsourcing were only partially realized. However, these assertions need to be validated locally in medium manufacturing enterprises in Nairobi County.

Empirical Review

Project Risk Identification

Project risk identification involves the planning, organizing, and controlling of resources to achieve project objectives within specific constraints (PMI, 2017). On the other hand, risks refers to the process of managing risks throughout their lifecycle, including drafting, negotiation, monitoring, and amendment (IACCM, 2018). Effective risks ensures compliance with riskual obligations, mitigates risks, and fosters collaboration between project stakeholders (Smith, 2018).Project risk identification and risks are closely related concepts in the field of business and management. Project risk identification involves the planning, organizing, and

controlling of resources to achieve specific goals and objectives within a defined timeframe and budget (Kerzner, 2017). Risks, on the other hand, involves the management of risks throughout their lifecycle, from creation to completion, to ensure that all parties fulfill their obligations and achieve the desired outcomes (IACCM, 2019).

The performance of risks has a significant impact on the success of Project risk identification. Effective risks helps to ensure that project goals and objectives are met, resources are used efficiently, and risks are managed effectively (Hass, 2013). It also helps to ensure that riskual obligations are met, and any issues or disputes are resolved in a timely and efficient manner, reducing the likelihood of delays, cost overruns, and legal disputes (Graham & England, 2017). However, poor risks can have significant negative impacts on project performance. For example, inadequate risks can lead to misunderstandings, delays, and disputes, which can affect project timelines and budgets (Hass, 2013). It can also lead to legal disputes, which can be costly and time-consuming (Graham & England, 2017). In conclusion, Project risk identification and risks are closely related concepts, and effective risks is essential for the success of Project risk identification. Proper risks helps to ensure that riskual obligations are met, risks are managed, and resources are used efficiently, while poor risks can lead to delays, disputes, and legal issues.

Project Risk Response Planning

Project risk response planning and operations have a significant impact on the performance of risks within the context of Project risk identification. Project risk response planning refers to the framework of policies, procedures, and decision-making processes that guide the execution of risks activities (Kerzner, 2017). Operations, on the other hand, refer to the day-to-day management and implementation of risk-related tasks and activities (Pinto, 2016).Effective Project risk response planning structures and practices positively influence the performance of risks. A well-defined Project risk response planning framework provides clarity on roles, responsibilities, and decision-making authority, ensuring that risks activities are conducted in a structured and accountable manner (IACCM, 2014). This promotes consistency, transparency, and adherence to visual obligations, leading to improved risks performance.

Furthermore, strong Project risk response planning fosters compliance with legal and regulatory requirements, which is essential for successful risks (Hartman & Ashrafi, 2012). By ensuring that risks are managed in accordance with applicable laws, regulations, and industry standards, organizations can minimize legal risks, disputes, and non-compliance issues, thereby enhancing risks performance. In addition to Project risk response planning, efficient and effective operations are crucial for the performance of risks. Well-designed and documented processes, supported by appropriate tools and systems, streamline risk-related activities, facilitate timely communication, and enable effective monitoring of project performance (Hickman & Silva, 2018). This leads to improved efficiency, reduced errors, and better control over risks processes, ultimately enhancing performance.

On the other hand, weak Project risk response planning and inefficient operations can hinder risks performance. Inadequate Project risk response planning structures may result in unclear roles, lack of accountability, and inconsistent decision-making, leading to delays, mismanagement, and non-compliance (IACCM, 2014). Similarly, inefficient operations characterized by manual, error-prone processes, and inadequate resources can result in bottlenecks, communication breakdowns, and suboptimal risks performance (Hickman & Silva, 2018). Effective operations involve the efficient and effective management of resources, including time, budget, and personnel, to achieve project objectives (Pinto & Slevin, 2019). By effectively managing resources, risks teams can meet riskual obligations and achieve project goals, ultimately improving the overall performance of risks. Furthermore, effective Project

risk response planning and operations can support effective risk management within the risks process (Bryde, 2008).

