



JIMMA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF ACCOUNTING AND FINANCE

The effect of project risk management practices on project success: a case study of Ethiopian orthodox Tewahido church Jimma diocese

BY: TEFAMICHAEL ASSEFA

A Thesis Submitted to *Jimma* University School of Graduate Studies in
Partial Fulfillment of the Requirements for the Degree of Master of Arts
in Project Management & Finance

OCTOBER, 2023
JIMMA, ETHIOPIA

The effect of project risk management practices on project success: a case study of Ethiopian orthodox Tewahido church Jimma diocese

A Thesis Submitted to Jimma University School of Graduate Studies in Partial Fulfillment of the Requirements for the Award of Degree of Master of Arts in Project Management & Finance.

By: Tesfamichael Assefa

Under the guidance of

Main Advisor: Tesfaye Ginbare (Ass. Prof)

Co- Advisor: Mubarek Abajihad (MSc)



**JIMMA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF ACCOUNTING AND FINANCE**

October, 2023
Jimma, Ethiopia

DECLARATION

I, the under signed, declare that this thesis entitled: *“The effect of project risk management practices on project success: a case study of Ethiopian orthodox Tewahido church Jimma diocese”* has been carried out by me under the guidance and advice of **Tesfaye Ginbare (Ass. Prof)** and **Mubarek Abajihad (MSc)**. The thesis is the result of my original work that all sources of materials used were well acknowledged and cited at their respected place in the document. To the best of my understanding, I declared that this study has not been submitted for any degree at any University. Brief quotation from this thesis is allowable without special permission provided that accurate acknowledgment of source is made.

By: **Tesfamichael Asefa**

Signature_____

Date_____

JIMMA UNIVERSITY

ETHIOPIA

ADVISORS' APPROVAL SHEET

JIMMA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

This is to certify that the thesis entitled as “*The effect of project risk management practices on project success: a case study of Ethiopian orthodox Tewahido church Jimma diocese*” was submitted to the school of graduate studies of Jimma university in partial fulfillment of the requirements for the award of the degree of master of science in project management and finance. It has been carried out by **Tesfamichael Asefa** under our guidance and advice. Therefore, we recommend that the student has fulfilled the requirements and can submit the thesis to the department.

Main advisor: **Tesfaye Ginbare (Ass. Prof)**

Signature _____

Date _____

Co-advisor: **Mubarek Abajihad (MSc).**

Signature _____

Date _____

JIMMA UNIVERSITY

ETHEIOPIA

JIMMA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF GRADUATE STUDIES

BOARD OF EXAMINERS

THESIS APPROVAL SHEET

“The effect of project risk management practices on project success: a case study of Ethiopian orthodox Tewahido church Jimma diocese”

Approved by:

	<u>Name</u>	<u>Signature</u>	<u>Date</u>
1. Main Advisor	_____	_____	_____
2. Co-Advisor	_____	_____	_____
3. External Examiner	_____	_____	_____
4. Internal Examiner	_____	_____	_____
5. Chairperson	_____	_____	_____
6. School of Graduate studies	_____	_____	_____

JIMMA UNIVERSITY
ETHEIOPI

Abstract

The purpose of this study was to assess the effect of project risk management practices: risk identification, risk assessment and analysis, risk prioritization and ranking, and risk response and monitoring on the success of Ethiopian Orthodox Tewahid church projects in Jimma diocese. To do so explanatory research design was applied. This study adopted the case study of the EOC diocese which has implemented at 8 projects which constituted 253 workers targeted population. From this, 155 sample respondents were selected through stratified simple random sampling techniques. Both qualitative and quantitative (mixed) research approach was followed to develop data collecting instruments (self-administered structured questionnaires). Both primary and secondary data sources were used for the purpose of this study. The primary data was collected through survey method while secondary data from online sources. Both descriptive (percentages, means, standard deviation) and inferential (correlation and multiple linear regression) statistical analysis tools were applied to describe the effect of explanatory variables (risk identification, risk analysis, risk prioritization, risk response and monitoring) on the dependent variable (project success) and to explore the variation of it due to these explanatory variables. The finding of the study revealed that: risk identification, risk analysis, risk prioritization, and risk response and monitoring significantly affect project success; and hence, 91.5% variation of project success was found to be explained by these explanatory variables while the rest 8.5% of it can be explained by other factors (residual variables) not included in this study. Based on these findings, conclusions were made and possible ideas were recommended. Finally, directions were forwarded for future research probably conducted in the filed on problems related with skills to use the tools of risk management, and impact of awareness creation in risk management on project success.

Key words: *Risk identification, risk analysis, risk prioritization, risk response and monitoring, project success*

Acknowledgment

First of all, may all praise be to my Almighty God the one and only, for blessing me with good health and for giving me the strength, patience and guidance to endure and complete this paper.

I would like to thanks **Tesfaye Ginbare (Ass. Prof)** for his constructive idea during preparation and completion of this study. Also my unreserved thanks go to my Co-advisor **Mubarek Abajihad (MSc)** for his time and advice he forwarded for the successful completion of this paper.

My gratitude also goes to my wife for her day to day support in the course of this work and last but not least I would like to extend my gratitude to my brother for his material and financial support.

I would also like to extend my gratitude to all of my friends who supported me during the completion of this paper. Not the least but, I would like to thank the department of Accounting & finance for their advises and supports through completion of this program.

ABRIVATIONS and ACRONIMS

CB	Commercial Bank of Ethiopia
PRM.....	Project Risk Management
PM.....	Project Management
PMBOK.....	Project Management Body of Knowledge
RM.....	Risk Management
RI.....	Risk Identification
RA.....	Risk Analysis
RP.....	Risk Prioritization
RRM.....	Risk Response and Monitoring
RMTT.....	Risk Management and Techniques
PSF.....	Project Success Factor
EOT.....	Extension of Time
FTA.....	Faulty Tree Analysis
FMEA.....	Failure mode and Effect Analysis

Table of Contents

Abstract	I
Acknowledgment	II
CHAPTER ONE	1
1. INTRODUCTION	1
1.1 Background of the Study	1
1.2.Statement of the Problem.....	3
1.3. Objective of the Study.....	4
1.4. Hypothesis.....	5
1.5. Significance of the Study.....	6
1.6. Scope of the Study	6
1.7.Definition of Terms	7
1.8.Organization of The paper.....	7
CHAPTER TWO	8
2. REVIEW OF RELATED LITRATURES	8
2.1. Theoretical Review.....	8
2.2. Empirical Review	19
2.3. Conceptual Framework.....	201
3. RESEARCH DESIGN AND METHODOLOGY	21
3.1.Research Approach.....	32
3.3. Research Design	22
3.3. Population of the Study.....	22
3.4.Sampling Technique.....	23
3.5.Sample Size	23
3.6.Data Collection	24
3.7.Methods of data analysis	25
3.8.Model specification	26
3.9.Validity and Reliability.....	27
3.10. Ethical Considerations	28

CHAPTER FOUR.....	29
4. RESULT AND DISCUSION	29
4.1. INTRODUCTION	29
4.2. Response Rate	29
4.3. Demographic Profile of respondents.....	30
4.3 Multiple linear regression assumptions	43
4.4. Correlation Analysis.....	48
4.5 Model Summary	50
4.6. Significance Level (ANOVA)	51
4.7. Results of Regression Analysis.....	52
CHAPTER FIVE	54
SUMMARY, CONCLUSIONS AND RECOMMEDATIONS	56
Summary of Findings	56
Conclusions	59
Recommendations	60
References	62
APPENDIX 1	67
APENDEX 2.....	74

List of Figures

Figure: 4.1: Approximated probability distribution of the error terms **56**
Figure: 4.2: Approximated probability distribution of the error terms **57**
Figure: 4.1: Approximated scatter plot distribution of error terms **60**

CHAPTER ONE

1. INTRODUCTION

This thesis was designed to assess the extent of application of project risk management practice on EOC projects and the influence of its practice on project success. Hence, this first chapter of the paper was covered as: background of the study, statement of the problem, objectives of the study, research questions, significances of the study, scope of the study, limitations of the study, organizations of the thesis, and operational definition of key terms used in studying and documenting the thesis. Each of the contents of the chapter were assessed and discussed as follow.

1.1 Background of the Study

Risk management is a concept which becomes very popular in a number of businesses. Many companies often establish a risk management procedure in their projects for improving the performance and increase the profits. Currently the modern business environment is characterized by turbulence and stiff competition. The turbulence and competition is spurred by globalization, technological change, more demanding customers and higher levels of uncertainty which have made management of organizations more challenging than before (Black & Fitzgerald, 2000). In times of increasing global competition, the success of projects becomes more decisive to an organization's business performance. However, many projects still present delays, changes in their scope, failures and, some might be cancelled (Shenhar, 2001). As a general rule, those problems may occur due to inefficient management of project risks. Managing project risks has become fundamental to successful project management (Carbone & Tippett, 2004), however, tools and techniques for risk management that have been developed and used to increase the chances of project success are not yet widespread or generally applied (Kumar, 2002).

