RISK GOVERNANCE AND PERFORMANCE OF CONSTRUCTION PROJECTS IN MAKUENI COUNTY, KENYA

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DECLARATION

I declare that this research project is my original work and has not been submitted for the award of a degree in any other university.

Signature …….. Date ……

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The work in this research project has been carried out by the candidate under my supervision.

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OPERATIONAL DEFINITION OF TERMS

Budget control risk: Risks most likely to arise in planning of the project, estimation of the costs, and the scheduling of the project activities.

Litigation risk: Risks attributed to legal and regulatory procedures involved in undertaking a project.

Project performance: The extent that a project is undertaken within its planned timeline and budgeted costs, together with its satisfaction of the beneficiaries' expectations.

Resource risk: Risks associated with the acquisition and use of project resources including finances, materials, and human resources and equipment.

Risk governance: It is the implementation of appropriate measures to manage and minimizes the potential risks in a given project that are likely to affect the project performance.

Risk: Circumstances and events that cause a deviation in the achievement of the project goals from the set targets especially cost, time and quality targets.

ABBREVIATIONS AND ACRONYMS

IT:	Information Technology
NCA:	National Construction Authority
NGT:	Nominal Group Technique
SPSS:	Statistical Package for Social Sciences

ABSTRACT

With devolved government system in Kenya, there has been a rapid increment in public construction projects. Nevertheless, performance of these projects is questionable in most counties. In Makueni County, several construction projects have had their performance compromised as evidenced by their delayed completion. The inherent risk involved in the projects is among the major reasons that lead to projects performing poorly. However, none of the existing studies have assessed how risk governance influence project performance in construction projects in Makueni County. This has resulted to lack of adequate empirical insights to guide in developing strategies for enhancing performance of construction projects in Makueni County as far as risk governance is concerned. Therefore, this study investigated the interplay between risk governance and performance of construction projects in Makueni county, Kenya. Specifically, the study sought to investigate the effect of management of resource risk; budget control risk; and litigation risk on performance of construction projects in Makueni County. The research applied the descriptive research design whereby 24 projects in construction industry in Makueni County completed in year 2018/2019 were studied. The project manager, project supervisor and contractor handling each of the projects constituted the respondents. A census approach was used and thus a total of 72 respondents were targeted. To collect data, a semi-structured questionnaire was administered. Data analysis was based on descriptive and inferential statistics, and the findings tabulated and expressed in bar graphs as well as pie charts. The findings indicate that majority of the respondents agreed with the statement used to assess resource risk management in construction projects in Makueni County. However, they disagreed that financial resources were readily available and adequate for the project activities. Most of them also agreed with the statements used to assess budget control risk management and litigation risk management. It was found that resource risk management, budget control risk management and litigation risk management have a positive influence on the performance of construction projects in Makueni County. The study concluded that performance of construction projects in Makueni County is significantly affected by budget control risk management while resource risk management and litigation risk management positively affect the projects' performance but to an insignificant extent. The study recommends that among other measures, the county government of Makueni should ensure they set aside adequate financial resources for the various construction projects to be implemented.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

A project according to British Standard (BS 6079:2000) as cited in Kariuki (2018) refers to a distinct set of activities, planned and coordinated systematically with a definite beginning and ending point, which an organization or individual undertakes to accomplish certain goals and objectives within defined constraints. Projects are paramount in the pursuit for economic growth and development among nations. Kariuki (2018) underscores that increasing high number of projects has become a conspicuous trend in both developing and developed countries worldwide, with governments largely using them in their efforts to accomplish diverse strategic development goals.

Moreover, various global bodies most of which are based in developed countries like the U.S. promoting development projects across the world including the World Bank, UNDP, USAID among others is also an indication of the importance of projects in the global arena. According to Adams (2017), the volume of investment of these institutions in projects especially in developing countries has sharply increased over the past decade. Even so, project management differs across different countries. Consequently, the high investment in projects all over the countries in the world is not commensurate with how they perform. Nevertheless, projects are still considered paramount in the pursuit for development in every nation within the continent. As Silvius and Schipper (2019) affirm, projects have become very instrumental in achieving sustainable development in the society.

In Kenya, various national development plans (such as Vision 2030) often have different projects attached to them as part of the strategies set to accomplish the envisaged goals in the development plans. Currently, development projects geared towards socio-economic development in the country are being implemented at the two levels of government – the national government and the county governments, established with the promulgation of the current constitution (Tong', Otieno & Osoro, 2019).

Construction projects in particular have a fundamental economic importance, particularly through the development of new infrastructure and buildings (Mariusz, Adnan & Isaiah, 2019). The importance attached to constuction projects in Kenya particularly in the public sector is reflected in the great investments towards construction projects by the county and national government geared towards enhancing socio-economic standards of the citizenry (Ong'ondo, Gwaya & Masu, 2019). Though implemented by both the national government and county government, all the construction projects are regulated by the National Construction Authority (NCA) which was etablished under the National Construction Authority Act No. 41 of 2011 (National Council for Law Reporting, 2011).

Given the important role of projects in achievement of sustainable socio-economic development, project performance has attracted the attention of diverse stakeholders including academicians. Mucheke and Paul (2019) underscore that performance of projects especially in the public sector is key to the achievement of national economic growth. However, according to Naeem, Khanzada, Mubashir and Sohail (2018), no project is guaranteed to succeed no matter how good its planning. This is particularly because unanticipated problems may arise in the course of even simple project activities and negatively affect the project performance. This calls for the application of proper risk

governance across the different project stages from its planning to completion for good project performance to be achieved.

Unfortunately, notwithstanding the importance of projects and the emphasis on it, poor project performance has been a major problem in projects in different sectors, industries and countries at large (Kariuki, 2018). This necessitates the interrogation of risk governance in projects in the different sectors especially in the construction industry. As Gyamfi, Zievie and Boateng (2016) highlights, construction industry is among the industries where projects are characterized by major risks related the activities involved in it. The risks probably emanate from the diversity of events and stakeholders involved construction projects including regulators, shareholders, clients, contractors among others (Omeno & Sang, 2018). Risk governance in these projects is therefore vital as far as the performance of these projects is concerned. The fundamental question therefore is, what is the status of risk governance in the construction projects and what is the impact on the project performace? This constituted the gist of the investigation in this study where the focus was on the construction projects in Makueni, Kenya.

1.1.1 Project Performance

Project performance according to Kensek and Noble (2014) as cited in Tong', Otieno and Osoro (2019) is the extent of value of a project to its beneficiaries together with the degree of effectiveness and efficiency in its implementation and its overall sustainability. It can also be simply defined as the degree to which a project has satisfied expectations on its cost, time and functionality (Jolly, Isa, Othman & Ahmdon, 2016). From these definitions, the conceptualization of project performance can therefore be expressed as the extent that

a project is undertaken within the set time for its implementation and its budgeted costs, together with the ability of its output to satisfy the beneficiaries' expectations.

Projects' performance greatly differs across countries worldwide. According to Klakegg et al. (2015), developed countries like U.K., U.S.A and Australia experience relatively good project performance. This is primarily because they are effective and efficient in public project management (PPM). On the other hand, public project management is not efficient and effective in most developing countries especially in Africa region hence poor project performance. This according to Ika (2012) is one of the major reasons that have caused underdevelopment in most African countries.

In Kenya, project performance is also quite wanting. Scholars like Wawira and Were (2017) have revealed that most of the projects not only face cost, time and scope limitations which hinder their efficient completion, but the poor quality of their outcome even after completion makes them have no or insignificant positive impact on the communities. According to Omeno and Sang (2018), performance of many projects in Kenya is undermined in diverse ways including budget overruns, delayed completion and over-dependence on foreign aid.

It is possible to measure project performance using different indicators or performance metrics. According to Alqahtani et al. (2015), the project performance indicators vary across different projects due to differences in complexity and size of projects. Koech et al. (2016) highlights some of the factors that may be used in setting performance indicators including: budget and time constraints, stakeholders' perception on the project value, return on investment for the project among others. This is evident in the different project performance indicators in different researches. For instance, Gitahi and Tumuti (2019) in

their study measured project performance using three indicators including client satisfaction, construction cost and construction time. Tong', Otieno and Osoro (2019) used three indicators including quality, cost and time to measure project performance. Musyoki and Ngugi (2019) measured project performance using three indicators budget cost, timeline and quality specifications

It is therefore apparent as Lop, Ismail, Isa and Khalil (2018) affirm, cost, time and quality of the deliverables are the most appropriate indicators to measure project performance. In this regard, project performance in this research shall be assessed using these three indicators: cost, time, and quality of the project outcome which have been used in other studies including Musyoki and Ngugi (2019), Tong', Otieno and Osoro (2019) and Lop, Ismail, Isa and Khalil (2018).

1.1.2 Risk Governance in Construction Projects

Risk refers to events or conditions whose occurence may affect the project objectives negatively or positively (Naeem et al., 2018). This means that risks are constituted by anything that may trigger deviation of the project performance from the expectation. According to Gyamfi, Zievie and Boateng (2016), poor management of inherent risks involved in a project is among major causes why projects underperform. To this end, risk governance is thus critical in project management. Gyamfi, Zievie and Boateng (2016) define risk governance as a process formally seeking to identify, assess and take measures to reduce the risks, the primary goal being to maximize opportuinities and minimize the negative probable effect of the risk on the project performance.

A study carried out by Masar et al. (2019) in Europe, Asia, Africa and America revealed that risk governance in projects differed across different countries globally. They found that developed countries invested a lot in risk governance in projects including use of complex project risk governance methodologies and softwares. In contrast, in less developed countries, investment in risk governance in projects was relatively low. Scholars like Giraldi, Junior and Moutinho (2018) who did their study in Brazil have indicated that project performance varies with variation in intensity of risk governance in projects. This may therefore explain the difference in project performance between the developed countries and less developed countries.

In Kenya, scholars like Nyarangi, Ogolla and Kitheka (2021) have also revealed that risk goverenance in most projects in the country is quite wanting. This may greatly undermine the realization of the project objectives and consequently the achievement of the development goals targeted by the projects. It is therefore critical to interrogate risk goverenance in the different project categories and investigate how it is influencing project performance in order to gain insights on how the same can be streamlined.

Project risks especially in construction industry are all over the entire project cycle and their occurence may be in two or more phases. According to Tipili and Ibrahim (2015), these risks include but not limited to: inadequacy in finance, equipment and labour hindering the completion of the project; delays in fund disburement by the client; tight project schedules that may not allow sufficient time to for the entire design and construction activities; abnormally long schedules that may undermine the project cost benefit; excessive change or modification in design; compliance to regulatory, material and procedure specification, cost estimation accuracy in budgeting among others.

Gyamfi, Zievie and Boateng (2016) explains that project risk governance covers various categories including: resource risk management, budget control risk management, and litigation risk management among others. Resource risk management entails the assessment and response to risks associated with the acquisition and use of resources including cash flows, materials, and working capital. Resource risk management in this study was assessed in terms of effectiveness/ineffectiveness in the management of financial risks, material risks, capital equipment risks, and human resource risks in the construction projects.

Budget control risks management involves the management of risks mostly associated with planning of the project, estimation of the costs, and the scheduling of the different project activities. Budget control risk management was assessed in terms of effectiveness/ineffectiveness in the management of cost estimation accuracy, budget overruns, project schedule risks, changes in design risks.

Litigation risk management involves the mechanisms set to prevent and address disputes associated with legal and regulatory procedures and process to minimize their impact in the project. Litigation risk management was assessed in terms of effectiveness/ineffectiveness in the management legal compliance risks associated with rules and regulations on procurement, construction, and environmental impact.

This research focused on assessing resource risk management, budget control risk management, and litigation risk management and their influence on performance of construction projects in Makueni County.