By implementing appropriate risk management strategies and ensuring compliance with legal and regulatory requirements, risks teams can minimize the negative impact of risks on project outcomes, contributing to better risks performance. On the other hand, poor Project risk response planning and operations can hinder the performance of risks. Ineffective Project risk response planning structures can lead to non-compliance, inadequate decision-making, and lack of accountability, resulting in poor risks performance (Bryde, 2008). Similarly, poor operations management can lead to delays, cost overruns, and inadequate execution of riskual obligations, further impacting the overall performance of infrastructure projects (Pinto & Slevin, 2019).

RESEARCH METHODOLOGY

The study adopted a descriptive survey research design since the study intends to gather quantitative data that describes the nature and characteristics of effect of implementation of infrastructure projects management on performance of risks in Kisumu City County, Kenya. Sekaran and Bougie (2011) add that this design was help one to understand the characteristics of a group in a given situation and assists in systematic thinking about aspects of a given situation. This design was allowed researchers to collect quantitative data which can be analysed quantitatively using inferential statistics (Saunders *et al.*, 2009). The target population was 203 respondents from infrastructure projects management in Kisumu City County, Kenya. This study used purposive random sampling techniques. The study adopted purposive random sampling technique. The selected departments/sections formed the stratus. The entire element of 203 respondents from the whole population. It was a census survey. From each strata, we selected respondents randomly from four (4) strata of Project Managers, Project Accountants, Project Procurement Officers and Project Community Executives. The study used questionnaires to collect data from the respondents. The questionnaire is common instrument for observing data beyond the physical reach of the observer (Davies & Dodd, 2012). The collected data was edited, coded and entered into Statistical Package for Social Science (SPSS) version 28. Qualitative data was analysed by the use of content analysis. This study used both descriptive and inferential statistics to analyse the quantitative data. The data collected was tested for the assumptions of various analytical models upon which the most appropriate was selected, for example the diagnostic for the use of correlation analysis and multiple linear regression are that the data is normally distributed.

RESEARCH FINDINGS AND DISCUSSION

Out of 183 questionnaires that were circulated to the respondents, 169 of the respondents dully filled and retuned questionnaires; yielding a response of 92.3%. This was considered to be a very reliable response rate for the generalization of study findings is in line with Sharma (2018), states that a response rate of 70% and above is believed to be a reliable response rate. This was less 11 (10%) respondents who were pilot tested.

Descriptive Statistics

In this section, the study presents findings on Likert scale questions on the role of inventory management practices and performance of Infrastructure projects in Kisumu City County, Kenya. The study specifically presents the effect of project risk identification, project risk response planning, on performance of preference group's Infrastructure projects in Kisumu City County, Kenya. Respondents were asked to use a 5-point Likert scale where 5 (SA) = Strongly Agree, 4(A) = Agree, 3(UD) = undecided, 2 (D) = Disagree, and 1(SD) = Strongly Disagree. Results obtained were interpreted using means and standard deviations where a mean

value of 1-1.4 was interpreted as; (SD) =strongly disagree, (D)= disagree, N= neutral, (A)= agree and (SD) = strongly agree.

Project Risk Identification

Respondents were requested to give their responses in regard to Project risk identification in a five point Likert sale where SA=Strongly Agree, A=Agree, N= Neutral, D=Disagree, and SD= Strongly Disagree. Respondents were requested to give their opinion on the variable Project risk identification. From table 1, the respondents unanimously agreement that Project risk identification ensured performance of Infrastructure projects and periodic review in Kisumu City County in Kenya viable with agreement of a mean was 3.742, and Standard Deviation of 1.061; Through their systemically experience in Kisumu City County the respondents gave neutral response with a mean of 3.513 and Standard Deviation of.924; their documentation has contribution to the quality and innovation of the project risk identification with strongly agree a Mean of 3.921 and Standard Deviation of .953; positive and negative attitude n in Project risk identification it is important to put in place and maintain procurement the respondents gave a strongly agree with a Mean of 4.01, and Standard Deviation of .769; The management of Kisumu City County in Kenya implements performance of Infrastructure projects award the respondents disagreed with a Mean of 3.546 and SD=1.301); and Project risk identification enhances performance of Infrastructure projects at Kisumu City County in Kenya, they agreed with a Mean of 3.56, Standard Deviation of .701. This finding agrees with the findings of Nyile *et al.* (2022) who observed that clear description of Project risk identification, enhance effective performance of Infrastructure projects in Kisumu City County, Kenya.