All entities face uncertainty, the challenge for management is to determine how much uncertainty it is prepared to accept as it strives to grow stakeholder value. Uncertainty presents both risk and opportunity, with the potential to erode or enhance value. Project risk management

enables management to identify, assess, and manage risks in the face of uncertainty, and is integral to value creation and preservation. Project risks may be defined as undesired events that can range from delay, excessive expenditures, and unsatisfactory project results for the organization, society, or environment (Shenhar, Raz, & Dvir, 2002). According to Project Management Institute's (PMI) and Project Management Body of Knowledge (PMI 2004) a project risk is an event or uncertain condition that, if it occurs, produces positive or negative effects on at least one aspect of the project, such as cost, scope, quality, and so on. Project management includes the processes concerned with conducting risk management planning, identification, analysis, responses, monitoring and control on a project (PMI, 2004).

A project is commonly acknowledged as successful when it is completed on time, within budget, and in accordance with specifications and to stakeholders' satisfaction. Functionality, absence of claims and court proceedings and -fitness for purpose for occupiers have also been used as measures of project success (Takim & Akintoye, 2002) The likelihood of successful project implementation can be increased by identifying the key uncertainties at each stage of the development process and devising strategies for coping with the range of possible results as suggested by Alter and Ginzberg (1978). However, the use of the word -suggest indicates, the effects of risk management are hard to establish. Other studies examined, mainly focus on the risk management processes in projects. Weick and Sutcliffe (2007), suggests risk management contributes to project success because the stakeholders are aware of the fact that there are risks, on the basis of which they adjust their expectations and behavior accordingly.

A project is commonly acknowledged as successful when it is completed on time, within budget, and in accordance with specifications. Functionality, absence of claims and court proceedings and -fitness for purpose for occupiers have also been used as measures of project success (Takim&Akintoye, 2002). EOC Diocese implements projects worth hundred Millions of Birr.

1.2. Statement of the Problem

The question of whether risk management contributes to project success is considered relevant

by many Researchers and practitioners. Delays in project completion, reassessment of project costs, poor quality of implementation, and early termination of major projects are common phenomena in Ethiopia (Alemu Asnakew, 2017), and projects implemented by EOC also face these challenges. Even though risk management is one of the greatest needs in project management, it is recognized that little has been done in this respect (Raz et al., 2002, Ibbs and Kwak, 2000, Zwikael and Globerson, 2006, Zwikael and Sadeh, 2007). Different projects seem to identify and analyze risk in a random way than in an organized and systematic way. Many projects don't seem to make risk management as part of their project management plan too. From the articles and researches done by different practitioners we can see the importance of risk management in projects but there seems to be a problem in the approach projects are managing risk. According to a research done by Yimam (2014), the risk management maturity survey indicates that practically there is little or no risk management practices in projects undertaken in Ethiopia. In line with this, several researches were being conducted regarding project risk management practices in projects undertaken in Ethiopia (e.g. Getachew, 2014; Temesgen, 2015; Frezewud, 2016; Kalkidan, 2017; Bereket, 2017 and others).

Many researchers, such as Tegabu (2015), Fekadesillassie (2015), and Mesfin (2014) have investigated project risk management practices in construction projects and elsewhere, but so far there has been little evidence of success for projects in Ethiopian Orthodox Church. Impact of PRM. Because each project is unique, risks vary from project to project (Gould and Joyce, 2002). Faith based organizations has experienced many challenges in developing new products and upgrading systems. These challenges were caused by the lack of proper mechanisms for

managing projects as most organizations focus on project formulation at the expense of implementation (Musau, 2015). Projects carried out in the construction sector are often highly complex and budget intensive, so mitigating the associated risks is a priority for project managers. Risk management in construction projects includes the benefits of risk management with the barriers and recommendations for overcoming risk management barriers (Tummala et al. 1997; Shen 1997).

Most of the research on project risk management practices conducted in Ethiopia relates to risk

management in construction by taking one or two projects as case studies. This study aims to answer the effect of risk management practices on project success in the faith based sector using risk identification, risk assessment and analysis, risk prioritization and ranking, risk response and monitoring, & risk management tools and techniques as the study variables to see the success of projects.

1.3. Objective of the Study

1.3.1. General Objective:

The general objective of the study is to assess the extent of application of project risk management practice on EOC projects and the effect of its practice on project success.

1.3.2. Specific Objective of the Study

1. To examine the factors influencing the project success in EOCs projects
2. To analyze the extent of application of project risk management practices in EOCs projects
3. To identify the overall project success on EOC's projects
4. To explore the effects of project risk management on project success of EOC Diocese Jimma

1.4. Hypothesis

After reviewing the related literatures the researcher tried to design the following hypotheses for this study

H1: Risk identification is positively and significantly associated with project success.

Risk Identification is the process of determining which risks may affect the project and

documenting their characteristics (PMI page.309)

H2: Risk analysis has positively and significantly associated with projects success.

Risk analysis involves the assessment of the likelihood and impact of risks to determine their magnitude in order that the range of forces that could produce an adverse effect are known, the assets that could be affected are recognized, the features that increase the risk likelihood are identified and the extent to which the risk manifest itself (Kululanga & Kotcha, 2010 and Cervone, 2006).

H3: Risk prioritizing and ranking is positively and significantly associated with project success.

Risk prioritization is itemizing all identified project risks in a particular hierarchy of project risk significance for a particular project (Kululanga & Kotcha, 2010 and Cervone, 2006).

H4: Risk monitoring is positively and significantly associated with project success. Risk monitoring is the process which tracks and evaluates the levels of risk in an organization.

As well as monitoring the risk itself, the discipline tracks and evaluates the effectiveness of risk management strategies. The findings which are produced by risk monitoring processes can be used to help to create new strategies and update older strategies which may have proved to be ineffective (skill maker 2013).

H5: Risk management tools and techniques are positively and significantly associated with project success

1.5. Significance of the Study

A study on project risk management practices are important aspect of development research. Thus, the importance of this research can be pointed out from different beneficiaries view: Firstly, the study provide additional insights to the existing stock of knowledge on the effect of project risk management practices on project success on selected EOC projects by providing empirical evidences in addition to drawing some conclusions and recommendations in identifying wrong project risk management practices followed by providing remedies. Thus, it gives signal to the project risk management practitioners of the organization to take corrective action. And then, it gives the researcher the opportunity to gain deep knowledge in modern practice of project risk management. Finally it helps as a source of reference and a stepping stone for those researchers who want to make further study on the area afterwards.

1.6. Scope of the Study

This study tried to examine the effect of project risk management practice on success of projects by identifying, assessing, analyzing prioritizing or ranking, responding, monitoring and applying tools and techniques of PRM practices to succeed in projects found in *Jimma* town. The scope of the study was limited to selected EOC Diocese projects found in *Jimma* town in considering project management determining variables like risk identification, risk assessment and analysis, risk prioritization and ranking, risk response and monitoring, & risk management tools and techniques. Therefore, the conceptual boundary is limited to the variables listed above in order to characterize their effect on the success of projected on the selected public projects found in *Jimma* town.

1.7. Definition of Terms

Project- is a temporary endeavor undertaken to create a unique product, service or result Project management involves initiating, planning, organizing and managing resources in order to achieve project goals and objectives (PMI, 2004).

Success of a project- is defined by three transaction metrics: time, budget and quality (Khakina , 2006).

Project Risk Management- is the process concerned with conducting risk management through planning, identification, analysis, responses and monitoring and control on a project (PMI, 2004).

Risk response- strategies are the approaches made in dealing with the risks identified and quantified. The strategy(s) most likely to be effective should be selected for each risk (PMI, 2004).

1.8. Organization of The paper

The paper was organized in such a manner that the first chapter presents the back ground of the study, statement of the problem, research questions, objectives of the study, significance of the study, and organization of the paper. The second chapter presents the review of related theoretical, empirical literatures and conceptual frame work. The third chapter focuses on research design and approach, target population, sampling technique and size, data source and method of data collection, validity and reliability, method of data analysis, description of the study variables and ethical consideration. The fourth chapter presents and focuses on data presentation and analysis. The last chapter focuses on conclusion, and recommendations forwarded by the researcher

CHAPTER TWO

2. REVIEW OF RELATED LITRATURES

The purpose of this chapter in relative to the study is to review both theoretical and empirical literatures that related with attaining the objectives of this this study. Hence, this chapter introduces the review of theoretical literature relating to project risk management and success of projects. It provides a critical look at the work that has been done by other researchers which is related to this study.