1.1.3 Construction Projects in Makueni County

In the year 2018/2019, a total of 24 construction projects were completed in Makueni County (see Appendix III). Nevertheless, 9 construction projects were delayed in the same year while 2 new construction projects were initiated (Government of Makueni County, 2020). Studies conducted in Makueni county like Maunda and Moronge (2016) have indicated that poor project performance is common in several public sector costruction projects with many of them facing time completion problems. This indicates that Makueni county government has invested largely in construction projects, but the performance of a number of them is quite wanting.

A review of the data in Makueni County Project Management System indicates that between 2014 and 2019, 9 construction projects were among 32 delayed projects in the county (Government of Makueni County, 2020). This supports the findings by Gitahi and Tumuti (2019) who indicated that despite the fundamental role of construction projects in the country and the great investments in them, most of them have been performing poorly with many of them been characterized by delays in completion. Given that risk governance is a major factor that determines project performance (Gyamfi, Zievie & Boateng, 2016), this research sought to interrogate risk governance in construction projects in Makueni County and assess its effect on the projects' performance.

1.2 Statement of the Problem

With the devolved government system, there has been a rapid increment in investments in construction projects in Kenya over the recent past (Mukoche, Wanjala & Simiyu, 2018). In Makueni County, despite the commendable investment in development projects by the

county government, several construction projects have had their performance compromised as evidenced by their delayed completion. For instance, between 2014 and 2019, 9 construction projects were among 32 delayed projects in the county (Government of Makueni County, 2020). Each of these projects has distinct development centred objectives which means that their delay hampers the achievement of the overall development goal. Given that poor project performance is often caused by among other factors, the inherent risks involved (Gyamfi, Zievie & Boateng, 2016), risk governance in construction projects in the county should therefore be interrogated. However, scholars in project management have seldom assessed how risk governance influences construction projects' performance hence a dearth of empirical studies on the same.

Some international studies like Mariusz, Adnan and Isaiah (2019) and Naeem et al. (2018) in UK and Pakistan have assessed risk governance as a moderating variable influencing the relationship between project planning and project performance, and not as an independent variable that affects project performance. Local studies like Gitahi and Tumuti (2019) have analyzed risk management and projects' performance in construction industry in other counties hence cannot be generalized to Makueni County due to variations in project risks and their management from one context to another. Others like Omeno and Sang (2018), Maendo, James and Kamau (2018), Mwadime and Rosemary (2019) and Muute and James (2019) have focused on construction projects' performance but did not interrogate how it is the influenced by risk governance.

A review of the existing literature thus indicates lack of adequate empirical insight to explain the relationship between risk governance and construction projects' performance particularly in Makueni County. As such, it remains unclear how risk governance has

influenced construction projects' performance in the county and what priority areas should be addressed if risk governance in the projects is to be streamlined in the county. Therefore, this study sought to provide empirical insight on the influence of risk governance on construction projects' performance as well as identify the priority areas that should be addressed to streamline risk governce in these projects specifically in Makueni County.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective was to assess how risk governance influences performance of construction projects in Makueni County, Kenya.

1.3.2 Specific Objectives

i. To investigate the influence of resource risk management on performance of construction projects in Makueni County, Kenya
ii. To assess the influence of budget control risk management on performance of construction projects in Makueni County, Kenya
iii. To investigate the influence of litigation risk management on performance of construction projects in Makueni County, Kenya

1.4 Research Questions

Research questions to be addressed are:

i. How does resource risk management influence performance of construction projects in Makueni County, Kenya?

ii. How does budget control risk management influence performance of construction projects in Makueni County, Kenya?

iii. How does litigation risk management influence performance of construction projects in Makueni County, Kenya?

1.5 Scope of the Study

Geographically, the research primarily was in Makueni County covering a total of 24 construction projects completed in the year 2018/2019. The core of the investigation was an assessment on the influence of risk governance on project performance. The study interrogated risk governance in the construction projects in the county. In particular, three aspects of risk governance were investigated including: resource risk management, budget control risk management, and litigation risk management. The influence of each of the three aspects of risk governance on project performance was assessed, as well as their influence jointly on project performance.

1.6 Significance of the Study

This research is vital to different stakeholders. It yields insights on project risk governance and what needs to be done as far as it is concerned in order to enhance project performance. This is useful to not only the project managers in construction industry in the county, but the whole country at large. The projects management board in Makueni County government can particularly gain useful insights on the areas that need urgent attention in terms of risk governance in the construction industry projects, for improved project performance to be accomplished.

The national government as a major finance provider to the county governments, together with donors who may also have an interest in sponsoring construction projects in Makueni County can also benefit from the study findings. This is because the findings provide empirical insights on project performance in the County and also provide recommendations on the measures that may be necessary to undertake pertaining to risk governance in the County projects. These insights may be quite informative in their decision making towards financing construction projects in the area.

The findings are also useful to the academia. This is because the findings add onto the existing empirical knowledge on the influence of risk governance on project performance. In this regard, researchers seeking to further studies in the field of project management may use the study as a reference.

1.7 Limitations of the Study

Findings were largely based on the respondents' views as per the data they provided. In this case, there was a possibility of some respondents withholding or manipulating some of the required information for fear of victimization. This may increase the margin of error in the findings. However, the researcher minimized it by giving respondents assurance that the investigation would be purely academic and thus encourage them not to be afraid of giving honest responses or fear any victimization, as well as assure them of their anonymity in the research.

Since participation in a research is voluntary, the study was based on the volume of data collected from the participants who consented to duly fill and return the questionnaire. Therefore, due to the number of respondents targeted but failed to participate, this may also

contribute to some margin of error in the findings. However, to minimize this, the researcher through constant and persistent follow up ensured that sufficient response rate for analysis and generalization was obtained in line with the recommended rates.

1.8 Organization of the Study

Chapter one contains introduction which explains study background, problem statement and outlines the study objectives as well as the research questions. It also explains the scope of the study, its significance and limitations as well. Chapter two presents a review of the literature which entails review of theories and empirical studies based on objectives. The third chapter elaborates the procedure and techniques applied in undertaking the research in terms of research design, data collection methods and analysis among other research methodology aspects. Chapter four contains the findings obtained after the data analysis. The findings are presented, interpreted and discussed in it. Chapter five is the last chapter and it contains a summary of the study findings, conclusions made and the suggested recommendations. Suggestions on areas for further research are also outlined in the chapter.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature review section looks at the theoretical framework that anchors the study, and the relevant empirical studies with respect to the objective of this study. Research gaps that need to be addressed are also be highlighted.

2.2 Theoretical Review

Two main theories were applied: resource dependency theory and the theory of constraints.

2.2.1 Resource Dependency Theory

Pfeffer and Salancik (1978) are the proponents of the resource dependency theory. The theory asserts that in any organization, resources are fundamental to the firm's survival in the long run. It further states that organizations can only get the resources within their respective environments, and this is threatened by the existence of other organizations competing for the very resources within same environment (Zehir, Findikli & Celtekligil, 2018). In this regard, based on the theory, the construction projects in Makueni County are considered as the organization within its respective environment of the county government of Makueni.

The resource dependency theory affirms uncertainty of resources as one of the major problems confronting organizations. According to the theory, this revolves around three aspects: resource concentration, availability of the resources, and interconnectedness of the resources (Zehir, Findikli & Celtekligil, 2018). This is largely due to the fact that the same

pool of resources has many organizations depending on it. This means that the resources are limited and therefore risk governance for the same is vital for success.

The theory is relevant in this study in helping to understand the nature of the resource risk facing projects and hence provide insights to interrogate risk management in construction projects and how it influences the performance of the projects. Based on the theory, resource risk in the construction projects in Makueni County are likely to emanate from the fact that the projects have to depend on resources that other categories of projects within the County are also depending on. That is, the resources availed by the county government of Makueni. The resource dependency theory was therefore applied to help in assessing the resource risk management and its influence on construction projects' performance which was the first study objective.

2.2.2 Theory of Constraints

Goldratt and Cox (1984) proposed the theory of constraints. The theory defines a constraint as anything that hinders the accomplishment of what a project or process seeks to accomplish. It asserts that there external and internal constraints affecting the achievement of goals and objectives in any given project. While internal constraints emanate from within the organization, external constraints emanate from the political, economic, social-cultural, technological and legal factors outside the organization (Mobegi, Sang & James, 2019).

The theory therefore emphasizes that for the performance of a project to be optimized within the distinct constraints identified and their effect (Omeno & Sang, 2018). To this end, the theory proposes five steps to achieve desired performance within the constraints.

These are: identifying the constraints, developing measures to exploit the constraints identified, prioritizing the measures developed to exploit the constraints, implementing the measures to obtain maximum productivity from the constraint, and monitoring and evaluating the management of the constraint for continuous improvements (Gitahi & Tumuti, 2019).

The theory was relevant in this study because it provided insights to help in assessing risk governance in projects. In particular, the theory was largely applied to assess budget control risk management and its influence on project performance. The theory was also used to assess litigation risk management and its influence on the construction projects' performance.

2.3 Empirical Literature Review

2.3.1 Resource Risk Management and Project Performance

In their study, Jayasudha, Vidivelli and Surjith (2014) investigated the assessment and management of resource risks in construction projects in India. The study used descriptive survey method where a questionnaire was administered to project construction contractors and managers. The findings revealed that resource risk assessment and management had a significant effect on project performance. Shortage of skillful human resource was identified as a major risk whose management highly influenced project performance. Financial resources risk management was also identified as critical to project performance and this was attributed to regular increment in inflation rates, resulting to increase in prices for construction materials especially steel and cement. However, the researchers only used descriptive statistics and did not use regression analysis to assess how resource risk

management influenced project performance. In contrast, descriptive statistics as well as regression analysis were applied in this research for a more comprehensive analysis.

Irfandhi (2016) in their investigation on management of risks in IT projects identified resource risk management as major factor that negatively affected project performance. Using an empirical survey approach that was based on literature review of empirical studies, the findings indicated that resource risks were largely caused by: unavailability and delay in equipment and supplies delivery and inadequacy of the equipment and facilities. Since projects differ in their uniqueness and consequently the risks involved based on their industry and geographical context, the results may not apply to construction projects in Makueni County. This is particularly because the findings are based on IT projects context which differs from construction projects context.

Gyamfi, Zievie and Boateng (2016) in their study on risk management in construction firms in Ghana identified resource risk management as a major aspect that affected project performance. Using a quantitative research approach, the study indicated that unaivability of materials and improper inventory management constituted the largest part of resource risks that affected performance. To manage the resource risks, the findings revealed that the firms instituted measures like direct materials importation, and inventory monitoring. However, the data collected was analysed using frequencies and percentages only which is too shallow to derive detailed and insightful conclusions. As such, the findings are inadequate in comprehensively explaining how resource risk management influence project performance.

In their study on operational risk categorization in projects, Camilo et al. (2019) indicated that resource risk management especially due to resources interactions was vital to

minimize the negative impacts on objectives of project portfolio. However, the study was based on systematic literature review hence its findings cannot be applied to specific project categories. Moreover, despite acknowledging resource risk management as fundamental to the achievement of project objectives, the study did not investigate in deatils how resource risk management affects project performance.

A study by Rahman and Adnan (2020) on risk management in two construction projects in Finland identified resource risk management as critical in project management. The study largely applied the qualitative methodology approach which cannot objectively estimate the effect of resource risk management on project performance. Moreover, the was based on two projects only making the findings unreliable to extrapolate to other projects worldwide. The study also largely concentrated on assessing risk management but did not comprehensively investigate the projects' performance hence insufficient insight on the influence of resource risk management on project performance.