Table 1: Project Risk Identification

Statement	Mean	Std. Dev.
My project ensures systematically Identification Through teamwork	3.742	1.061
Project risk identification in Kisumu City County has been able to make decisions on timeliness	3.921	.953
has contribution to performance of Kisumu City County, Kenya	3.903	.9005
By frequent & accurate Project risk assessment It is important to put in place Project risk identification	4.061	.769
The management of strategic risk identification	3.546	1.301
Project risk identification enhances performance of Kisumu City County, Kenya.	3.566	.701

Project Risk Response Planning

Respondents were asked to give their responses in regard to project risk response planning on performance of Infrastructure projects in Kisumu City County in Kenya i.e. 5 point likert sale where SA=Strongly Agree, A=Agree, N= Neutral, D=Disagree, and SD= Strongly Disagree. From table 2, respondents, respondents agreed that project risk response planning ensure performance of Infrastructure projects Kisumu City County in Kenya; the respondent gave a Mean of 4.037 and Standard Deviation of.760; using key performance indicators on performance of Infrastructure projects Kisumu City County in Kenya , they gave strongly disagree with a Mean of 4.032 and Standard Deviation of .740; proactive measures of project risk response planning can affect performance of Infrastructure projects in Kisumu City County in Kenya; the gave strongly agree with a Mean of 4.206, Standard Deviation of .797; In cases of aggressive community involvement systems to embrace a better performance of Infrastructure projects in Kisumu City County in Kenya they gave a Mean of 4.009 and

Standard Deviation of .803; strategizing on how to counter risks towards project risk response planning to performance of Infrastructure projects in Kisumu City County in Kenya ;most of the respondents were neutral with a Mean of 3.925 and Standard Deviation of .736; and to enhance good planning teams, our county has in recent time conducted modern sensitivity resolution towards performance of Infrastructure projects in Kisumu City County in Kenya; they gave a Mean of 4.104 and Standard Deviation of .755.

These findings are in line with the findings of Nyile *et al.* (2022) who observed that the characteristic of project risk response planning are the best value reaction to sort out non-performance of, after Project risk response planning, for resolving return on investment. The problem areas giving rise to disputes are mainly related to Kisumu City County's matters.

Table 2: Project risk response planning

Statement	Mean	Std. Dev.
County project risk response planning on performance of Kisumu City County in Kenya.	4.037	.760
My project embrace using KPI on performance of Kisumu City County in Kenya.	4.32	.740
project risk planning embrace Proactive measures on performance of Kisumu City County in Kenya	4.206	.797
project risk response planning on performance of Infrastructure projects in Kisumu City County in Kenya	3.009	.803
project risk response planning for strategy to counter on performance of Infrastructure projects Kisumu City County in Kenya	4.925	.736
proper project risk response planning processes on performance of Kisumu City County in Kenya	4.104	.755