2.1. Theoretical Review

2.2.1. Project Risk Management

Risk management has become an important part of the management process for any project. Various theories and models have been advanced on the subject of risk and decision making under uncertainty. When dealing with risks, the improvement of a project should also be taken into account; for example to perform the project with fewer resources or to have an advantage from an unexpected window of opportunity. Risks are at the very core of the business: risks and opportunities are linked; there are no opportunities without risks related to them. Thus risks actually raise the value of a project; usually higher risks bring higher opportunities.

A project is a temporary endeavor undertaken to create a unique product, service or result Project management involves initiating, planning, organizing and managing resources in order to achieve project goals and objectives (PMI, 2004). Jaafari (2001) defines risk as exposure to loss/gain, or the probability of occurrence of loss/gain multiplied by its respective magnitude. The PMI (2004) defines risk as an uncertain event or condition that, if it occurs, has a positive or negative effect on a

project's objectives.

Project Risk Management includes the process concerned with conducting risk management through planning, identification, analysis, responses and monitoring and control on a project (PMI, 2004). The discipline of project risk management has developed over the recent decades as an important part of project management. Several researchers, Miles and Wilson (1998) and Mullins et al. (1999), argue risk as being an exposure or a probability of occurrence of a loss.

The interest on how risk management contributes to project success goes back as far as the 1970's with Alter and Ginzberg (1978), whose article suggests that the likelihood of successful project implementation can be increased by identifying the key uncertainties at each stage of the development process and devising strategies for coping with the range of possible results (Alter and Ginzberg, 1978). However, the use of the word "suggest" indicates, the effects of risk management are hard to establish.

A number of other studies have been done in PRM and PM especially include; Bakker et al (2009) in a study on whether risk management contributes to IT project success concludes that that risk management can only be effective in specific project situations and that knowledge of the risks alone is not enough to contribute to project success. Furthermore, it would be interesting to combine the relation found by Cooke-Davies (2000) between risk management planning and a timely delivery of the project with the work of Weick and Sutcliffe (2007), who discuss awareness creation and attention shaping as conditions for stakeholder behavior in uncertain situations. In this view, risk management contributes to project success, because the stakeholders are aware of the fact that there are risks, on the basis of which they adjust their expectations and behavior accordingly.

According to Kutsch and Hall (2005) knowledge of the risks does not automatically imply that this knowledge is used for managing those risks. That less is known about what happens inside the risk management process; what risk management practices are used within a project, which stakeholders are participating in these practices, how these risk management practices influence stakeholders, and how these practices influence project success. These are relevant questions, to which the risk management approach so far has not provided satisfactory answered, and neither does it give a truthful representation of how stakeholders actually behave.

Other studies examined, mainly focus on the risk management processes in projects. For instance, Scgismundo and Miguel (2009) sought to investigate Failure Mode and Effect Analysis (FMEA) in the context of risk management in new product development. Raz et al (2002) in their study on risk management, project success and technological uncertainty in Israel concluded that risk management was still in its infancy in projects management and the since there are various risk management tools, further research was needed to find what works best in what circumstances and environments.

2.2.2 Project Risk Management Practices

Recent development in the field of project risk management has enabled better understanding of the overall risk management concept by introducing risk management processes nine phases (Chapman, 1997), or five phases as per Tummala and Burchett (1999) instead of the three phases of identification, analysis, and mitigation. Moreover, the development has also gone into a more detailed level in identifying, estimating, and responding phases (Artto et al., 2000). Several researchers Shen (1997), March and Shapira (1987), Uher and Toakley (1999), Pender (2001) and Williams (1999), argue that today's methodologies of risk management are not sufficient for industrial use.

Therefore, risk management philosophy and framework must be capable of quickly reevaluating the project's options against surprise developments and provide a systematic basis for its re-structuring (Jaafari, 2001). PMBOK (2004) identifies 6 steps in project risk management which include, risk management planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response planning and risk monitoring and control. Dey (2000) identified 4 steps in managing project risks in the public sector to include identifying risk factors; analyzing their effect; responding to risk; and controlling the responses.

Other researchers (Wang and Chou, 2003; Baker et al., 1999; Kangari, 1995; Shen et al., 2001; Chio et al., 2004; Shang et al., 2005) identified the following process of project risk management; risk

identification; risk analysis, systems risk approach, risk exposure, risk prioritization, risk response, risk contingency planning, risk monitoring, risk continuous reassessment, and the application of total quality management tools.

2.2.3 Risk Identification

Risk identification entails understanding and determining the potential unsatisfactory outcomes likely to affect a project. Risk identification is associated with the use of the following techniques: expert judgment, brainstorming, Delphi technique and interviews. (Kululanga & Kotcha, 2010). In risk identification the project team initially considers a range of potential events - stemming from both internal and external sources.

2.2.4. Risk Assessment and Analysis

Risk analysis involves the assessment of the likelihood and impact of risks to determine their magnitude in order that the range of forces that could produce an adverse effect are known, the assets that could be affected are recognized, the features that increase the risk likelihood are identified and the extent to which the risk manifest itself. Tools associated with this stage include the use of probability/impact matrixes, strength/weakness/opportunity/threat analysis, and top ten risk item tracking technique (Kululanga&Kotcha, 2010 and Cervone, 2006).

2.2.5 Risk Prioritization and Ranking

Risk prioritization involves itemizing all identified project risks in a particular hierarchy of project risk significance for a particular project (Kululanga&Kotcha, 2010 and Cervone, 2006). Risks are assessed both quantitatively and qualitatively and measured in terms of impact and likelihood. Impact is the potential loss should the risk materialize. Likelihood (risk exposure) is the probability that an adverse event, which could cause materialization of the risk, may occur.

According to Lansdowne (1999), impact can be prioritized using a five-point scale for evaluating risk impact: *Critical risk* - five points - would cause program failure, *Serious risk* - four points - would cause major cost or schedule increases and secondary requirements may not be achieved, *Moderate risk* - three points - would cause moderate cost/schedule increases; important requirements would still be met, *Minor risk* - two points - would cause only small cost/schedule increases and *Negligible risk* - one point - would have no substantive effect on cost or schedule.

The second dimension, probability, is based on Kendrick's (2003) rubric of. *High probability* - five points - likely occurrence with a 50 percent or greater chance, *Medium probability* - three points - unlikely with a 10 percent to 49 percent chance of occurrence and *Low probability* - one point - very unlikely with a 10 percent or less chance of occurrence. The third dimension, entitled discrimination and based on criteria from Kendrick (2003), is unique within simple decision-based models. It provides an additional perspective that is designed to gauge the impact of the risk to the overall framework of the project, rather than looking at each risk as an independent variable within the project. The levels of discrimination are: *High effect* - one point - project objectives are at risk, this risk will result in a mandatory change to scope, schedule, or resources, *Medium effect* - three points - project objectives will be achieved, but significant re-planning will be required and *Low effect* - five points - no major plan changes will result; the risk is an inconvenience or can be handled with minor overtime work.

With each risk evaluated in the context of the three dimensions, a point value can be assigned to each risk using the formula: $Overall\ risk\ factor = (Probability \wedge impact) / discrimination$: All of the project risk factors can then be ranked by severity of risk and, therefore, overall potential impact on the project. (Cervone, 2006)

2.2.6 Risk Management Response Strategies

Risk response focuses on the identified and quantified project risks. Risk responses include, eliminating the risk by avoiding it usually by treating the root causes; accept the risk but have a contingency plan in place; shift risk to a third party by transferring it, for example, through insurance; and reducing the likelihood of its occurrence by mitigation (Cervone, 2006). Risk

response strategies are the approaches made in dealing with the risks identified and quantified. The strategy(s) most likely to be effective should be selected for each risk (PMBOK, 2004). There are 3 typical strategies which deal with negative risks or threats and 3 strategies which deal with positive risks or opportunities.

2.2.6.1. Strategies for Negative Risks or Threats

The strategies to deal with threats in projects include avoiding, transferring and mitigation. Risk avoidance involves changing the project management plan to eliminate the threat posed by the adverse risk, to isolate the project objectives from the risk impact or to relax the project objective that is in jeopardy such as extending the schedule or reducing the scope (PMBOK, 2004). An example of avoiding risk could be avoiding use of untested third party components in the software design or avoiding inclusion of an inexperienced resource the project team.

Risk transfer requires shifting the negative impact of a threat, along with ownership of a response to a third party. Transferring the risk gives another party responsibility for its management but does not eliminate it, in most cases it involves payment of a risk premium to the party taking on the risk (PMBOK, 2004). Transference tools include use of insurance, performance bonds, fixed cost contracts, warranties, defect liability periods and guarantees. Risk mitigation involves reduction in the probability and/or impact to an acceptable level. Reduction in probability of occurrence would reduce the likelihood of its occurrence and reduction in impact would imply a lesser loss if the risk event occurs (PMBOK, 2004). Examples of risk mitigation include prototyping, adopting less complex processes, choosing a more stable supplier, conducting more tests and designing redundancies into a system.