2.3.2 Budget Control Risk Management and Project Performance

In a study assessing constraints in projects within Nairobi, Rugenyi (2015) found that budget control risk was a major constraint and its management determined project performance. The study was done using a descriptive survey design where purposive sampling was used to cover registered project managers. Major aspects of budget control risks management identified as largely affecting project performance include project schedule risks from changes in climatic conditions and strategies. The study was however too general in scope since it was not confined to any specific category of projects. As such, the findings cannot be reliably generalized to a specific category of projects like construction projects.

Rehacek and Bazsova (2018) investigated budget control risk management and indicated that budget control risk management influenced performance of construction projects. They found that budget control risks in terms of cost overruns and scheduling risks were common in many of the projects. However, the study adopted a desktop survey approach that was exclusively based on secondary data review. Therefore, the findings do not reflect the situation in construction projects in any specific context and therefore cannot be reliably applied to any specific context of construction projects. Moreover, the study did not investigate how the risks were related to the projects performance.

Hatefi (2018) investigated risk factors and their management in an oil and gas project in Iran. The study applied a Nominal Group Technique (NGT) based on twelve project experts' opinions. These were used to develop a risk matrix structure where management of budget control risks was found to significantly affect project performance aspects of scope, cost, time and quality. Aspects of budget control risks whose management was found to strongly affect the project performance included: lack of accurate information, overemphasis on design and technical specifications, invalid project assumptions and bad estimations. Although the study was quite thorough and detailed in assessing the risks and their management, it used a case study design while the current study applied the descriptive survey design.

Kwon and Kang (2019) carried out a study that sought to develop a budget estimation approach to minimize project risks based on analysis of residential building projects in South Korea. The study proposed an approach for budget control risk management that analyzes and quantifies uncertainty hence improving budget estimation accuracy and precision. However, although the study comprehensively analyzed budget control risk

management, it did not thoroughly assess how it influenced project performance since the approach developed was only tested on on-going projects as opposed to completed projects. This was because the study largely concentrated on budget estimation and control, with little interest and focus on project performance. The study findings therefore did not adequately explain the influence of budget control risk management on project performance.

Rodriguez-Rivero et al. (2020) studied how risk management influenced success of international development projects in Colombia. The study identified budget delays as major risk undermining project success but it did not investigate in details budget control risk management. As a result, the findings are inconclusive on the effect of budget control risk management on project performance.

2.3.3 Litigation Risk Management and Project Performance

Kishan, Bhatt and Bhavsar (2014) identified legal risk as a major risk affecting project performance in their research. The risks were found to cause schedule delays and cost overruns. This study was however based on literature review methodology where it exclusively reviewed existing literature to derive its conclusions. The results therefore may not be reliably applicable to construction projects in any particular country like Kenya. Moreover, the study did not investigate on how the risks are managed and how this impacts the performance of the projects.

In their research on management of risks in construction industry, Renault and Agumba (2016) found that litigation risk management was a major factor that influenced projects performance. The researchers used the literature review approach. However, although the

study investigated risk management and its impact on project performance, it also applied the literature review methodology alone with no specific focus on projects in any context. Based on the methodology used therefore, the findings cannot sufficiently and accurately describe the present situation in the construction projects. Therefore, the present study factors both literature review and primary data for more comprehensive findings.

Ouma (2016) investigated the influence of regulatory risk management on project performance focusing on distribution projects by Kenya Power. The study applied descriptive survey design and was based on both qualitative and quantitative methodologies. The findings indicated that regulatory risk management had a positive and significant influence on project performance. However, since the study focused on distribution projects the findings may not necessarily be the same in the case of construction projects since the regulatory/legal framework that governs the two categories of the projects may be different. Moreover, the level of compliance and management of the risks in the projects by Kenya Power may not be the same as in the projects by the County government of Makueni.

Elijah (2017) assessed the influence of management of risks on construction projects' performance in Nakuru, Nairobi and Machakos counties in Kenya. Using the explanatory research design, findings revealed that management of litigation risks did not significantly affect project's performance. Elijah (2017) used arbitration, contract wording, and provisions for dispute resolution as the indicators for litigation risk management. However, Elijah (2017) did not consider the indicators that were used in this research including: compliance to construction regulations, compliance to procurement regulations,

compliance to environmental regulations, and frequency of legal compliance related disputes.

In their study covering construction projects in Nairobi City County, Mwangi and Ngugi (2018) investigated the effect of legal risk management on the projects' performance. This was based on descriptive and inferential statistical analysis of data from 190 respondents selected from 10 construction projects in the County. The findings indicated that legal risk management had a negative effect on project performance. The findings however may not necessarily reflect the status of the relationship between legal risk management and project performance in Makueni County which is the focus of the current study. This is because risk management may not be the same in the different projects in the two different counties.

2.4 Summary of Literature and Research Gaps

Table 2.1: Summary of literature and research gaps

Study	Study Focus	Methodology	Gap(s)	How the current study addressed the gaps
Jayasudha, Vidivelli and Surjith (2014)	Assessment and management of resource risks in construction projects in India	Descriptive survey method	Researchers only used descriptive statistics hence inconclusive findings.	Applied descriptive statistics and regression analysis for more comprehensive and conclusive findings.
Irfandhi (2016)	Risk management in IT projects	Empirical survey of literature review	Findings were based on IT projects context hence cannot be generalized to construction projects since risk governance differs across projects context.	The study primarily focused on construction projects
Gyamfi, Zievie and Boateng (2016)	Risk management in construction firms in Ghana	Quantitative research approach	The research data was analysed using frequencies and percentages only which is too shallow to derive detailed and	The study applied more detailed analysis including correlation analysis and regression analysis for more insightful conclusion

Study	Study Focus	Methodology	Gap(s)	How the current study addressed the gaps
			insightful conclusions.	
Rugenyi (2015)	Constraints in projects within Nairobi	Descriptive survey design applying purposive sampling	The study scope was too general in scope hence inconvenient to generalize to any specific category of projects.	The study narrowed the scope to construction projects only
Rehacek and Bazsova (2018)	Risk management methods in construction projects	Desktop survey exclusively based on secondary data review	The findings do not reflect the situation in construction projects in any specific context and therefore cannot be reliably applied to construction projects.	The study was more specific by focusing on the construction projects within the context of Makueni County
Hatefi (2018)	Risk factors and their management in an oil and gas project in Iran	Nominal Group Technique based on twelve project experts' opinions	The study it used a case study design which limits the study to the specific project covered hence cannot be generalized.	The current study applied the descriptive survey design to cover more than one project for more comprehensive findings
Kishan and Bhatt (2014)	Risk factors that influence	Exclusive literature	Findings were exclusively based	The current study applied both

Study	Study Focus	Methodology	Gap(s)	How the current study addressed the gaps
	building construction projects	review methodology	on reviewed literature, thus cannot be generalized to construction projects in any particular country.	secondary data and primary data pertaining to the construction projects in Makueni county
Renault and Agumba (2016)	Risk management in construction industry	Literature review approach based on secondary data only	Due to methodology used, the results cannot sufficiently and accurately describe the present situation in the construction projects.	The current study not only used literature review but also used primary data to help describe the present situation in the construction projects in Makueni county
Elijah (2017)	How risk management affects construction projects' performance in Nakuru, Nairobi and Machakos counties in Kenya	Explanatory research design using semi-structured questionnaire for data collection	The study used arbitration, contract wording, and provisions for dispute resolution as the indicators for litigation risk management.	The present study used different indicators altogether to assess litigation risk management including compliance to the relevant regulations and the frequency of compliance related disputes

2.5 Conceptual Framework

A conceptual framework is a diagrammatic presentation of the relationship between the variables investigated in the study. In this study, the investigated relationship is between risk governance and project performance. Risk governance was assessed in terms of: resource risk management, budget control risk management, and litigation risk management. These constitute the independent variables. Project performance was the dependent variable whereby the researcher investigated how it is affected by the risk governance aspects aforementioned. In this regard, the conceptual framework for this relationship is presented in figure 2.1.

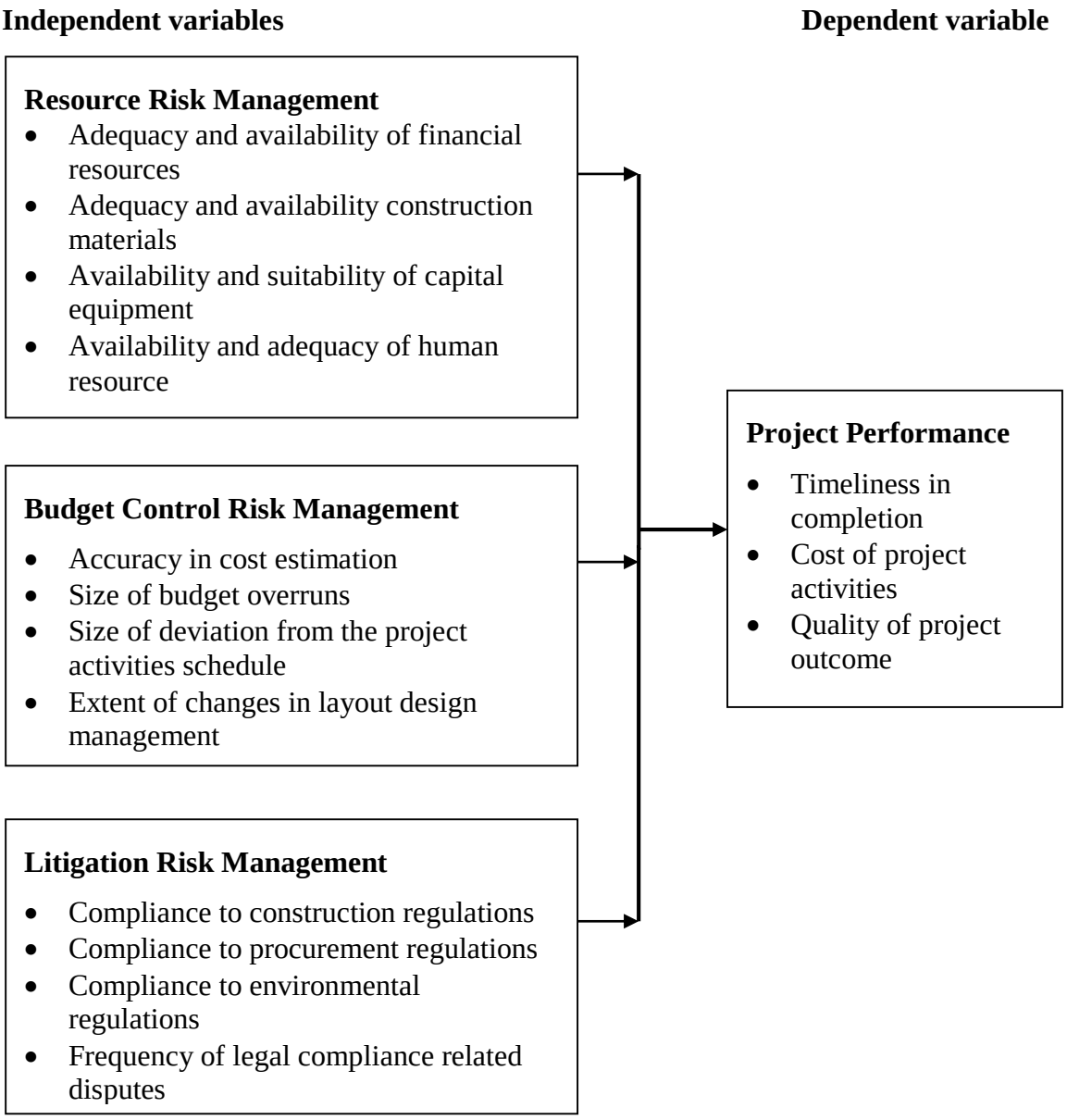

Figure 2.1: Conceptual framework

Source: Author: Author (2020)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Chapter three contains methods and procedure which were applied to undertake this research. In this regard, it explains various aspects pertaining to research methodology. These include but not limited to research design, research population, instrument and procedure for collecting data as well as analyzing it among others.