Performance Of Infrastructure Projects In Kisumu City County

Respondents gave their level of agreement on various statements relating with performance of Infrastructure projects in Kisumu City County, Kenya. From the research findings, respondents were in agreement that performance of Infrastructure projects in Kisumu City County in Kenya is being affect by supply chain agility, they gave 63.2%; when asked about customer satisfaction and its effect on performance of Infrastructure projects in Kisumu City County in Kenya they gave strongly agree of 60.7 %; When the respondents were asked to show their level of agreement on how less complaints affects performance of Infrastructure projects in Kisumu City County in Kenya they gave strongly disagreed of 9%; When also the respondents were asked to show their level of agreement on return on investment of the in Kenya government on performance of Infrastructure projects in Kisumu City County in Kenya they gave They gave agreed of 59.7%; Alternative strategy to contribute to Project monitoring and control on performance of Infrastructure projects in Kisumu City County in Kenya they gave neutral of 42.5% and through strategic application, performance of private is measured by quality, flexibility, Project monitoring and control on performance of Infrastructure projects in Kisumu City County in Kenya they gave disagreed of 74.2%. The outcome is in line with the findings of Mutai and Osoro (2021) they observed that some of the factors that contribute to inefficiency in public procurement as corruption, delayed payments, poor planning, statutory amendments, insufficient use strategic evaluation low public participation, and improper payment procedures negatively affects performance of Infrastructure projects Kisumu City County in Kenya in Kenya.

Table 3: Performance of Infrastructure projects in Kisumu City County

Statements	Yes (%)	No (%)
Customer Satisfaction an affects performance of FBM Kisumu City County in Kenya	52.2	47.5
No. of Infrastructure projects can affects their performance Of infrastructure projects in Kenya	60.6	36.4
Access to less complaints can affect performance of FBM in Kenya	44	56
can affects performance of infrastructure Kisumu City County in Kenya	59.7	41.3
Complaints can affects performance of Infrastructure projects Kisumu City County in Kenya	42.2	57.5
performance of Infrastructure projects in Kisumu City County in Kenya	74.1	25.9

Pearson Correlation Analysis

The study further conducted inferential statistics entailing both Pearson and regression analysis with a view to determine both the nature and respective strengths of associations between the conceptualized predictors such as Project risk identification, and Project risk response planning and performance of Infrastructure projects in Kisumu City County, Kenya.

Table 4: Correlation Coefficients

		Performance of Infrastructure projects	Project risk identification.	Project risk response planning
Performance Of Kisumu City County	Pearson correlation	1		
	Sig. (2-tailed)			
Project risk identification	Pearson correlation	.534*	1	
	N.	169*		
	Sig. (2-tailed)	.000		
Project risk response planning.	Sig. (2-tailed)	.001	.041	
	Pearson correlation	.153*	.240	1
	N	169*	169	
	Sig. (2-tailed)	.000	.035	
			169	169

From the findings, a positive correlation is seen between each variable and performance. The strongest correlation was established between Project risk identification and performance of Infrastructure projects in Kisumu City County in Kenya (r = 0.534 and found between Project risk response planning and performance of Infrastructure projects in Kisumu City County (r = 0.153). This is tandem with the findings of Ongeri and Osoro (2021), who observed that all independent variables were found to have a statistically significant association with the dependent variable at over 0.05 level of confidence.

Regression Analysis

To determine the relationship between the independent variables and the dependent variable and the respective strengths, the regression analysis produced coefficients of determination. Findings in table 4.16 reveal a positive relationship between the performances of Infrastructure projects in Kisumu City County in Kenya. From the result shown below, it's clear that when all the independent variables are regressed against the dependent variable the constant gives a

negative result meaning there is a strong relationship and how each predator has an effect on the dependent variable.

Table 2 Regression coefficient Results

Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	**Std. Error**	**Beta**	
(constant)	-.132	.060	-1.144	4.004	.002
Project risk identification	464	.132	555	5.472	.003
Project risk response planning.	.256	.115	.321	2.657	0.001

b. Dependent Variable: performance of Infrastructure projects in Kisumu City County in Kenya

A unit change in project risk identification would thus lead to a .464 effect on performance of Infrastructure projects in Kisumu City County in Kenya sector ceteris paribus also unit change

in project risk response planning would lead to .256 of sector. This finding is in line with the findings of Ongeri and Osoro (2021). This implies that among other factors, Project risk identification, Project risk response planning are significant determinants of performance of Infrastructure projects in Kisumu City County, Kenya.