2.2.6.2. Strategies for Positive Risks or Opportunities

The strategies to deal with potentially positive impacts on projects include Exploiting, Sharing and Enhancing. Risk exploiting seeks to eliminate the uncertainty associated with a particular upside risk by making the opportunity to happen (PMI, 2004). An example could be a situation where the seller will pay an incentive fee if work is completed a week ahead of the completion deadline or assigning

more talented resources to the project. On the other hand Risk sharing involves allocating ownership to a third party who is able to best capture the opportunity for the benefit of the project (PMBI, 2004). It includes sharing the fruits of an opportunity with a third party because you do not have the capability to exploit it alone. Examples include joint ventures, teams or special purpose companies. Risk enhancement modifies the size of the opportunity by increasing the probability and/or positive impacts by reinforcing its trigger condition or key drivers (PMBI, 2004).

2.2.7 Risk Monitoring

Risk monitoring and continuous reassessment involves monitoring known risks, identifying new risks, reducing risks, and evaluating the effectiveness of risk reduction. The main output at this stage has been associated with corrective actions and project change requests. Continuous reassessment involves periodic reviews of project risk status to identify new risks, and to examine changes in probabilities or impacts and changes in the contractor's project risk responses (Kululanga & Kotcha, 2010 and Cervone, 2006).

2.2.8 Sources of Projects Risks

Projects risks arise from internal or external environment. According to a global research conducted by the Muto Performance Corp. 2010, the top 10 risks or reasons for project failure include; changes to project scope (scope creep); inadequate resources (excluding funding); insufficient time to complete the project; critical requirements are unspecified or missing; inadequate project testing; critical project tasks are delivered late; key team members lack adequate authority; the project sponsor is unavailable to approve strategic decisions; insufficient project funding and key team members lack critical skills.

Indeed (2022) identified 10 sources of project risks as detailed according to the following lists

1. Technology risk

The technological aspect of running a project is a complex deliverable because there is a high turnover of new and advanced technologies. The tech aspect of a project poses a critical threat to

data security, organization services, compliance and information security. Risks associated with technology are more challenging because implementing new IT programs often requires fresh personnel training and software acquisition. There are also other technological-related risks like service outages that might lead to delays and project failure.

2. Communication risk

Effective and timely communication is a significant work ethic that you must strictly observe when you are in charge of a project. Setting up meetings with stakeholders, such as project donors, helps you track any changes, reassign tasks and foster a cohesive team environment. With all the communication channels and gadgets at our disposal, sometimes team members neglect the critical components of effective communication, leading to loss of data or misinformation and eventual project disruption.

3. Scope creep risk

Uncontrolled and unauthorized change to the initial intended project scope may lead to the extra cost of additional features, products or functions. Almost all projects face this risk, and sometimes it poses an irreversible challenge because some of the added functions are significant to the project and desirable to the project's success.

4. Cost risk

A shortage or mismanagement of project funds resulting from an inflated budget or other constraints is a threat to the project's completion. When the project cost is higher than the budgeted funds, the risk might shift to other operations and workforce segments. The reduction of the funds may also contribute to an occurrence of a scope risk.

5. Operational risk

A project may stall or terminate if there is a poor implementation of critical operations and core processes such as production or procurement. The risks could result in a direct or indirect loss owing to inadequacy or failed qualitative, quantitative or strategies. Depending on the project type, operational risks are: IT system risk, human and process direct implementation risk, Human and process indirect implementation risk, financial capacity risk.

6. Health and safety risk

Health and safety is a type of risk that can compromise a company's compliance rules. An organization should have its health and safety standards monitored and evaluated regularly to identify potential risks that can lead the company to losses or fines. The risk can also lead to staff or customers' health complications where a company's reputation might be at stake. The management is responsible for establishing continuous health and safety risk monitoring in the company premises and its products or services.

7. Skills resource risk

Leveraging on internal staff is a potentially high-project risk because sometimes the project activities are staggered in different waves at various locations, requiring in-house personnel attendance. The overlap of the waves becomes a potential distress source. Staff incompetence in various project divisions is another risk that may contribute to the additional cost of personnel retraining or transfers.

8. Performance risk

When a project is unlikely to achieve the results as intended, there is a perceived performance risk. The risk has an inherent impact on the overall performance of the business. Such a problem may lead to the additional need for financing, a likely penalty for nonperformance and it may also leverage the competitors' performance.

9. Market risk

When a project fails to meet the stated results, market risk is likely to occur. Competitors might take the advantage to cripple the business and eliminate it from the market. Another market risk could occur in commodity and foreign market trends, which might not favor the project's initial estimates. Liquidity, credit and fluctuation of interest rates also pose as a potential market distracter to the project's product sales.

10. External hazards risk

A likely adverse event beyond the control of the project management is a potential risk. Such risks manifest in various types and forms, including terrorism, storms, floods, vandalism, earthquakes and

civil unrest. A project may stall or discontinue when such events occur. By employing appropriate monitoring measures, organizations can prevent heavy damage or losses resulting from an unforeseen external hazard.

2.2.9. Risk Management Tools and Techniques

Raz et al (2002) identifies 5 PRM practices which include; systematic risk identification through documentation reviews and information gathering techniques such as interviews and SWOT analysis; probabilistic risk analysis, including the assessment of likelihood that a risk will occur and the consequences if it occurs; detailed planning for uncertainty to reduce the probability and/or the consequences of an adverse risk event to an acceptable threshold; methodic trade-off analysis resulting in a detailed risk response plan and appointing a risk manager. PMBOK, 2004 identifies tools and techniques for risk identification to include; documentation reviews, interviewing, brainstorming, cause and effect diagrams, checklist analysis, Failure Mode and Effect Analysis (FMEA) and The fault Tree Analysis (FTA). The output of these techniques is the risk management plan and the risk register.

2.2.10. Project Success

A project is commonly acknowledged as successful when it is completed on time, within budget, and in accordance with specifications and to stakeholders' satisfaction. Functionality, profitability to contractors, absence of claims and court proceedings and -fitness for purpose for occupiers has also been used as measures of project success (Takim&Akintoye, 2002). The success of a project is also traditionally measured by time, budget, and requirements criteria. Despite the fact that this manner of measuring project success is currently subject to widespread criticism, this criteria is still often used in publications on project success. The criticism refers to three points, which are related to the assumptions that this definition is based on: the amount of time, the budget, and the project's requirements can be set at the beginning of the project; the project's success is the same for each project stakeholder; the project's success can be determined at the moment the project has produced its deliverables. Setting time and budget limits and defining the requirements always take place at

the beginning of the project, when uncertainty is at its maximum (Pinto, 2007), and it is practically impossible to set realistic limits and goals.

According to Chandra (2002), a project is said to succeed when it's in line within the trinity of time, budget and specification constrains. Success factors in a project include among other things, proper feasibility studies, and commitment to project methodology, planning, effective monitoring and evaluation. The primary focus is on the results, with time and cost overruns and project sickness (ability or inability of the project to deliver desired results) being the major performance indicators (Block & Davidson 2001). Obviously, determining whether a project is a success or failure is intricate and ambiguous. There are three main reasons among which Belassi and Tukel (1996) pointed out the first two. First, as mentioned by de Wit (1988) and Pinto and Slevin (1989), it is still not clear how to measure project success since project stakeholders perceive project success or failure differently. Second, lists of success or failure factors vary in numerous studies. According to a study by Muto Performance Corp, 2010 the top 10 reasons for projects failure include; changes to project scope (scope creep); inadequate resources (excluding funding); insufficient time to complete the project; critical requirements are unspecified or missing; inadequate project testing; critical project tasks are delivered late; key team members lack adequate authority; the project sponsor is unavailable to approve strategic decisions; insufficient project funding and key team members lack critical skills.

The third reason, as also remarked by de Wit (1988), is that for each project stakeholder, the objectives and their priorities are set differently throughout the project life cycle and at different levels in the management hierarchy. It is necessary that distinctions be made between project success and project management success and between project success and project performance. It is necessary that distinctions be made between project success and project management success and between project success and project performance. Previous studies (Munns and Bjeirmi, 1996; Cooke-Davies, 2002) clarified that project success is measured against the overall objectives of the project while project management success is measured against cost, time and quality/performance. Cooke-Davies (2002) noted that the distinction between project success - which cannot be measured until after the project is completed, and project performance - which can be measured during the

life of the project is also important. However, Baccarini (1999) insists that project success is measured both in terms of product (including facilities) success and project management success.

The objectives of budget, schedule, and quality are key measures that contribute to the goal of project success. Chandra (1995) pointed out that project success is measured against the overall objectives of the project while project management success is measured against cost, time and quality/performance. According to Khakina (2006) the success of a project is defined by three transaction metrics: time, budget and quality. Success will not only focus on completion but completion within the time, budget and quality constrains. Chen and Chen (2007) identified different sets of success for different project objectives. He pointed out that, these factors contribute to different facets of project success. These success factors are planning effort in project designing, planning during construction, goal commitment, project team motivation, technical capabilities and scope. Regarding this, most projects in Ethiopia face various challenges including delays in completion, upward revaluation of project costs, poor quality workmanships and premature termination of the projects.