3.2 Research Design

Undertaking the study was anchored on the descriptive research design. Singh (2014) explains that the design involves determining the frequency of occurrence of something and its relationship with something else, and using the results to describe aspects of a phenomenon. The design was preferred because of its strength which according to Rahi (2017) is its ability to yield results that accurately describe the situation or event investigated due to its emphasis on collecting current data on the situation/event. The design was therefore considered suitable to enable an accurate assessment and description of project risks management and their influence on construction projects' performance in Makueni County.

3.3 Target Population

Asiamah, Mensah and Oteng-Abayie (2017) defined target population as a collection of objects, events or people that constitutes the subjects on which the investigation of the study is conducted. For this research therefore, construction projects completed in the year

2018/2019 in Makueni County constituted the population. Projects completed in this year were preferred because they were the most recent projects to be completed and thus their performance likely to have experienced minimal deviations since their completion. Records from the Government of Makueni County (2020) indicate that a total of 24 construction projects were completed in the year 2018/2019 (see appendix III). The projects were undertaken in different wards in the County as listed in Appendix I. The project manager, project supervisor and contractor handling each of the 24 construction projects constituted the respondents in this study. Therefore, the 24 projects that were covered had a total of 72 respondents (24 X 3) that were targeted.

3.4 Sampling Design

All the 24 construction projects were covered. Since 24 projects are manageable in a study, all of them were covered in this study. This is in line with Oribhabor and Anyanwu (2019) who suggested that when the target population is relatively small, sampling is unnecessary and the census approach is more suitable to use. Therefore, the sample for the study was selected from the entire 24 projects. In this regard, three (3) respondents including the project manager, project supervisor and contractor in charge of each of the 24 construction projects were selected. These were selected because they possess the relevant knowledge on risk governance in the projects and project performance. Therefore, the total sample size for the study was 72 respondents (3 X 24).

3.5 Data Collection Instrument

A questionnaire was preferred because as asserted by Pavan and Kulkarni (2014), it largely saves on time and cost. Therefore, the questionnaire was considered suitable for this study

in the light of the constraints of time and resources in the study. The questionnaire contained likert, open-ended and close-ended questions. This mix was intended to ensure diversity in the data collected for comprehensive insights to be obtained on the aspects under investigation in this study.

3.6 Pilot Study

According to Fraser et al. (2018), pilot study is a research on a small scale preceding a larger and often the main study, primarily aimed at guiding the planning and improvement of the main study. The pilot study in this research was done in four construction projects completed in 2017/2018 in Makueni County. Three (3) respondents were selected from each of the four (4) projects. The respondents included the project manager, project supervisor and contractor who handled each of the 4 projects. In this regard, a total of twelve (12) respondents were involved in the pilot study. There was due diligence to avoid instances where the same project managers, supervisors or contactors handled the 2018/2019 projects. The questionnaire was administered to the 12 respondents for the purpose of pre-testing and improving the validity and reliability of the questionnaire which are discussed in section 3.7.

3.7 Validity and Reliability of the Research Instrument

3.7.1 Validity of the Instrument

Validity is the extent that a research instrument correctly measures the concepts that it was designed to measure, for truthful results to be obtained (Heale & Twycross, 2015). It is achieved using strategies like peer review, member checks, ensuring appropriate representation of the population by randomly selecting respondents or ensuring

heterogeneous groups in the sample, among others (Haradhan, 2017). In this study, the preview of the questionnaire in the pilot study helped to identify and rectify any questions that were not clear or ambiguous to the respondents. In addition, content validity of the questionnaire was achieved by ensuring that the supervisor reviewed it and gave input that was used to improve the questionnaire. Moreover, heterogeneity of the sample was ensured during the main data collection.

3.7.2 Reliability of the Instrument

Reliability means extent that the measurements used in an instrument yields consistent results (Haradhan, 2017). To establish the questionnaire's reliability, this research used Cronbach's alpha measure that helps to indicate the internal consistency. Cronbach's alpha test is preferred because according to Taherdoost (2016), it is considered as the most used approach for testing reliability. According to Tavakol and Dennick (2011), the value of the alpha varies from 0 to 1 where 0 indicates no internal consistency among items on the scale used, while 1 shows absolute internal consistency. The acceptable value of the alpha is 0.7 and above (Haradhan, 2017). The results of the pilot study were used to determine the reliability of the questionnaire as presented in table 3.1.

Table 3.1: Pilot study findings

	Cronbach's Alpha	No. of Items
Project performance	0.815	5
Resource risk management	0.732	5
Budget control risk management	0.795	4
Litigation risk management	0.714	4

Source: Research data (2021)

The Cronbach's alpha for the questions used to assess the dependent variable (project performance) was 0.815. On the other hand, the alpha values for the independent variables including resource risk management, budget control risk management and litigation risk management were 0.732, 0.795 and 0.714 respectively. The pilot study results indicate that the questionnaire had acceptable reliability since the Cronbach's alpha for each of the variables was greater than 0.7.

3.8 Data Collection Procedure

A letter of approval to conduct the research was first obtained from Kenyatta University as well as research license from the National Commission for Science, Technology and Innovation (NACOSTI). Makueni County government offices were then contacted to notify the administration of the intent to carry out the study and seek their permit. Then, with the help of the procurement department in the county, a list of the project management team that undertook the construction projects completed in the year 2018/2019 was obtained, which included their physical addresses and contacts. Then, with the help of a trained research assistant, the respondents were contacted and briefed about the study and its purpose and upon their consent, a date was agreed when they were available for the questionnaire to be physically administered to them at their offices. However, those who insisted to be engaged via email had the questionnaire sent to their respective email for them to complete and send it back within the agreed date. Persistent follow-up was done to ensure the respondents fill and send back the questionnaires administered to them.

3.9 Data Analysis

The filled questionnaires that were collected were sorted out first to check and identify those duly filled for analysis. Data coding was then done where the responses in the questionnaires were coded in readiness for data entry. Data entry was done in SPSS v.25. Once the data was entered, descriptive and inferential statistics were computed. The former entailed frequency, percentage, mean and standard deviation to assess and explain the distribution of the responses for various items in the questionnaire. Then, inferential statistics were used to analyze the data in line with the objectives of the study. In this case, correlation analysis and regression analysis were computed. Inferential statistics of correlation and regression analysis were chosen because according to Higgins (2005), they are very suitable for determining whether one variable influences another and also to quantitatively estimate the influence exerted.

For regression analysis, multiple linear regression analysis was computed. However, before carrying out the multiple linear regression analysis, diagnostic tests were carried out to justify the appropriateness of a multiple linear regression model to analyze the data. The diagnostic tests included tests for normality, heteroscedasticity and multicollinearity. After justifying the appropriateness of multiple linear regression model to analyze the data, the regression model was computed and expressed in the form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Y is the dependent variable – project performance

X_1, X_2, and X_3 are the independent variables – resource risk management, budget control risk management, and litigation risk management respectively

β_1, β_2, and β_3 are the regression coefficients – coefficients for resource risk management, budget control risk management, and litigation risk management respectively

β_0 is the regression constant

e is the error term

The findings presentation was in tabulated form, graphical form and charts and interpreted in accordance to the research objectives. Qualitative data was analyzed through content analysis. In this regard, the responses for the open ended questions for each of the variables were compiled and scrutinized to identify the common themes. These themes were presented discussed in narrative form.

3.10 Ethical Consideration

To ensure various research ethics are observed, several measures were undertaken. First, when the data collection exercise commenced, the respondents strictly observed the informed consent aspect of research ethics. In this regard, respondents were only engaged if they gave their consent upon their full understanding of the study purpose which was clearly explained to them. Confidentiality and anonymity of the participants was also ensured. To ensure confidentiality and anonymity, third parties were denied access to any personal data relating to the respondents including their names and contacts. Moreover, access to the data collected from the respondents was restricted and it was only analyzed without leaking it to third parties, and results objectively communicated in the research report for this study.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

After analyzing quantitative data in SPSS, the results were documented in this chapter together with the qualitative findings. It sets off by highlighting the questionnaires' response rate and the background information of the participants. Then, findings on the basis of the research objectives are presented; first, findings from descriptive statistics and qualitative analysis, then the findings from inferential statistics.

4.2 Response Rate

The response rate was determined based on the duly filled questionnaires that were considered as valid responses. Table 4.1 presents the response rate.

Table 4.1: Questionnaires return rate

Questionnaires	Frequency	Percent
Responses	38	52.8
No response	34	47.2
Total	72	100

Source: Research data (2021)

Although the researcher targeted 72 respondents consisting of project managers, project supervisors and contractors, 34 of them failed to return the questionnaires. As a result, the study covered 38 out of the 72 which is a response rate of 52.8%. Although there is no consensus among scholars on the precise acceptable response rate, a scrutiny by Sataloff and Vontela (2021) indicated that the minimum acceptable response rate recommended in different fields ranges from 40% to 75%. In this regard therefore, the response rate for this

study (52.8%) is adequate for analysis and reporting since it is percentage is within the acceptable range.

4.3 Background Information

4.3.1 Distribution of Respondents by Gender and Position Held

The position held by the respondents in their respective projects was analyzed. This was cross-tabulated with their gender to understand the gender distribution in the different project management positions. The results were as presented in table 4.2.

Table 4.2: Cross-tabulation of respondents' gender with their position

	Male		**Female**		**Total**	
	N	%	N	%	N	%
Project manager	5	55.6	4	44.4	9	23.7
Project supervisor	9	100.0	0	-	9	23.7
Contractor	7	35.0	13	65.0	20	52.6
Overall	21	55.3	17	44.7	38	100

Source: Research data (2021)

Overall, project contractors constituted majority of the respondents at 52.6% while the number of project supervisors and project managers was equal at 23.7%. This implies that the data collected had a rich diversity of opinions from the diverse project management team members. In terms of gender, most of them were male (55.3%) compared to female (44.7%). This means that in the construction projects by Makueni County government, the project management teams often have more men than women. In particular, men dominated as project supervisors (100%) while on the other hand, women dominated among project contractors at 65%. However, among the project managers, the proportion of men (5) to

women (4) had a negligible variation. The findings imply that Makueni County government is gender sensitive while awarding construction project tenders.

4.3.2 Distribution of Respondents by Age

The researcher was interested in the respondents' age bracket in order to understand whether age distribution in the project management teams is considered by the county government is awarding the project tenders. The age distribution was as illustrated in figure 4.1.