Conclusion

The study concludes that there is a positive relationship between Project risk identification and Performance of Infrastructure projects Speciation identification, periodic design assessment, continues improvement and proactive assessment are among the Project risk identification factors that significantly influenced the performance of Infrastructure projects in Kisumu City County, Kenya. The study further concludes that by implementing Project risk identification has enhanced performance of Infrastructure projects in Kisumu City County, Kenya, leading to operational increase in efficiency and effectiveness .Therefore, the study concludes that Infrastructure projects in Kisumu City County, Kenya has significantly increased their strategic ' quality management in the In Kenya government in strategic management practices.

The researcher concludes that there is a positive relationship between Project risk response planning and performance of Infrastructure projects in Kisumu City County, Kenya. Partnership enforcement policy, collective bargaining, alternative dispute resolution processes, free expression of concerns by involved practices are among the coordination factors that significantly influenced the performance of Infrastructure projects in Kisumu City County, Kenya. The researcher further concludes that by adopting alternative coordination and partnership mechanisms as it was observed at Kisumu City County in the level of performance of Infrastructure projects in Kisumu City County has increased. Therefore, the study concludes that Kisumu City County in Kenya has been experiencing significant increase in service delivery through embracing proper coordination in the supply chain practices.

Recommendations

Project Risk Identification

The study recommend that Project risk identification formalizes relations between practices within a robust legal framework, but is much more besides; it is an opportunity to define the arrangements that encompass every aspect of what outcomes the Kisumu City County in Kenya wants from the strategic and how it wants the relationship to work. This means that the In Kenya needs to take an active role in the development of the quality mechanism early on; it should not be left as a supplementary activity post negotiation. At preparation of every quality management can contribute to strategic evaluation on performance of Infrastructure projects in Kisumu City County, Kenya. Proper Project risk identification can result to high procurement in Kisumu City County, Kenya.

Project Risk Response Planning

This researcher recommends that project risk response planning had a strong relationship with performance of Infrastructure projects in Kisumu City County, Kenya. When relationship are not properly managed, they may cause strategic delays, undermine team spirit, increase delay costs, and, above all, damage business relationships. With the increase in the number of participants in a strategic management, it is obvious that more business interactions and arguments end up with an increase in the number of strategic relationship disputes. Research in preventing and resolving relationship disputes supports the effort for better understanding and harmonization of the different cultures. Therefore, this study recommends to the management of Kisumu City County in Kenya to enhance and upgrade on the implementation of all applicable alternative disputes resolution mechanisms so to protect relationship with its stakeholders in the supply chain practices.

Areas for Further Studies

This research focused on project risk identification, and project risk response planning and performance of Infrastructure projects in Kisumu City County, Kenya. The study therefore recommends a further study to be conducted to other counties in Kenya. Then get their findings and compare with this and agree or disagree. The study also recommends replication of the study in other sectors such as manufacturing sector and public sector to allow comparison of research findings. Future researchers an investigate the factors affecting supply chain best practices broadly in all areas of concern in this profession on performance of Infrastructure projects the supply chain practices.

REFERENCES

Ahmadi, A., & Golabchi, M. (2013). Complexity theory in construction project time management. International Research Journal of Applied and Basic Sciences, 6(5), 538-542.

Braimah, N. (2013). Construction Delay Analysis Techniques—A Review of Application Issues and Improvement Needs. Buildings, 3(3), 506-531.

Choge, J., & Muturi, W. (2014). Factors affecting adherence to cost estimates: A survey of construction projects of Kenya National Highways Authority. International Journal of Social Sciences and Entrepreneurship, 1(11), 689- 705.

Cox, T. (1993). Stress research and stress management: Putting theory to work (Vol. 61). Sudbury: HSE Books.

Dadzie, J., Abdul-Aziz, A., & Kwame, A. (2012). Performance of consultants on government projects in ghana: Client and riskor pespective. International Journal of Business and Social Research, 2(6), 256-267.

Dalcher, D. (2012). Project management for the creation of organizational value. Project Management Journal, 43(3), 79-79.