2.2. Empirical Review

The literature reviewed in this study highlighted a number of studies that have been done on project risk management. Internationally, researchers such as Alter and Ginzberg (1978), suggests the likelihood of successful project implementation can be increased by identifying and managing projects risks. Other researchers who focused project risk management process include Chapman (1997), Tummala and Burchett (1999), Arto et al. (2000), Shen (1997), March and Shapira (1987), Uher and Toakley (1999), Pender (2001) and Williams (1999) and Jaafari (2001) most of who argue that today's methodologies of risk management are not sufficient for industrial and that risk management philosophy and framework must be capable of quickly re- evaluating the project's options against surprise developments and provide a systematic basis for its re-structuring.

Though a number of scholars like TemsegenTegabu (Addis Ababa University, 2015), Tsion Fekadesillassie (Addis Ababa University, 2015) and Addis Mesfin (Addis Ababa University, 2014)

have explored project risk management practice on construction projects and others, as yet, there does not appear to be any study that has considered the influence of PRM on the success of projects in Ethiopian banks. Majority of the studies that are done in Ethiopia regarding project risk management practice are done on construction risk management. The studies reviewed laid more emphasis on particular functional silos. And as such, these studies were rather limited in scope. As yet, there does not appear to be a study that has covered the concepts of project risk management practices, application of these PRM practices in projects and the influence of these practices to project success.

2.3. Conceptual Framework

The study was guided by the concept that project risk management practices including risk management tools and techniques influence the success of a project. These practices include carrying out comprehensive risk identification, risk analysis, risk ranking, and risk response risk. This is achieved by efficient and effective application of risk management tools and techniques to influence the success of the project.

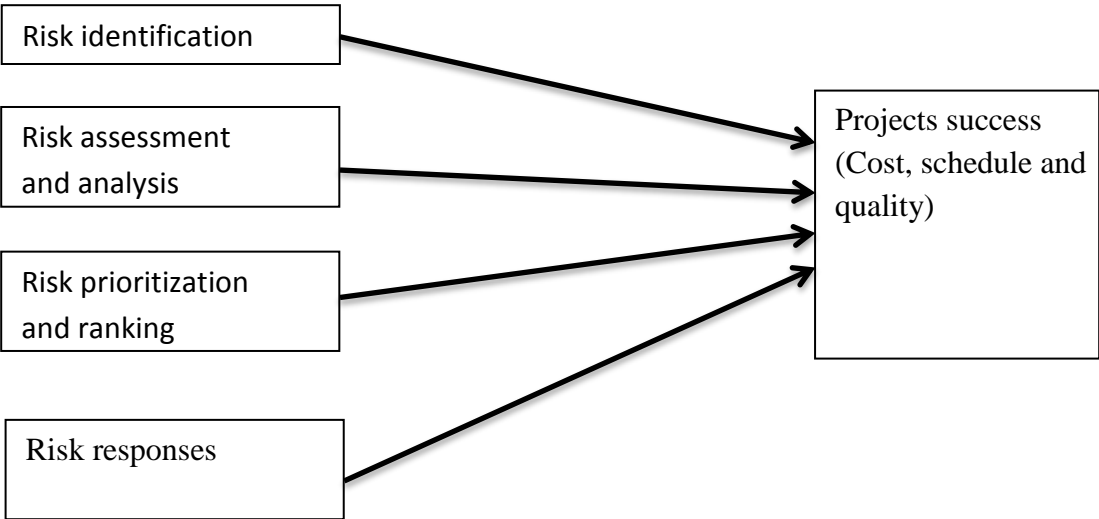


Figure 2.1: Conceptual framework of the study
Source: Own literature review

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

This chapter stretches an outline of the research design and methodology that were used in the study. Therefore, research design, target population of the study and sampling procedure and sample size determination, data source and collection method, method of data analysis, model specification, and reliability of the instrument and description of study variable was discussed respectively.

3.1. Research Approach

Both qualitative and quantitative approaches were designed to investigate the problem under the study. Employing mixed approach uses to neutralize the biases of applying any of a single approach (Creswell, 2008). Qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. And also it involves emerging questions and procedures; data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data (John, Creswell, 2009). On the other hand, quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures. So, the researcher used these quantitative and qualitative approach helps us to investigate the effect of project risk management practice on project success on selected EOC Diocese projects found in Jimma area.

3.2. Research Design

The study used both descriptive and explanatory approach through surveys to assess the effect of project risk management practice on project success on EOC Diocese projects found in Jimma town. Hence, explanatory research design was used to assess the effect of risk management tools on project success in the targeted study area. Because, the purpose of explanatory research is to assess the relationships between independent and dependent variables. A correlation research study allows the researcher to describe in quantitative terms the degree to which two or more variables are related. While descriptive surveys were designed to see the effect of project risk management practice on project success on EOC projects found in Jimma town. Descriptive studies present facts, existing conditions concerning the nurture of persons, a number of objectives or class of events and may entail procedures of enumeration and induction analysis, classification details and measurement (Creswell ,2014).

3.3. Population of the Study

A population is the entire group of individuals, events or objects having common evident features. A target population is that population to which a researcher wants to take a broad view of the results of a study (Coolican, 2013). The projects selected on the basis of their frequency in under taking different contracts management practices relative to other organizations found in Jimma town and this organization comprises total of 253 professional employees having direct and indirect concern and relation with their office project management practice and its project success. The sizes and scope of these major projects have varied from projects to projects. Over its establishment EOC Diocese's project office has implemented different projects. The projects are implemented by various project implementation teams who have consistently used various project risk management practices. These projects have recorded varied successes in meeting the project objectives. In project office of the organization there are 253(Two Hundred Fifty Three) employees. (Source: *Jimma town EOC Diocese HR*).

3.4. Sampling Technique

The study used stratified simple random sampling techniques in order to study the effect of Project risk management practice on Project success on selected EOC Diocese projects found in Jimma area. Stratified simple random sampling technique greatly enhances the likelihood of the proper representation of strata in the sample. Paula et al. (2001) noted that, under stratified random sampling the researcher can have more precise information inside the sub populations about the variables of the researcher's study. This leads the researcher to choose stratified random sampling for the current study.

3.5. Sample Size

Sampling is the process of systematically choosing a sub-set of the total population that the researchers are interested in surveying. Regarding to these Paula et al. (2001) noted that, sampling refers to drawing a sample or selecting a subset of elements from a population. The design of a sampling strategy is an important issue for a research study and it can be a powerful tool for accurately measuring opinions and characteristics of a population. The usual goal in sampling is to produce a representative sample. As it is stated by Paula et al. (2001), a perfect representative sample would be a mirror image of the population from which is selected. Depending up on Taro Yamane (1973) the sample size was calculated as follows to represent the total population (155), which is the total number of professional employees managed under the selected eight projects found in Jimma area at 95% confidence level. It is calculated as follows:

$$N = 253, \quad n = \frac{N}{1+N(e)^2} \quad n = \frac{250}{1+250(0.05)^2} = 155 \quad \dots\dots\dots 3.1.$$

Where, n=Sample size, N= Population, e= standard error

Therefore the total sample size representing the universe or population is 155 employees which is used to assess the effect of project risk management practice on Project success on selected EOC Diocese projects found in Jimma area. For the convenience of the study the calculated 155 number of samples were collected from professional employees working and managed under the selected eight projects found in Jimma town as follows in the following table.

Table:-3.1. Number of Professional employees, their organization and Sample size from each stratum

S.No	Name organization	Number of Employees	Proportionate sample size from stratum $n_h = (N_h/N_s)n$
1	Jimma Hagere Sibket Office	62	$(62/253)*155= 38$
2	Jimma Hagere Sibket Abune Estifanos Building Expansion Project	36	$(36/253)* 155= 22$
3	Mahibere Kidusan Jimma Center	26	$(26/253)* 155= 16$
4	Tesfa Tewahido School Project	43	$(43/253)* 155= 26$
5	Dejochish Ayizegu Project I	12	$(12/253)* 155= 7$
6	Dejochish Ayizegu Project II	18	$(18/253)* 155= 11$
7	Debresahil Kidus Mikael Church	24	$(24/253)* 155= 15$
8	Felege Tibebe School Project	32	$(32/253)* 155= 20$
	Sum total	253	155

Source: personal computation of the researcher from

Sample size from each stratum, was calculated by number of employees in relative to the total number of employees found , managed and representing the eight selected projects found in Jimma area and sample for each stratum is obtained by multiplying sample size (155) which is obtained from the universe or total population.