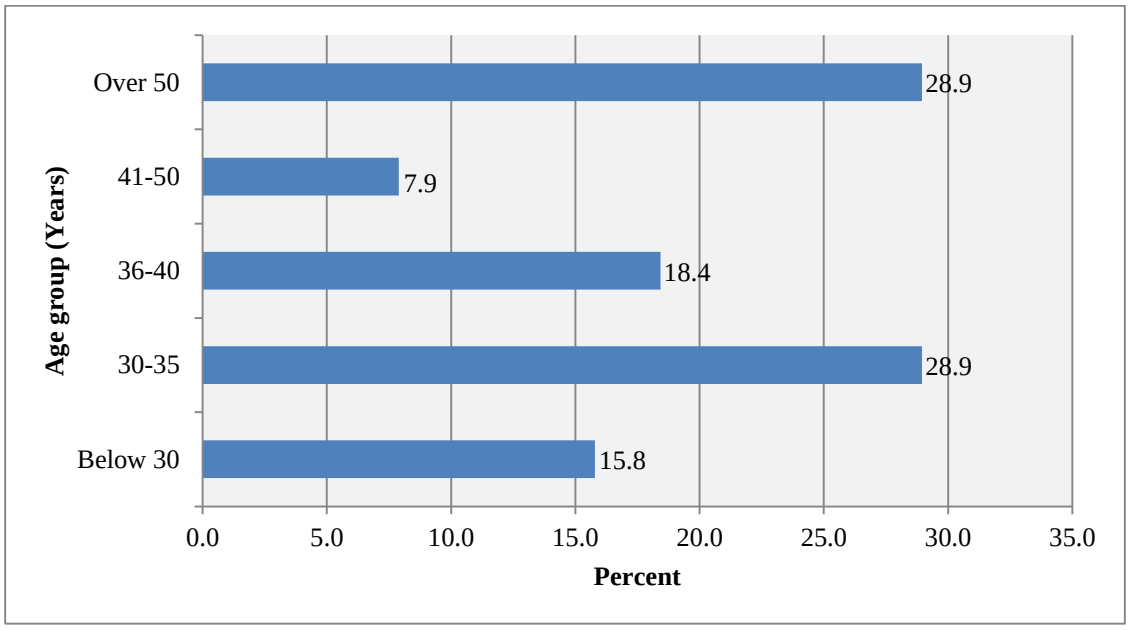

Figure 4.1: Age-group of the respondents

Source: Research data (2021)

In terms of their age, the number of respondents aged over 50 years was equal to those aged 30-35 years at 28.9%. There were several of them aged 36-40 years (18.4%) while only 7.9% were 41 to 50 years. The rest (15.8%) were less than 30 years old. The findings indicates that the youth (35 years and below) occupied quite many slots (44.7%) among the construction project management teams. This implies that among project managers,

project supervisors and contractors cumulatively in charge of the construction projects in Makueni County, majority are aged 40 years and below.

4.3.3 Distribution of Respondents by Education Level

Educational qualification of the respondents was also assessed. As such, they were asked to indicate their highest educational qualification. Figure 4.2 indicates the results.

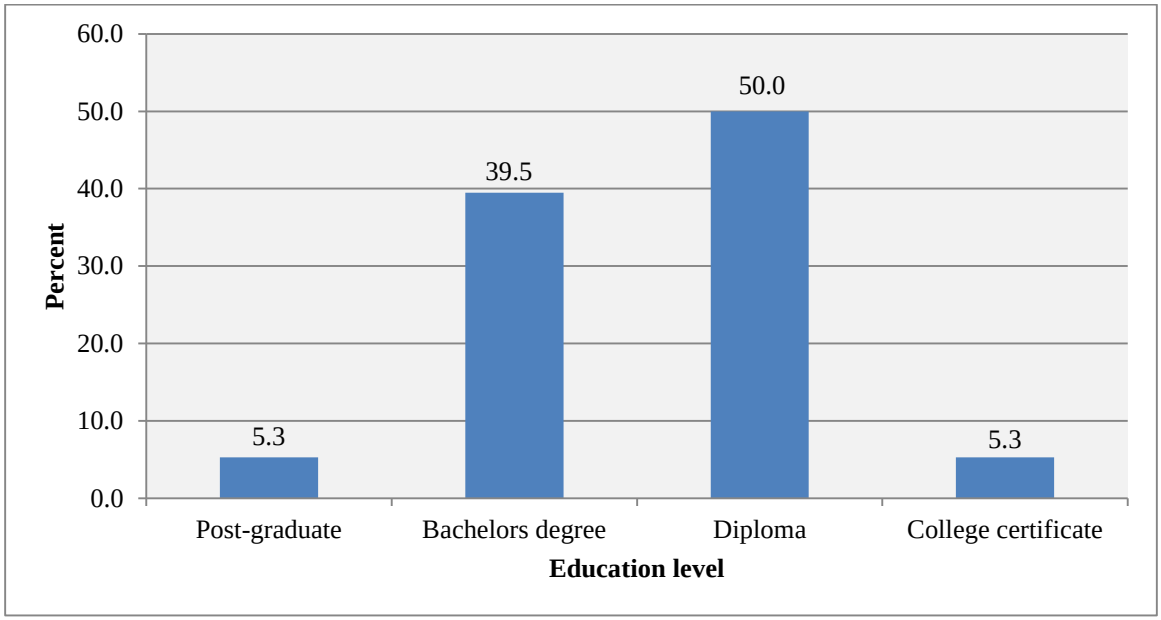

Figure 4.2: Respondents' highest education level

Source: Research data (2021)

Majority of the respondents were diploma and bachelor's degree holders at 50% and 39.5% respectively. There were however a few post-graduates and college certificate holders at 5.3% each. The findings indicate high educational qualifications of the members of the project management teams in charge of most construction projects by Makueni county government.

4.4 Descriptive Statistics

Aspects of each of the study variables including resource risk management, budget control risk management, and litigation risk management and project performance were assessed using descriptive statistics from the quantitative data analysis. Each of the variables had a set of statements that were designed and expressed to assess it by respondents indicating their agreement or disagreement with it on a scale of 1-5 (1= strongly disagree; 2= disagree; 3= neutral; 4= agree; 5= strongly agree). The percentage, mean and standard deviation (Std. dev) for the responses were computed and are presented and discussed in sections 4.4.1 through 4.4.4.

4.4.1 Resource Risk Management

Resource risk management in the projects was assessed based on five statements. The mean and standard deviation (Std. dev) for the responses were determined and are presented in table 4.3.

Table 4.3: Resource risk management in the construction projects

Statement	1	2	3	4	5	Mean	Std. dev
The financial resources were readily available and adequate for the for the different project activities	10.5	52.6	23.7	7.9	5.3	2.45	0.98
The construction materials were availed in time for the various project activities	-	-	23.7	65.8	10.5	3.87	0.58
The construction materials were adequate for the various project activities	-	-	2.6	55.3	42.1	4.39	0.55
All the capital equipment needed for the project were available and suitable for use throughout the project period	-	-	2.6	39.5	57.9	4.55	0.55
Human resources was readily available and adequate for the project	-	-	7.9	23.7	68.4	4.61	0.64
Average						3.97	0.66

Source: Research data (2021)

The overall mean on resource risk management was 3.97 which indicate that most of the respondents agreed with the statements assessing resource risk management. Most of the responses were close to the mean as indicated by the low standard deviation of 0.66. The findings imply that the respondents concurred that in most of the projects, resources were available, adequate and suitable. A further scrutiny on individual statements revealed that the standard deviations for the scores ranged between 0.55 and 0.98. This implies that for each statement, the responses were clustered around the mean score.

It was revealed that most of the respondents strongly agreed that during the projects, human resource was readily available and adequate (mean = 4.61), and all the capital equipment needed were also available and suitable throughout the project period (mean = 4.55). This differs from the findings by Jayasudha, Vidivelli and Surjith (2014) where shortage of human resource was found to be a major risk in construction projects in India. Moreover, most of them agreed that the construction materials were adequate for the various project activities (mean = 4.39). However, majority disagreed that the financial resources were readily available and adequate for the different project activities as indicated by the low mean of 2.45. Similar situation was reported by Jayasudha, Vidivelli and Surjith (2014) in the case of construction projects in India where they indicated that the projects had major financial resources risk.

4.4.2 Budget Control Risk Management

Budget control risk management in the projects was assessed based on four statements. The mean and standard deviation for the responses were determined and are presented in table 4.4.

Table 4.4: Budget control risk management in the construction projects

Statement	1	2	3	4	5	Mean	Std. dev
There was high precision in cost estimation in the project budget	2.6	-	21.1	71.1	5.3	3.76	0.68
There were minimal budget overruns in the course of undertaking the various project activities	-	-	23.7	65.8	10.5	3.87	0.58
There were minimal deviations from the project activities schedule	-	10.5	18.4	42.1	28.9	3.89	0.95
There were no major changes in layout design during the undertaking of the project	-	-	-	10.5	89.5	4.89	0.31
Average						4.11	0.63

Source: Research data (2021)

The aggregated mean for budget control risk management was 4.11. This indicates that majority of the respondents agreed with the statements assessing budget control risk management. The low std. dev of 0.63 indicates that there was minimal variation of the responses from the mean. This is also reflected in the low standard deviations for the different statements (ranging from 0.31 to 0.95) implying that for each of the statements, majority of the responses were close to the mean.

Majority of the respondents agreed that there were no major changes in layout design during the undertaking of the projects (mean = 4.89, std. dev = 0.31). They also agreed that there were minimal budget overruns in the course of undertaking the various project activities (mean = 3.87, std. dev = 0.57). Moreover, they agreed that there was minimal deviations from the project activities schedule (mean = 3.89, std. dev = 0.95) and high precision in cost estimation

in the project budget (mean = 3.76, std. dev = 0.68). These findings differ from the findings by Rehacek and Bazsova (2018) who found that budget control risks in terms of cost overruns and scheduling risks were common in many projects.

4.4.3 Litigation Risk Management

Litigation risk management in the projects was assessed based on four statements. The mean and standard deviation for the responses were determined and are presented in table 4.5.

Table 4.5: Litigation risk management in the construction projects

Statement	1	2	3	4	5	Mean	Std. dev
The project complied with all the requisite construction regulations	-	-	13.2	63.2	23.7	4.11	0.61
Procurement of all the materials used was done with strict compliance to the set procurement regulations	-	-	-	57.9	42.1	4.42	0.50
All the environmental regulations were complied with during the undertaking of the project	-	-	28.9	36.8	34.2	4.05	0.80
There were minimal disputes related to legal requirements compliance during the undertaking of the project	-	-	2.6	31.6	65.8	4.63	0.54
Average						4.30	0.61

Source: Research data (2021)

The overall mean for litigation risk management was 4.30. This is an indication that majority of the respondents agreed with the statements. This was also evident in the sample means for the different statements which ranged between 4.05 and 4.63. Individual responses were also clustered around the mean scores as indicated by the low standard deviations of 0.54 to 0.8.

Most of the respondents agreed that there were minimal disputes related to legal requirements compliance during the undertaking of the project (mean = 4.63, std. dev = 0.54) and procurement of all the materials used done with strict compliance to the set procurement regulations (mean = 4.42, std. dev = 0.50). Additionally, most of the projects complied with all the requisite construction regulations (mean = 4.11, std. dev = 0.61), and all the environmental regulations were complied with during undertaking of the projects (mean = 4.05, std. dev = 0.80). The findings implies minimal litigation risks in the projects which disagrees with Kishan, Bhatt and Bhavsar (2014) who found out major legal risks in the projects investigated which were found to cause schedule delays and cost overruns.

4.4.4 Project Performance

Project performance was assessed based on five statements. The mean and standard deviation (Std. dev) for the responses were determined and are presented in table 4.6.

Table 4.6: Project performance of the construction projects

Statement	1	2	3	4	5	Mean	Std. dev
The cost of most of the project activities in the project was within the cost estimates in the budget	-	-	-	92.1	7.9	4.08	0.27
There were minimal cost overruns in completion of the project.	-	-	10.5	73.7	15.8	4.05	0.52
The whole project was completed within the set timeline.	15.8	76.3	2.6	2.6	2.6	2.00	0.74
Most of the project activities were completed within their scheduled time	-	60.5	34.2	2.6	2.6	2.47	0.69
After its completion, the project enhanced the citizens' access to better services.	-	2.6	26.3	55.3	15.8	3.84	0.72
Average						3.29	0.59

Source: Research data (2021)

The aggregated mean for performance of the construction projects in the County was 3.29 out of 5. However, there were notable variations on the different aspects of performance as indicated by sample means for the different statements which ranged between a low of 2.00 to a high of 4.08. This implies that respondents agreed with some of the statements used to assess the project performance but they disagreed with others. The low range of the standard deviations (between 0.27 and 0.74) indicates that for each of the statements, majority of the responses were close to the mean.