Fugar, F. D., & Agyakwah-Baah, A. B. (2010). Delays in building construction projects in Ghana. Australasian Journal of Construction Economics and Building, 10(1/2), 128.

Galvin, T., Gibbs, M., Sullivan, J., & Williams, C. (2014). Leadership competencies of project managers: An empirical study of emotional, intellectual, and managerial dimensions. Journal of Economic Development, Management, IT, Finance, and Marketing, 6(1), 35.

Gaturu, N., & Muturi, W. (2014). Factors affecting the timeliness of completion of donor-funded projects in Kenya: a case of world agro forestry centre (ICRAF). European Journal of Business Management, 2(1), 189-202.

Gupta, M. C., & Boyd, L. H. (2008). Theory of constraints: a theory for operations management. International Journal of Operations & Production Management, 28(10), 991-1012.

Hamid, S. A. R. Ghafoor, H. A., & Shah, T. Z. (2012). Work Environment and its Impact on Triple Constraint of Project risk identification. Information Management and Business Review, 4(10), 545.

Imenda, S. (2014). Is There a Conceptual Difference between Theoretical and Conceptual Frameworks? Journal of Social Sciences, 38(2), 185-195.

Kamau, G., & Muturi, M. Factors Affecting Successful Completion of Constituency Development Funded Projects in Kenya: A Case Of Nyandarua County. 53 International Journal of Economics, Commerce and Management, 3(5), 499- 516.

Kamotho, J. M. (2014). Factors Influencing Project Completion in the Housing Construction Industry, Nairobi County. (MA Thesis), University of Nairobi. KCG. (2015). Lugari Infrastructure Project Report.: Kakamega County Government.

Kikwasi, G. (2012). Causes and effects of delays and disruptions in construction projects in Tanzania. Australasian Journal of Construction Economics and Building-Conference Series, 1(2), 52-59.

Kimani, A. Z., & Michael, K. (2015). Factors influencing project delays in Kenya. A case study of national Housing Corporation. International Journal of Social Sciences Management and Entrepreneurship, 2(1), 1-14.

Kohli, A. S., & Gupta, M. (2010). Improving operations strategy: Application of TOC principles in a small business. Journal of Business & Economics Research, 8(4), 37.

Kothari, C. R. (2011). Research Methodology: Methods and Techniques (2nd ed.). New Delhi: New Age International.

Lau, E., & Kong, J. (2006). Identification of constraints in construction projects to improve performance. Paper presented at the Proceedings of the Joint Conference on Construction, Culture, Innovation and Management, Dubai, November

Megha, D., & Rajiv, B. (2013). A methodology for ranking of causes of delay for residential construction projects in Indian context. International Journal of Emerging Technology and Advanced Engineering, 3(3), 396-404.

Miterev, M., & Nedelcu, R. (2013). The Relationship between Project Complexity and Delay: Case Study of ERP Implementation Projects in Russia. Paper presented at the 22nd International Conference for Management of Technology, Porto Alegre, Brazil, 14-18 April.

Motaleb, O., & Kishk, M. (2010). An investigation into causes and effects of construction delays in UAE. Paper presented at the Annual Conference of the Association of Researchers in Construction Management Leeds.

Mugenda, O. M., & Mugenda, A. G. (2003). Research Methods: Quantitative and Qualitative Approaches. Nairobi: ACT Press. 55

Musa, M. M., Amirudin, R. B., Sofield, T., & Musa, M. A. (2015). Influence of external environmental factors on the success of public housing projects in developing countries. Construction Economics and Building, 15(4), 30-44.

Mydin, M. O., Sani, N. M., Salim, N. A., & Alias, N. M. (2014). Assessment of Influential Causes of Construction Project Delay in Malaysian Private Housing from Developer's Viewpoint. Paper presented at the E3S Web of Conferences.

Nwachukwu, C., & Emoh, F. (2011). Building construction Project risk identification success as a critical issue in real estate development and investment. American Journal of Social and Management Sciences, 2(1), 56-75.