3.6. Data Collection

Both primary and secondary sources of data/information were used for the purpose of conducting this particular proposal. Primary data is the information that the researcher finds out by him/herself

regarding a specific topic having the likely advantage that the data is collected with the research's purpose in mind, whereby ensuring the resulting consistency of the information with the research questions and purpose (Biggam, 2008). The primary data were gathered through a well-developed questionnaire from the entire population of the selected project management.

As far as the secondary source is concerned, journals, books, procedures and guidelines, circulars and policy papers, annual reports, magazines and working papers, produced by EOC Diocese were used to extract any sort of essential information to strengthen the study findings. Primary data was collected using self-administered structured questionnaire developed based on review of literature on project risk management and project success. Each section of the questionnaire contains both closed and open ended questions. For most of the sections, those selected samples were invited to score their responses using a Likert-style rating scale, with a score of 1 to 5. The likert scale was used since it is a psychometric scale commonly used in research that employs questionnaires.

3.7. Methods of data analysis

Once the questionnaires were collected by the researcher, it was coded and feed into the SPSS computer software for analysis. Initially screening of data was done using sort functions. Quantitative data collected was analyzed using descriptive statistical techniques such as frequencies, mean, standard deviation. Qualitative data were categorized and reported in emergent themes. Measures of central tendency gives expected summary statistics of the variables being tested. The findings were presented by the use of frequency distribution tables that gave record of the number of times a score or a response occurs. Descriptive statistics gavethe profile of the target population, i.e. frequencies and percentages, means, standard deviations, whereas inferential statistics to be used were ANOVA/T test, Pearson correlation and the Multiple Regression Analysis Model so as to determine effect of project risk management practice on project success. Multiple regressions and correlation as a form of inferential statistical analysis was used in determining the relationship between the dependent and independent variables

3.8. Model specification

To analyze the conceptual framework several independent variables were entered into the multiple regression equation. This section reports the results of multiple regressions conducted. Multiple regression analysis is –an analysis of association in which the effects of two or more independent variables on a single dependent variable are investigated simultaneously (Zikmund et al., 2010, p.584). According to Hair Jr. et al. (2007), Multiple Regression Analysis, a form of general linear modeling, is an appropriate statistical technique when examining the relationship between a single dependent (criterion) variable and several independent (predictor) variables. They explained that idea of using multiple regression analysis is to use the independent variable whose values are known to predict the single dependent value selected by the researcher. In this study step-wise multiple regressions were conducted in order to examine the relationship of risk identification, risk assessment, risk ranking, risk response and risk management practice with project success. The study thus developed a multiple regression model for the relationship between these practices with the following variables;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \epsilon \dots\dots\dots 3.2$$

Where Y is the dependent variable (project success), β_0 , β_1 , β_2 , β_3 , β_4 and β_5 - are parameters,
 X_1 is the risk identification independent variable,
 X_2 is the risk analysis independent variable,
 X_3 is risk ranking independent variable,
 X_4 is risk response and monitoring independent variable; and
 X_5 is RM tools and techniques independent variable and ϵ is the error term of the equation.

3.9. Validity and Reliability

3.9.1. Validity tests

Harper and Thompson (2011) note that in order for data collection tools to provide useful results, the questions must be both valid and reliable. According to Creswell (2009), the usual procedure in assessing the content validity of a measure is to use a professional or expert in a particular field which helps in discovering question content, correction in the wording and the sequencing problems before the actual study as well as exploring ways of improving overall quality of study. For the sake of this study, the researcher used the opinions of experts in the field of study especially university research instructors specifically the main advisor and the co-advisor to establish the validity of the research instrument. Also the researcher used opinions of experts of the organization for the questionnaires whether they are correctly processed or not. This facilitated the necessary revision and modification of the research instrument thereby enhancing validity.

. 3.9.2. Reliability tests

Reliability of the data collection instrument is the consistency of measurement and frequently assessed using a test–retest reliability method (Cooper and Schinder, 2014). Reliability enables the researcher to identify the ambiguities and inadequate items in the research instrument; where the instrument reliability is the dependability, consistency or trustworthiness of a test. The scores were tested using Cronbach’s Alpha for the data to be reliable for those questionnaires raised by likert scale. According to George &Mallery (2003), it is recommended that if a Cronbach’s coefficient of measurement scale exceeds 0.70 is acceptable as an internally consistent so that further analysis can be carried unless it is unacceptable. They indicated the alpha in the following rule of thumb concerning reliability coefficient: Alpha > 0.9 – Excellent, Alpha > 0.8 – Good, Alpha > 0.7 –

Acceptable, Alpha > 0.6 – Questionable, Alpha > 0.5 – Poor and Alpha < 0.5 – Unacceptable. Accordingly the result of this study is reliable enough because the Cronbach Alpha is 0.857.

Table 3.1 Reliability of measurement instrument Summary (Cronbach’s Alpha)

Category of questionnaire	Cronbach’s Alpha	No of Items
Risk Identification	.819	6
Risk Analysis	.797	4
Risk Prioritization	.764	4
Risk response and monitoring	.893	13
Risk management tools	.768	3
Projects Success	0.866	3
Total	0.857	33

Source: *Own computation from survey data, 2023*

3.10. Ethical Considerations

As the researcher indicated in the questionnaire, all employees were assured that all data of this study was used for academic purpose and analyzed secretly. And also the researcher got permission from the concerned body like the manager of the organization for their willingness to give necessary data for the researcher. After the managers allowed access to different data of the organization, the researcher took responsibility not to do bias or faulty action and to keep their internal secrets in time of data collection. As per the promises made to the respondents, the entire necessary attempts were made to carry out data gathering and analysis in accordance with the generally accepted ethical concerns.

CHAPTER FOUR

4. RESULT AND DISCUSION

4.1. INTRODUCTION

In this chapter the analysis of the data was presented. The data was analyzed by using descriptive method; by measuring numerical values and converting them to percentages. The analysis process was done in such a way that ‘disagree’ responses were merged with ‘strongly disagree’. Likewise, ‘strongly agree’ responses were analyzed together with ‘agree’ responses. Therefore, results are expressed cumulatively as a negative and positive response respectively while the neutral results are expressed as they are. After conducting the descriptive analysis, inferential analysis was used to show results. Data analysis was verified against the literature reviewed and recorded electronically according to the variables being investigated. The primary data collected using stratified sampling for the selected projects and area office in a form of questionnaire had three sections. The first section contained items related to respondents’ biographical data, the second section was composed of items of dependent and independent variable which is selected from project success like risk identification, analysis, prioritization, response and management. Section three revolves around general question regarding project success practice.

4.2. Response Rate

The sample population consisted of area office workers, managers and employees in the selected projects of EOC Diocese, Jimma area. A total of 155 questionnaires were distributed, data was successfully collected from 143 respondents representing a response rate of 92.25% (Table 4.1). Fowler (1993) recommends 75% as a rule of the thumb for minimum responses.

Table 4.1 Response Rate of Questionnaires

Responses	No of Questionnaires	Percentage
Administered questionnaire	155	100.0%
Unreturned	12	7.75%
Functional questionnaires	143	92.25%

Source: Own Survey, 2023

4.3. Demographic Profile of respondents

4.3.1. Gender

It was felt important to identify the gender of the respondents in order to know how representative sample was and to observe their perception about the project risk management practice towards project success in light of gender. In view of this, respondents were asked to indicate their gender and also gender distribution is one indicator on whether data collected is genuine. The distribution in this study indicates what is expected hence gives credibility to the data. As it is listed below in chart 4.1, it was found 78.32% of the respondents were male while out of 143 about (31) 21.68% of the respondents were females. This tentatively implies that majority of the employees are male.

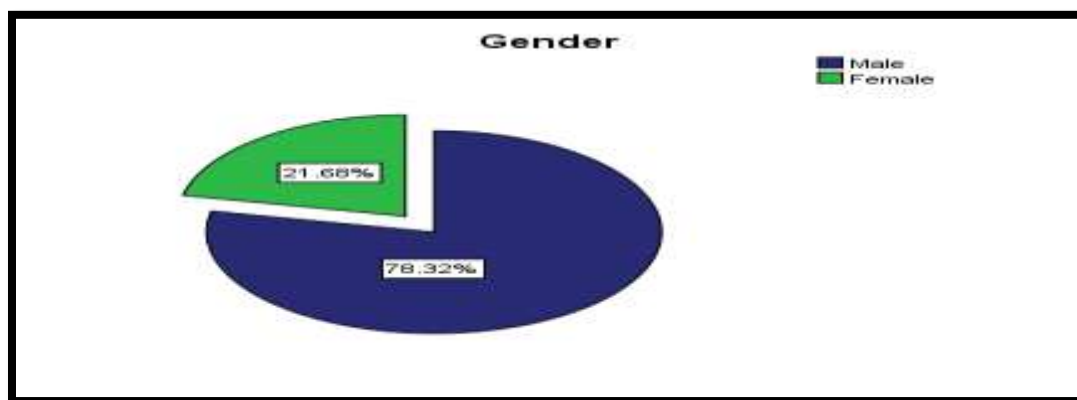


Figure: 4.1. Chart of respondents' gender

Source: Analysis of won survey data, 2023

4.1.2. Age Distribution of Respondents

With reference to the age group of the respondents, 14% (20) of them are in the range of under 25 year, 74.1% (106) of them are in the age bracket of 25 to 35 years , and the remaining 11.9% (17) of the respondents are between 36 to 45 years of age. Based on the results, majority of the respondents is inside the age range of 25 to 35 years which is 106 respondents having 74.1%. The table 4.2 indicates the expected age distribution in the selected organization where majority of the workforce falls under productive age group. This data shows that feedback received was credible.