A vast majority of the respondents agreed that the cost of most of the project activities was within the cost estimates in the budget (mean = 4.08), std. dev = 0.27) with minimal cost overruns experienced in completion of the projects (mean = 4.05, std. dev = 0.52). However, they disagreed that the projects were completed within the set timeline (mean = 2.00, std. dev = 0.74). They also disagreed that most of the project activities were completed within their scheduled time (mean = 2.47, std. dev = 0.69). Even so, they agreed that after their completion, most of the project enhanced the citizens' access to better services (mean = 3.84, std. dev = 0.72).

4.5 Inferential Statistics

Inferential statistics were computed to analyze how the study variables were related; particularly the relationship between project performance [PP] and: resource risk management (RRM), budget control risk management (BCRM) and litigation risk management (LRM). In this regard, correlation and regression analysis were done and the findings are presented in sections 4.5.1 and 4.5.2 respectively.

4.5.1 Correlation Analysis

Correlation coefficient (r) indicates whether variables are related or not and how they are related (positively or negatively). The p-value (Sig.) indicates whether the correlation is significant or not whereby if the p-value is less than the level of significance (Sig.) at which the correlation analysis was done, the relationship is significant and vice versa. The correlation coefficient ranges between –1 and +1 whereby the higher the value, the stronger the correlation in the respective direction indicated by the sign (either positive or negative) while 0 shows that the variables are not correlated (Gogtay & Thatte, 2017). Table 4.7 presents the correlation analysis results.

Table 4.7: Correlation between the study variables

		PP	RRM	BCRM	LRM
PP	Correlation Coefficient	1.000	.370*	.553**	.097
	Sig. (2-tailed)	.	.022	.000	.564
	N	38	38	38	38
RRM	Correlation Coefficient	.370*	1.000	.057	-.098
	Sig. (2-tailed)	.022	.	.736	.559
	N	38	38	38	38
BCRM	Correlation Coefficient	.553**	.057	1.000	.246
	Sig. (2-tailed)	.000	.736	.	.137
	N	38	38	38	38
LRM	Correlation Coefficient	.097	-.098	.246	1.000
	Sig. (2-tailed)	.564	.559	.137	.
	N	38	38	38	38

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

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

Source: Research data (2021)

There was a positive correlation of 0.370 between resource risk management and project performance. The p-value for the correlation (sig.= 0.022) implies that it is significant since

it is less than 0.05. This means that there is a significant relationship between resource risk management and performance of construction projects. This concurs with Jayasudha, Vidivelli and Surjith (2014) who found that resource risk management had a significant effect on project performance.

Similarly, budget control risk management and project performance had a positive correlation of 0.553. The correlation is also significant because the p-value (sig.= 0.000) is less than 0.05. This is an indication that there exists a significant relationship between budget control risk management and project performance in construction projects. The findings agree with the Hatefi (2018) who indicated that budget control risks management significantly affects project performance.

The correlation coefficient between litigation risk management and project performance was the least at 0.097. The correlation is not significant because its p-value (sig.= 0.564) is greater than 0.05. This implies that litigation risk management in construction projects has insignificant relationship with the performance of the projects. This is congruent to the findings by Elijah (2017) that indicated that litigation risks did not have a significant effect on project's performance.

4.5.2 Diagnostic Tests

4.5.2.1 Test for Normality

Normality test was tested based on Shapiro-Wilk test. The results were as presented in table 4.8.

Table 4.8: Normality test results

		Shapiro-Wilk		
		Statistic	df	Sig.
PP	RRM	.863	38	.272
	BCRM	.964	38	.637
	LRM	.937	38	.489

a. Liliefors Significance Correction

Source: Research data (2021)

From the Shapiro-Wilk test, the corresponding p-values for the normality statistic for each of the variables exceeded 0.05. That is, RRM = 0.272, BCRM = 0.637 and LRM = 0.489. This indicates that the data was normally distributed.

4.5.2.2 Test for Heteroscedasticity

Levene's test was used to assess whether the data was homoscedastic or heteroscedastic. The results were as presented in table 4.9.

Table 4.9: Heteroscedasticity test results

	Levene Statistic	df1	df2	Sig.
RRM	0.892	5	31	0.499
BCRM	0.907	5	31	0.489
LRM	0.705	5	31	0.624

Dependent variable: PP
Sig. = 0.05

Source: Research data (2021)

From the results, the corresponding p-value for Levene statistic for each of the variables was greater than 0.05. That is, RRM: Sig. = 0.499; BCRM: Sig. = 0.489 and LRM: Sig. = 0.624. This implies that the data was homoscedatic. That is, there were no significant differences in error variances in the data, hence no heteroscedasticity.

4.5.2.3 Test for Multicollinearity

To test for multicollinearity, the variance inflation factor (VIF) was used. Table 4.10 presents the results.

Table 4.10: Multicollinearity test results

Model		Collinearity Statistics	
		Tolerance	VIF
1	RRM	0.994	1.006
	BCRM	0.965	1.036
	LRM	0.968	1.033

a. Dependent Variable: PP

Source: Research data (2021)

The variance inflation factor for each of the variables was less than 5. That is, RRM had a VIF of 1.006, BCRM had a VIF of 1.036 while LRM had a VIF of 1.033. The results indicate that there was no multicollinearity between the independent variables.

4.5.3 Regression Analysis

Regression analysis results were first analyzed and discussed based on the coefficient of determination (R Square) for the model. Table 4.11 presents the model summary indicating the coefficient of determination.

Table 4.11: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.495[a]	.245	.178	.30886	.245	3.677	3	34	.021

a. Predictors: (Constant), RRM, BCRM, LRM

Source: Research data (2021)

The focus of the model summary was to determine the R Square value which was found to be 0.245. This R Square value means that 24.5% of the change in the performance of the construction projects is determined by RRM, BCRM and LRM collectively. The relatively low R Square means that performance of construction projects is affected by many other factors apart from RRM, BCRM and LRM. This however does not negate the causality of the predictors in the model. According to Frost (2013), irrespective of the value of R Square, it is the significance of the coefficients of the relationship between a predictor and the dependent variable (while holding the other predictors constant) that explain the meaningful change caused.

The Analysis of variance (ANOVA) results from the regression analysis was also assessed to determine the significance of the regression model. Table 4.12 presents the ANOVA results for the model.

Table 4.12: Analysis of variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.052	3	.351	3.677	.021[b]
	Residual	3.243	34	.095		
	Total	4.296	37			

a. Dependent Variable: PP

b. Predictors: (Constant), RRM, BCRM, LRM

Source: Research data (2021)

The ANOVA helps to test the significance of the regression model estimated for the relationship between the variables. This is based on the significance of the F-statistic value of the ANOVA. The F-value was 3.677 with a p-value of 0.021. Since the p-value is less than 0.05, then the F-value is significant. That means the regression model estimated based on the data used is significant (at the 0.05 significance level) in describing the influence of resource risk management, budget control risk management and litigation risk management on project performance.

Lastly, the regression coefficients as derived in the regression analysis results were assessed and used to estimate the model for the influence of the independent variables on the dependent variable for this study. The regression coefficient results are presented in table 4.13.

Table 4.13: Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.407	1.023		.398	.693
	RRM	.208	.126	.248	1.656	.107
	BCRM	.349	.140	.379	2.501	.017
	LRM	.145	.185	.119	.786	.437

a. Dependent Variable: PP

Source: Research data (2021)

Multiple linear regression analysis was computed to estimate the influence of the independent variables on the dependent variable. The regression was in the form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Y is project performance (PP)

X_1, X_2, and X_3 are the independent variables – resource risk management (RRM), budget control risk management (BCRM), and litigation risk management (LRM) respectively.

β_1, β_2, and β_3 are the regression coefficients – coefficients for RRM, BCRM, and LRM respectively

β_0 is the regression constant and e is the error term

Thus, using the regression coefficients as derived in table 4.10, the regression model for the influence of risk governance on project performance was:

$$\mathbf{Y = 0.407 + 0.208X_1 + 0.349X_2 + 0.145X_3}$$

The regression coefficient for resource risk management was 0.208 an indication that resource risk management positively affects project performance. This implies that enhancement of resource risk management improves performance of the construction

projects. However, the coefficient was insignificant with a p-value = 0.107 which is greater than 0.05. This finding differs from Irfandhi (2016) who found that resource risk management in IT projects negatively affected project performance. The difference could be attributed to the manner in which the resource risk was managed in the two different categories of projects.

The regression coefficient for budget control risk management was 0.349 an indication that budget control risk management positively influences project performance. This implies that enhancement of budget control risk management improves performance of the construction projects. The coefficient was significant with a p-value = 0.017 which is less than 0.05. This finding agrees with Rugenyi (2015) who found that budget control risk management was a significant factor that positively affected project performance.

The regression coefficient for litigation risk management was 0.145 an indication that litigation risk management positively influences project performance. This implies that enhancement of litigation risk management improves performance of the construction projects. However, the coefficient was insignificant with a p-value = 0.437 which is greater than 0.05. This finding differs from Renault and Agumba (2016) who found that litigation risk management was a significant factor that influenced projects performance.

4.6 Qualitative Data Analysis

The qualitative data was analyzed through content analysis whereby major themes were identified from the responses to the open-ended questions for each variable. The questions particularly sought to investigate how management of the various project risks was enhanced and assess the respondents' perception on how the performance of the projects

can be improved. The findings were discussed in prose form based on the themes identified as presented in sections 4.6.1 through 4.6.4.

4.6.1 Resource Risk Management

Respondents expressed how resource risk management was enhanced particularly on financial risk which was identified as the major source of resource risks in majority of the projects. Outsourcing of finances was mentioned by most of them as a common measure that is applied to enhance resource risk management. Many of them indicated that they usually had to borrow finances in order to complete the projects. This indicates that financial borrowing is largely used to enhance financial resource risk management.

Several respondents expressed that proper resource planning helped enhanced resource risk management in the projects. Quite a number of them indicated that they ensured that all the requisite resources for the projects were clearly identified and mobilized before embarking on the project. This implies that pooling resources that are enough to complete the project before kick-starting its implementation also helps to enhance resource risk management.

Most of them also indicated that strict monitoring and control of the project expenses were used to enhance resource risk management. Many of them explained that through close and continuous monitoring and supervision of the budget during the project implementation process, most of the expenses were aligned within the budget limits. Most of them emphasized that there were strict controls to avoid extra expenses or keep them at minimum. This is an indication that strict monitoring and control of the project expenses also helps in improving resource risk management.

4.6.2 Budget Control Risk Management

Among the measures applied to enhance budget control risk management, most of respondents indicated adequate short term and long term planning for the projects as a common measure used. Many of them expressed that in the projects they were involved, there was proper short term and long term planning which was done by qualified staff. This implies that many projects apply proper project planning to enhance budget control risk management.

Many respondents also indicated that prioritizing was largely applied in the projects to improve budgetary control risk management. They asserted that in most of the projects, the project management team ensured all resources were primarily directed to the core project activities. Many also explained that the project management teams ensured that most of resources were directly spent on the key project activities. This implies that by giving the core project activities major priority in the budget and accordingly channeling majority of all the resources towards these core activities, budget control risk management is enhanced.

4.6.3 Litigation Risk Management

To enhance litigation risk management, most of the respondents indicated that they ensured there was adequate public participation in undertaking of the projects from initiation and throughout the implementation process. Majority of them articulated that there was adequate stakeholders' engagement in most of the projects with many indicating that there was involvement of all stakeholders prior and during the execution of the project. This indicates that effective stakeholders' engagement is critical in enhancing litigation risk management.

The other common strategy that was highlighted by the respondents as highly applied to improve litigation risk management is compliance with all legal requirements. Majority of the respondents indicated that the project management team ensured that all legal requirements were adhered to before and during the implementation of the project. Several of them also explained it as ensuring all the necessary legal measures are in place before, while ongoing with the project and after its completion. This indicates that to enhance litigation risk management, compliance to all legal requirements throughout the project life cycle is vital.