Table 4.2 Age Distribution of Respondents

Age category					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 25	20	14.0	14.0	14.0
	25-35	106	74.1	74.1	88.1
	36-45	17	11.9	11.9	100.0
	Total	143	100.0	100.0	

Source: SPSS output of own survey data analysis, 2023

4.1.3. Service year of respondents or seniority In EOC Diocese

Service year of the respondents was put into account by the researcher. Based on the results, 46.2% (66) of the respondents have worked for more than five years in the organization, 21.7% (31) of the respondents have an experience of more than three years and less than five years, 30.1% (43) of the respondents have worked for one up to three years and the remaining 2.1% (3) of them for of the respondents have worked in the organization for less than a year. Therefore, the result showed that the majority 46.2% (66) of the respondents have a work experience of more than five years in the organization. Since, most of the respondents have worked in the firm for over five years they provided responses based on a wider knowledge base of the company’s operations as they are

experienced the organization’s risk management practices for more than five years. This indicates they were being able to respond to the question items appropriately.

Chart4.2. Seniority of respondents

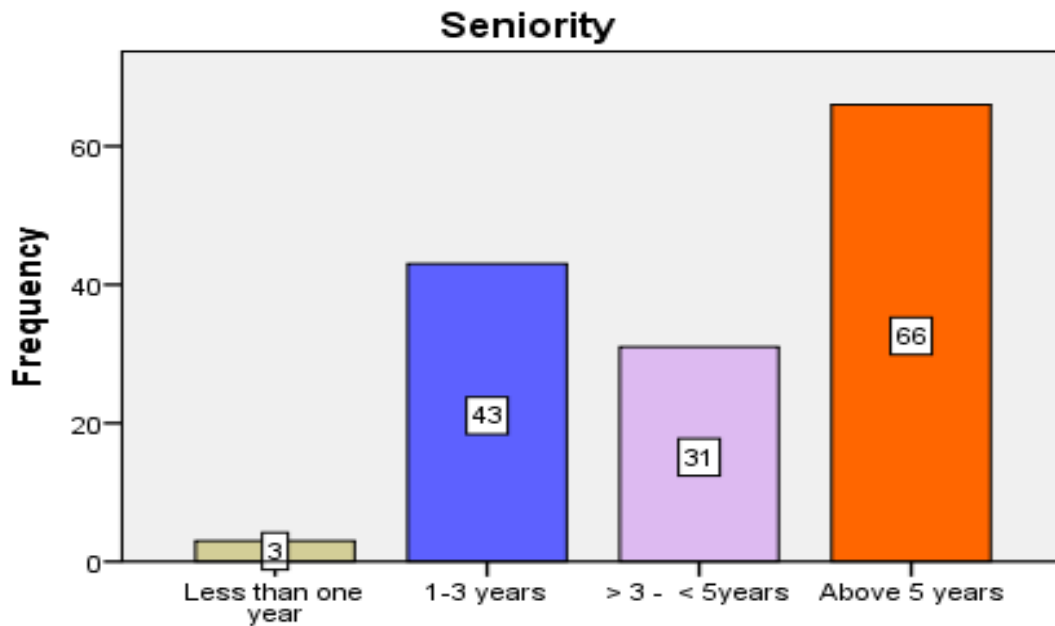


Figure: 4.2. Chart of respondents’ gender

Source: Analysis of won survey data, 2023

4.1.4. Respondents Experience in Currently assigned position

The respondents were also requested by the researcher to indicate how long they had been working on the currently assigned position or the experience they have on the existing working position they hold in their respective projects accordingly in the table below.

Table 4.3: Respondents experience in the current position

How long have you worked on your current job position					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 1 year	45	31.5	31.5	31.5
	1-3 years	60	42.0	42.0	73.4
	> 3 less than 5years	20	14.0	14.0	87.4
	Above 5 years	18	12.6	12.6	100.0
	Total	143	100.0	100.0	

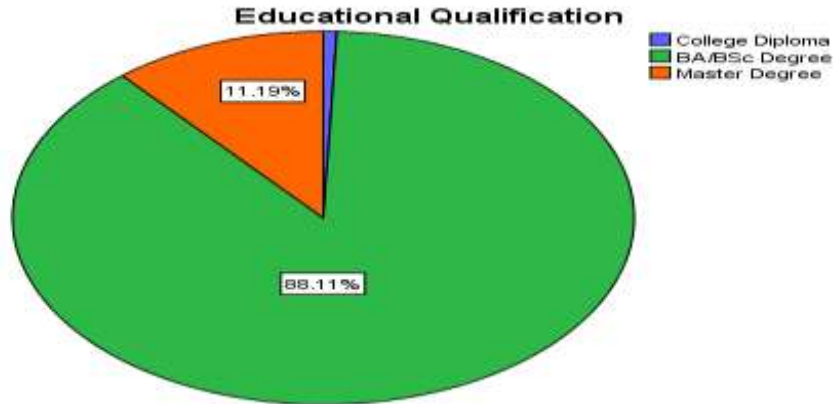
Source: SPSS output of own survey data analysis, 2023

It was found from the above table 4.3 that, 31.5%(45) respondents working in the current position for less than one year, 42%(60) respondents working in the current position for one up to three year, 14% (20) respondents working in the current position for greater than three year up to five years i.e. Greater than 3 - less than 5years and 12.6% (18) respondents working in the current position for more than five years. This indicates than 68.5% (98) experiencing on the existing position for more than one year and above. From this table we can infer that the information given by the respondents can be reliable because of their experience on the job they were assigned.

4.1.5. Education Level of Respondents

The education level of the respondents was sought by the researcher in order to establish whether there is a significant relationship between the level of education and employee satisfaction, it was found that, 0.7% (1) of the respondents have a diploma, 88.1% (126) bachelor’s degree and 11.2% (16) of the respondents have a Master’s degree. This indicates that the respondents in this study have high level of academic qualification. The results would therefore, be of assistance in understanding and responding the questionnaire properly and effectively.

Chart 4.3.: Educational Qualification



Source: SPSS output of own survey data analysis, 2023

4.1.6 Respondents response concerning assignment of job position

In order to acquaint the respondent response whether they are assigned on the basis of their profession or field of study or not, the researcher sought the respondents with the question, do you think you are assigned in your profession? Depending up on the question raised the result obtained expressed in the following chart 4.4.

Chart 4.4 Respondents assignment of job position



Source: SPSS output of own survey data analysis, 2023

According to the above chart 4.4, it was found that 82.1% (124) respondents said they were assigned on the basis of their profession and field of study whereas 17.9%(27) respondents responded they were not assigned on the basis of their profession or field of study.

4.2.1. Risk Identification

Risk identification is the first dimension that the staffs of EOC Diocese sub set of respondents responded the questionnaires, which the researcher was intended to know where there is a relationship between risk identification and project success. The agreement from the participants regarding risk identification statements is shown in Table (4.4) below.

Table 4.4. Risk Identification

Descriptive Statistics	Risk Identification					Mean	St. D
	SD	D	N	A	SA		
RI1. Risk identification process was carried out at the inception of the project to identify both internal and external factors affecting the project	10	9	30	83	11	3.53	0.977
Percentage	6.99	6.29	20.98	58.04	7.69		
RI2. Identified risks are analyzed to determine their impact	23	39	23	39	19	2.94	1.315
Percentage	16.08	27.27	16.08	27.27	13.29		
RI3. There is awareness about the importance of project risk management	12	48	42	25	16	2.9	1.137

in your organizations management and project management team							
Percentage	8.39	33.57	29.37	17.48	11.19		
RI4. Effectively managing risk is important to the Organization's performance and success of the Organization	22	46	23	36	16	2.85	1.274
Percentage	15.38	32.17	16.08	25.17	11.19		
RI5. The effective management of risk is central to your Organizations' performance	10	37	42	39	15	3.08	1.11
Percentage	6.99	25.87	29.37	27.27	10.49		
RI6. Various tools and techniques were used to identify these risks, including; review of documentation, brainstorming, interviews expert judgment etc.	38	20	24	40	21	2.9	1.44
Percentage	26.57	13.99	16.78	27.97	14.69		

Source: SPSS output of own survey data analysis, 2023

Table 4.4, shows the sampled sectors in Jimma area sample respondents 94(65.73%) of the respondents' responded that risk identification process was carried out at the inception of the project to identify both internal and external factors affecting the project (positively responded). And 19(13.28%) of respondents responded that the risk identification process was not carried out at the

inception of the project to identify both internal and external factors affecting the project (negatively responded) and remain 30(20.98%) respondents do not make any specification regarding their viewpoints (Indifferent).