4.6.4 Project Performance

Respondents suggested various measures to improve performance of the projects. One of the major ones suggested by majority of them is recruitment of qualified staffs in undertaking the project. Most of them expressly indicated that it is fundamental for every project to have adequately skilled project management team. Many of them expressed it as having or recruiting adequately skilled workers for the projects including well trained managers and technicians. This means that having enough number of staffs who are also well skilled and experienced in the project management team is crucial for improving project performance.

Adequate financing was also suggested by many respondents for improvement of project performance. Most of them indicated that the county government should ensure they avail enough financial resources for the various projects. They also expressed that it is critical for finances to be readily available throughout the project implementation period. Many of them also explained that sufficient finances would help to ensure workers are paid on time

and avoid delay of project. This is an indication that adequate financing is fundamental in enhancing project performance.

Most of the respondents also highlighted consideration of weather conditions in planning as vital for improving project performance. Several of them asserted that factors like weather patterns should be considered in planning the various project activities to enable timely completion of the project. Many were categorical that critical project activities that should not be scheduled at times when it is rainy season to avoid floods and other related hazards that undermines project completion. This is an indication that weather conditions particularly rainfall patterns should be carefully taken into account when planning for the project implementation for effective project performance with minimal delays.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter first recaps the study especially the key findings, derives the conclusions and proposes the recommendations. As such, it is divided into: summary, conclusions, recommendations and areas for further research.

5.2 Summary

This research set out to assess how risk governance influences construction projects' performance in Makueni County. In particular, it sought to investigate the influence of resource risk management on construction projects' performance, investigate the influence of budget control risk management on construction projects' performance, and assess how litigation risk management influenced construction projects' performance.

5.2.1 Resource Risk Management and Project Performance

Majority of the respondents agreed that human resource and the construction materials were adequate and readily available. They also agreed that all the capital equipment needed in the projects was also available and suitable. However, they disagreed that financial resources were readily available and adequate for the project activities. It was found that resource risk management has insignificant positive effect on the performance of the construction projects.

5.2.2 Budget Control Risk Management and Project Performance

In most of the completed projects, respondents agreed that there were no major changes in layout design during the project implementation. Additionally, they agreed that minimal deviations were experienced in project activities' schedule and there were minimal budget overruns in the various project activities. Budget control risk management was found to have a significant positive influence on the construction projects' performance.

5.2.3 Litigation Risk Management and Project Performance

Most of the respondents agreed that there were minimal disputes related to legal requirements compliance in undertaking of the projects. Particularly, they agreed that procurement of materials used was done with strict compliance to the set procurement regulations, and the projects complied with the requisite construction regulations. Moreover, they agreed that environmental regulations were complied with in undertaking the projects. Findings also indicated that litigation risk management has a positive but insignificant influence on the construction projects' performance.

5.3 Conclusions

In line with the research objectives, a number of conclusions were made. First, the study concluded that among the three aspects of risk governance investigated (resource risk management, budget control risk management and litigation risk management) in construction projects by Makueni County government, budget control risk management exerts the strongest influence on project performance. This was reflected by its highest regression coefficient as well as the highest correlation coefficient between budget control risk management exerts the strongest influence on project performance.

On the influence of resource risk management on construction projects' performance, it is concluded that resource risk management exerts insignificant positive effect on projects' performance. That is, an insignificant positive relationship exists between resource risk management and projects' performance in the construction projects by Makueni County government.

Regarding the influence of budget control risk management on construction projects' performance, the study concludes that budget control risk management has a significant positive effect on the projects' performance. That is, a significant positive relationship exists between budget control risk management and projects' performance in the construction projects by Makueni County government.

With respect to the influence of litigation risk management on construction projects' performance, the study concludes that although litigation risk management is very good in the construction projects by Makueni County government, it has an insignificant effect on the projects' performance. This means litigation risk management has insignificant effect on performance of construction projects by Makueni County government.

5.4 Recommendations

The county government of Makueni should make sure that they set aside adequate financial resources for the various construction projects to be implemented. They may consider setting up a kitty specifically for construction projects where all the funds from diverse sources including the county government allocations and the donors' fund can be pooled together. Financing the projects can then be done from this kitty which should have a board

managing it. This will help to ensure that financial resources are availed in time while undertaking the projects with minimal delays.

The huge proportion of resources during budgeting should be channeled towards the main project activities. Capital expenditure should constitute the largest part of the budget compared to recurrent expenditure like salaries and wages. This will help to ensure that the maximum volume of the available resources is directly spent in undertaking the project activities.

The project management teams in charge of the construction projects should continue complying with all the legal requirements during the projects keeping abreast with any changes in the various regulations over time to ensure total compliance. However, they must make sure that litigation risk management is not overemphasized at expense of other risk governance aspects like resource risk management.

5.5 Suggestions for Further Research

While this research provides quite substantial knowledge on risk governance and its influence on project performance, further research is necessary on diverse projects in different areas not just Makueni County. This can help to make comparisons and gain more insights on the same in different contexts which is critical in enhancing the knowledge on the influence of risk governance and project performance.

It is also important that mores studies be conducted focusing on other aspects of risk governance apart from resource risk management, budget control risk management and litigation risk management. In this regard, future studies may focus on the influence of

socio-cultural risk management, economic risks management among others, on project performance.

REFERENCES

Adams, A. B. (2017). Project management for developing countries: Back to basics. *Dama International Journal of Researchers*, 2(4), 05-09.

Alqahtani, F., Chinyio, E., Mushatat, S. & Oloke, D. (2015). Factors effecting performance of projects: A conceptual framework. *International Journal of Scientific & Engineering Research*, 6(4), 670-676.

Asiamah, N., Mensah, H. K. & Oteng-Abayie, E. F. (2017). General, target, and accessible population: Demystifying the concepts for effective sampling. *The Qualitative Report*, 22(6), 1607-1621.

Camilo, M., Gabriela, F., Madalena, A. & Enrique, A. (2019). Operational risk categorization in project-based organizations: A theoretical perspective from a project portfolio risk lens. *Procedia Manufacturing*, 41, 771–778.

Elijah, O. A. (2017). Risk management strategies and performance of construction firms in selected counties in Kenya. *Unpublished Doctorate Thesis*. Kenyatta University, Nairobi.

Etikan, I., Musa, S. A. & Alkassim, R. S. (2015). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4.

Fraser, J., Fahlman, D., Arscott, J. & Guillot, I. (2018). Pilot testing for feasibility in a study of student retention and attrition in online undergraduate programs. *International Review of Research in Open and Distributed Learning*, 19(1), 260-278.

Frost J. (2013). Regression Analysis: How Do I Interpret R-squared and Assess the Goodnessof-Fit? *The Minitab Blog*. Retrieved from: http://blog.minitab.com/blog/adventures-in-statistics-2/regression-analysis-how-do-iinterpret-r-squared-and-assess-the-goodness-of-fit. (Accessed 20 March 2021).

Giraldi, L. R., Junior, R. R. & Moutinho, J. A. (2018). Characterization of risk factor management in infrastructure projects. *Gestao Producao, São Carlos*, 25(1), 30-43.

Gitahi, S. M. & Tumuti, J. (2019). Management of contracting risks on performance of construction projects in Kilifi County, Kenya. *International Academic Journal of Information Sciences and Project Management*, 3(3), 105-130.

Goldratt, E. M. & Cox, J. (1984). *The goal, croton-on-hudson*. NY: North River Press Inc.

Government of Makueni County (2020). *Makueni County projects management system*. Retrieved from: https://makueni.go.ke/projects/public/stalled.php

Gyamfi, T. A., Zievie, P. & Boateng, V. (2016). Risk management of procurement challenges: The implication to construction firms in Ghana. *American Journal of Engineering Research*, 5(8), 164-172.

Haradhan, M. (2017). Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University*, 17(3), 58-82.

Hatefi, M. A. (2018). Assessment of risk factors of a completed oil and gas project, with the use of a hybrid EVM-SAW method. *Journal of Energy Management and Technology*, 2(1), 42-53.

Heale, R. & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence Based Nursing*, 18(3), 66-67.

Higgins, J. (2005). *The radical statistician*. London: Prentice Hall Publishing

Ika, L. A. (2012). Project management for development in Africa: Why projects are failing and what can be done about it. *Project Management Journal*, 43(4), 27–41.

Irfandhi, K. (2016). Risk management in information technology project: An empirical study. *ComTech*, 7(3), 191-199.

Jayasudha, K., Vidivelli, B. & Surjith, E. R. (2014). Risk assessment and management in construction projects. *International Journal of Scientific & Engineering Research*, 5(8), 387-396.

Jolly, B., Isa, F. M., Othman, S. N. & Ahmdon, M. S. (2016). The influence of management capability, marketing capability and competitive advantage on Malaysian construction project performance. *International Review of Management and Marketing*, 6(S8), 142-148.

Kariuki, J. T. (2018). The effect of project manager's leadership style on performance of water projects in Kenya. *European Scientific Journal*, 14(17), 33-45.

Kishan, P., Bhatt, R. & Bhavsar, J. J. (2014). A study of risk factors affecting building construction projects. *International Journal of Engineering Research & Technology*, 3(12), 831-835.

Klakegg, O. J., Williams, T., & Shiferaw, A. T. (2015). Taming the 'trolls': Major public projects in the making. *International Journal of Project Management*, 5(3), 17-24

Koech, W., Mwangangi, S., Murage, D., Omondi, W., Ngari, P., Abaya, S., Towett, M. & Njeru, R. (2016). *Environment and Social Screening Project Report for Last Mile Connectivity Project*. Nairobi: Kenya Power.

Kwon, H. & Kang, C. W. (2019). Improving project budget estimation accuracy and precision by analyzing reserves for both identified and unidentified risks. *Project Management Journal*, 50(1), 86–100.

Maendo, D. O., James, R. & Kamau, L. (2018). Effect of project monitoring and evaluation on performance of road infrastructure projects constructed by local firms in Kenya. *International Journal of Economics, Business and Management Research*, 2(04), 317-328.

Mariusz, U., Adnan, H. & Isaiah, O. (2019). The moderating role of risk management in project planning and project success: Evidence from construction businesses of Pakistan and the UK. *Engineering Management in Production and Services*, 11(1), 23-35.

Masar, M., Hudáková, M., Šimák, L. & Brezina, D. (2019). The current state of project risk management in the transport sector. *Transportation Research Procedia*, 40, 1119–1126

Maunda, F. M. & Moronge, M. (2016). Influence of project life cycle management on completion of public projects in Kenya: A case of Makueni constituency. *The Strategic Journal of Business & Change Management*, 3(4/9), 162-184.

Mobegi, J. O., Sang, P. & James, R. (2019). Economic environment and performance of donor funded health projects in Kenya. *Journal of Economics and Business,* 2(4), 1118-1128.

Mukoche, W. C., Wanjala, K. B. & Simiyu, J. W. (2018). Contribution of quality assurance practices by contractors on quality of public building projects in Kenya by devolved units: A case of Busia County in Western region, Kenya. *International Journal of Advance Research, Ideas and Innovations in Technology,* 4(5), 356-360.

Musyoki, K. J. & Ngugi, L. (2019). Critical factors and their influence on performance of road construction projects in Kiambu County, Kenya. *International Journal of Scientific and Education Research*, 3(03), 44-66.

Muute, N. C. & James, R. (2019). *Project planning practices and performance of construction projects in Nairobi City County, Kenya*. Unpublished Master's Thesis, Kenyatta University, Nairobi.

Mwadime, E. A. & Rosemary, J. (2019). Relationship management and performance of road construction projects in Uasin Gishu County, Kenya. *The Strategic Journal of Business & Change Management*, 6(2), 2483-2495.

Mwangi, H. M. & Ngugi, L. (2018). Risk management practices and performance of construction projects in Nairobi City County Government, Kenya. *International Academic Journal of Information Sciences and Project Management*, 3(2), 111-136.

Naeem, S., Khanzada, B., Mubashir, T. & Sohail, H. (2018). Impact of project planning on project success with mediating role of risk management and moderating role of

organizational culture. *International Journal of Business and Social Science*, 9(1), 88-98.

National Council for Law Reporting (2011). *Laws of Kenya: The National Construction Authority Act No. 41 of 2011*. Nairobi: National Council for Law Reporting.

Nyarangi, M. H., Ogolla, P. & Kitheka, S. (2021). Effect of project risk management processes on performance of borehole projects in Mombasa County, Kenya. *The Strategic Journal of Business & Change Management*, 8 (2), 292 – 311.

Omeno, B. K. & Sang, P. (2018). Project management and performance of public sector construction projects: A case of constituency development funds projects in Migori East, Kenya. *International Journal of Current Aspects in Project Management*, 1(1), 13-26.

Ong'ondo, C. B., Gwaya, A. S. & Masu, S. (2019). Appraising the performance of construction projects during implementation in Kenya, 1963-2018: A literature review perspective. KICEM Journal of Construction Engineering and Project Management, 9(2), 1-24.

Oribhabor and Anyanwu (2019). Research sampling and sample size determination: a practical application. *Federal University Dutsin-Ma Journal of Education Research (Fudjer)*, 2(1), 47-56

Ouma, V. O. (2016*). Influence of types of risks on performance of distribution projects: A case of Kenya Power And Lighting Company in Nairobi County*. Master of Arts in Project Planning and Management Thesis, Nairobi University.

Oztas, A. & Okmen, O. (2005). Judgmental risk analysis process development in construction projects. *Building and Environment*, 40(9), 1244-1254

Pavan, G. K. & Kulkarni, N. (2014). Research methodology: Review article. *International Journal of Innovative Research and Development*, 3(7), 168-173.

Pfeffer, J. & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. NY: Harper and Row

Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics & Management Sciences*, 6(2), 1-5.

Rahman, M. S. & Adnan, T. M. (2020). Risk management and risk management performance measurement in the construction projects of Finland. *Journal of Project Management*, 5, 167–178.

Rehacek, P. & Bazsova, B. (2018). Risk management methods in projects. *Journal of Eastern Europe Research in Business and Economics*, 2018, 1-11

Renault, B. Y. & Agumba, J. N. (2016). Risk management in the construction industry: A new literature review. *MATEC Web of Conferences*, 66(00008), 1-6.

Rodriguez-Rivero, R., Ortiz-Marcos, I., Romero, J. & Ballesteros-Sánchez, L. (2020). Finding the links between risk management and project success: Evidence from international development projects in Colombia. *Sustainability*, 12(9294), 1-19.

Rugenyi, F. (2015). Assessment of the triple constraints in projects in Nairobi: The project managers' perspective. *International Journal of Academic Research in Business and Social Science*, 5(11), 1-16.

Sataloff, R. T. & Vontela, S. (2021). Response rates in survey research. *Vf Journal of Voice*, 35(5), 683-684.

Silvius, G. & Schipper, R. (2019). Planning project stakeholder engagement from a sustainable development perspective. *Administrative Sciences*, 9(46), 1-22.

Singh, A. P. (2014). A review on research design and its important parameters. *International Journal of Advance Research in Science and Engineering*, 3(7), 319-324.

Taherdoost, H. (2016). Validity and reliability of the research instrument: How to test the validation of a questionnaire/survey in a research. *International Journal of Academic Research in Management*, 5(3), 28-36.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of Medical Education*, 2, 53-55.

Tipili, L. G. & Ibrahim, Y. (2015). Identification and assessment of key risk factors affecting public construction projects in Nigeria: Stakeholders perspectives. In Ogunsemi, D. R., Awodele, O. A., and Oke, A. E. (Eds), *Proceedings of the 2nd Nigerian Institute of Quantity Surveyors Research Conference*. Federal University of Technology, Akure (pp 707 - 721).

Tong', J. N., Otieno, M. & Osoro, H. K. (2019). Effects of monitoring and evaluation process on the performance of county government projects in Kisii County, Kenya. *International Journals of Academics & Research*, 1(2), 81-92.

Wawira, M. C. & Were, S. (2017). Effects of Project management practices on community development in Nairobi City County. *International Journal of Project Management*, 1(9), 153-166

Zehir, C., Findikli, M. A. & Celtekligil, K. (2018). Resource dependence theory, firm performance and producers-suppliers relationships. *Proceedings of the Joint Conference: 14th ISMC and 8th ICLTIBM-2018*. Retrieved from: https://dx.doi.org/10.15405/epsbs.2019.01.02.14

APPENDICES

Appendix I: Introduction Letter

Kelvin Rwingo

P. O Box 70859-00400

Nairobi

Mobile: 0722 158185

Dear Sir/Madam,

REF: APPEAL FOR ACADEMIC PROJECT DATA

This is to kindly request you to assist me get data for undertaking my academic project as part of requirements to attain the degree of MBA (Project Management) in Kenyatta University. The research topic is **Risk Governance and Performance of Construction Projects in Makueni County, Kenya.** In regard to this, I humbly appeal to you to fill the questionnaire that has been designed to obtain the data. Your identity shall not be revealed by any means and all the information you provide shall be kept confidential. Your assistance in this regard will be highly appreciated.

Yours faithfully,

Kelvin Rwingo

Appendix II: Questionnaire

The purpose of this questionnaire is collection of data for carrying out an academic study on **Risk Governance and Performance of Construction Projects in Makueni County, Kenya.** Any data you give by filling this questionnaire is only meant for this academic research and shall be kept confidential. Where choices are given, indicate your response by a tick (√) or a cross (X).

Section A: Background Information

1) Kindly Indicate your:

a) Gender

Male [ ] Female [ ]

b) Age group (in years)

Below 30 [ ]

30-35 [ ]

36-40 [ ]

41-50 [ ]

Over 50 years [ ]

c) Highest education level

Post-graduate [ ]

Bachelors degree [ ]

Diploma [ ]

College certificate [ ]

Any other (Specify) _____

d) Position in the project handled in Makueni County

Project manager [ ] Project supervisor [ ] Contractor [ ]

Section B: Resource Risk Management

2 i) From your experience in the project you handled for Makueni County government, to what extent do you agree with the following statements pertaining to the management of resource risks in undertaking the project? Scale: 1= Strongly disagree; 2= Disagree; 3= Neutral; 4= Agree; 5= Strongly agree.

Statement	**1**	**2**	**3**	**4**	**5**
The financial resources were readily available and adequate for the for the different project activities					
The construction materials were availed in time for the various project activities					
The construction materials were adequate for the various project activities					
All the capital equipment needed for the project were available and suitable for use throughout the project period					
Human resources was readily available and adequate for the project					

ii) From your experience, what measures were used to enhance resource risk management in the project?

_____

_____

_____

Section C: Budget Control Risk Management

3 i) To what extent do you agree with the following statements pertaining to the management of budget control risks in undertaking the project? Scale: 1= Strongly disagree; 2= Disagree; 3= Neutral; 4= Agree; 5= Strongly agree.

Statement	1	2	3	4	5
There was high precision in cost estimation in the project budget					
There were minimal budget overruns in the course of undertaking the various project activities					
There were minimal deviations from the project activities schedule					
There were no major changes in layout design during the undertaking of the project					

ii) Please indicate the measures that were used to improve budget control risk management in the project?

_____

_____

_____

Section D: Litigation Risk Management

4 i) Based on you experience, what extent do you agree with the following statements pertaining to the management of litigation risks in undertaking the project? Scale: 1= Strongly disagree; 2= Disagree; 3= Neutral; 4= Agree; 5= Strongly agree

Statement	1	2	3	4	5
The project complied with all the requisite construction regulations					
Procurement of all the materials used was done with strict compliance to the set procurement regulations					
All the environmental regulations were complied with during the undertaking of the project					
There were minimal disputes related to legal requirements compliance during the undertaking of the project					

ii) From your experience, what measures were used to enhance litigation risk management in the project?

_____

_____

_____

PROJECT PERFORMANCE

5 i) From your experience in the undertaking of the project you handled in Makueni County government, what extent do you agree with the following statements? Scale: 1= Strongly disagree; 2= Disagree; 3= Neutral; 4= Agree; 5= Strongly agree.

Statement	**1**	**2**	**3**	**4**	**5**
The cost of most of the project activities in the project was within the cost estimates in the budget					
There were minimal cost overruns in completion of the project.					
The whole project was completed within the set timeline.					
Most of the project activities were completed within their scheduled time					
After its completion, the project enhanced the citizens' access to better services.					

ii) In your opinion, what measures would you suggest to enhance the performance of construction projects in Makueni County?

……

……

……

Appendix III: Construction Projects in Makueni County Completed in 2018/2019

Project	**Ward**
1) Construction of PWD classroom at Kalongo	Kilungu
2) Reconstruction of Mwasang'ombe dispensary	Emali/Mulala
3) Reconstruction of Kyaluma dispensary	Kalawa
4) Reconstruction of Yekanga dispensary	Kitise/Kithuki
5) Kee Market Sheds Construction (Ikalyoni &Mutulani)	Kee
6) Kwa Somba - Mulala - Kathuma road	Emali/Mulala
7) Kavata Nzou-Mukilitwa River-Musalala road-opening and installation of a drift at Mukilitwa river	Ilima
8) Ivingoni - Makutano - Maulu - Nzambani road	Ivingoni/Nzambani
9) Grading of Kiuukuni – Kako road	Kako/Waia
10) Completion of Executive office block-External works	Wote/Nziu
11) Kavuthu - Ilengeni - Ngoto road	Mbitini
12) Construction of Ablution Block - MAP	Wote/Nziu
13) Upgrading of Katulye dispensary	Nzaui/Kilili
14) Upgrading of Syotuvali dispensary	Kalawa
15) Upgrading of Mbui Nzau dispensary, laboratory and maternity wing	Kikumbulyu North
16) Upgrading of Ukia Dispensary	Ukia
17) Upgrading of Katilini dispensary	Mbooni
18) Construction of Makindu Social Hall	Makindu
19) Phase 2 – Construction of Musalala Social Hall	Ukia
20) Upgrading of Musalala dispensary	Ilima
21) Reconstruction of Mwasangombe Dispensary	Emali/Mulala
22) Upgrading of Kalawa Health Centre	Kalawa
23) Upgrading of Kisayani Dispensary	Kikumbulyu North
24) Completion works at kalamba historical site	Nzaui/Kilili/Kalamba

Appendix IV: Authorization Letter

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: D53/CTY/PT/38198/17 Date:25th February, 2021

The Director General,
National Commission for Science Technology & Innovation
P.O. Box 30623-00100,
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR KELVIN RWINGO-REG. NO. D53/CTY/PT/38198/17

I write to introduce Rwingo who is a Postgraduate Student of this University. The student is registered for a MBA degree programme in the **Department of Management Science in the School of Business.**

Rwingo intends to conduct research for a MBA Project Proposal **"Risk Governance and Performance of Construction Projects in Makueni County, Kenya"**

Any assistance given will be highly appreciated.

Yours faithfully,

PROF. ELISHIBA KIMANI
DEAN, GRADUATE SCHOOL

JL/cao

Appendix V: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **365870**

Date of Issue: **18/March/2021**

RESEARCH LICENSE

This is to Certify that Mr.. Kelvin Rwingo Rwingo of Kenyatta University, has been licensed to conduct research in Makueni on the topic: Risk Governance and Performance of Construction Projects in Makueni County, Kenya for the period ending : 18/March/2022.

License No: **NACOSTI/P/21/9476**

365870

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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