About 58(40.56%) of the respondents explained that the identified risks are analyzed to determine their impact within the selected projects. Those who were against this idea comprised about 43.35% of the total respondents and the remaining 23(16.08%) stayed neutral or they didn't want to express their point of view on the matter. Majority of the respondents disagreed with the idea of that there is awareness about the importance of project risk management in your organizations management and project management team. Also a significant amount of respondents didn't want to express their opinion whether there is awareness about the importance of risk management or not. The remaining 41 respondents agreed with the awareness about the importance of project risk management in your organizations management and project management team. Similarly, those respondents were asked to put their view on "Effectively managing risk is important to the Organization's performance and success of the Organization" and about 52(36.36%) of the respondents agreed to the idea. About great portion 68(47.55%) of the respondent disagreed to the same question raised to them. The remaining 23(16.08%) of the respondents stayed neutral i.e didn't want to express their feeling.

The effective management of risk is not central to the Organizations' performance according to 47(32.86%) of the respondents and 54(37.76%) of the total respondents know that effective management of risk is central to the organizations' performance. The remaining 42(29.37%) of the respondents do not make any specification regarding their viewpoints (Indifferent). The last question raised to the respondents was regarding the use of various tools and techniques to identify these risks, including; review of documentation, brainstorming, interviews expert judgment etc. For this question about 61(42.66%) of the respondents agreed that use of tools and techniques are used to identify risks and 58 (40.56%) of the respondents didn't agreed to the use of tools and techniques to identify different risks. Remaining 24 respondents didn't give their agreement or disagreement response.

4.2.2. Risk Analysis

Table 4.5. Risk Analysis

Descriptive Statistics	Risk Analysis					Mean	Std. Dev.
	SD	D	N	A	SA		
RA1. The Organization has formal risk analysis practice.	0	44	88	15	4	2.85	0.712
Percentage	-	30.77	61.54	10.49	2.80		
RA2. Project risk analysis is done periodically	2	37	81	20	3	2.9	0.729
Percentage	1.40	25.87	56.64	13.99	2.10		
RA3. For all the risks identified the likelihood and impact of the risk was assessed	0	5	21	74	43	4.08	0.764
Percentage	-	3.50	14.69	51.75	30.07		
RA4. Effective risk analysis improves the performance of the company	23	39	3	39	19	2.94	1.315
Percentage	16.08	27.27	2.10	27.27	13.29		

Source: SPSS output of own survey data analysis, 2023

The above table 4.5 Indicates that about 44(30.77%) of the

respondents said the organization has no formal risk analysis practice and only small portion of the respondents agreed that the organization have formal risk analysis practice. The majority of the respondents in return don't want to show their level of agreement for the question raised. Project risk analysis is done periodically according to 16.09% of the respondent and on the other hand those who said there is no periodic risk analysis comprises of 27.27%. Majority of the respondents doesn't want to show their view on periodic risk analysis within and outside the organization. For all the risks identified the likelihood and impact of the risk was assessed according to 117 (81.82%) of the respondents and only 5 respondents disagreed to the likelihood and impact of risk was assessed for identified risks. About 21 of the respondents stayed indifferent for the question raised for them concerning assessment of likelihood and impact of risks. In similar way, the respondents were asked if the performance of the company improves due to effective risk analysis and about 58 of the total respondents agreed to the question. Majority of the respondents disagreed with effective risk analysis

improves the performance of the company they work in and the remaining 3(2.1%) respondents only wanted not to show their view on the matter.

4.2.3: Risk Prioritization

Table 4.6. Risk Analysis

Descriptive Statistics	Risk Prioritization					Mean	Std. D
	SD	D	N	A	SA		
RP1. The risks identified were ranked depending on their significance to the project	4	33	4	80	22	3.58	1.09
Percentage	2.8	23.08	2.8	55.94	15.38		
RP2. The Organization finds it easy to prioritize its main project risk.	5	39	18	72	9	3.29	1.046
Percentage	3.5	27.27	12.59	50.35	6.29		
RP3. The risks were ranked from low/negligible risks to major/critical risks	4	56	28	46	9	3	1.041
Percentage	2.8	39.16	19.58	32.17	6.29		
RP4. Risk prioritization is seen by top management	10	9	30	83	11	3.53	0.977
Percentage	6.99	6.29	20.98	58.04	7.69		

Source: SPSS output of own survey data analysis, 2023

The above table indicates that about 37(25.88%) of the respondents said the organization has no risk ranking depending on their significance to the project in the organization under investigation. Majority of the respondent i.e 102(71.32%) of the respondents responded that the organization identifies the risk based on the significance to the project and only 4 of the respondents stayed neutral for the same question. Respondents were asked if the organization finds it easy to prioritize its main project risk and majority of them agreed that the prioritization of risk is easy for them.

About 44 of the respondents were against the idea i.e they find it not easy to prioritize risks in the organization they work in. The remaining respondents were not sure if the prioritization of risk is easy or hard. The risks were ranked from low/negligible risks to major/critical risks according to 55(38.46%) of the respondent but, majority of the respondents were against the ranking from low to major risks. About 28 of the total respondents restrain themselves from giving negative or positive agreement for the question raised to them.

From the above table it is clear that majority of the respondents agreed to the risk prioritization is seen by top management. On the other hand small portion of the respondents disagreed with the risk prioritization is seen by top management. About 30 respondents stayed indifferent for top management sees risk prioritization.

4.2.4. Risk response

Table 4.7: Risk Analysis

Descriptive Statistics	Risk Response					Mea n	Std. D
	SD	D	N	A	SA		
RRM1. Risk response help to react more quickly to risks and, therefore, decrease the negative effects of risk	10	9	30	83	11	3.53	0.977
Percentage	6.99	6.29	20.98	58.04	7.69		
RRM2. Risk response strategy is developed for prioritized risks	23	39	23	39	19	2.94	1.315
Percentage	16.08	27.27	16.08	27.27	13.29		
RRM3. Detailed risk response plan is prepared for risks that need	12	48	42	25	16	2.9	1.137

warrant action/attention.							
Percentage	8.39	33.57	29.37	17.48	11.19		
RRM4. Risk response plan and strategy is continuously updated	22	46	23	36	16	2.85	1.274
Percentage	15.3	8	32.17	16.08	25.17	11.19	
RRM5. The Organization had open and effective communication channels between us the contractors, suppliers, client and other project stakeholders.	15	4	14	80	30	3.74	1.143
Percentage	10.4	9	2.8	9.79	55.94	20.98	
RRM6. The risk management plan developed from analysis of risks affecting the project was communicated to all stakeholders	24	38	12	49	20	3.02	1.361

Respondents were asked about risk response in the projects they are working and for the “risk response help to react more quickly to risks and, therefore, decrease the negative effects of risk” majority of them agreed and only 19 of the respondents disagreed with quick response for risks to decrease negative effect. For question raised concerning “risk response strategy is developed for prioritized risks” majority of them disagreed and this infer that there is no strategy developed for prioritizing risks. About 40.56% of the respondents agreed that there is a developed strategy to prioritize risks in the organization and the remaining 16.08% of the respondents stayed indifferent for the same question raised for them. Detailed risk response plan is prepared for risks that need warrant action/attention resulted in agreement of 41 respondents and about 60 of the respondents responded detailed risk response plan is not prepared for risk that need warrant action. Also 42 of the respondents were not sure if the detailed risk response is prepared for those risks or not in the organization. Risk response plan and strategy is continuously updated according to 52 respondents

and 68 of the respondents were against continuous update of risk response and strategy. Only some portion of the respondents stayed neutral for the same question raised for them.

About 110 of the total respondents agreed that the Organization had open and effective communication channels between us the contractors, suppliers, client and other project stakeholders. Only 19 of the respondents responded that the organization doesn't have open and effective communication channel between stakeholders. Small portion of the respondents didn't show their perspective on this issue. Great portion of the respondents agreed for "the risk management plan developed from analysis of risks affecting the project was communicated to all stakeholders" & "the strategies used for managing risks including taking insurance covers, performance guarantees, and retention sum and defect liability period were sufficient". Some of the respondents were against both ideas raised above and less than 10% of the respondents stayed indifferent for both questions.

On the other hand, managing risk is always part of the agenda in the project's progress meetings according to 57 respondents and 36 of them disagreed that managing risk is always part of the agenda in project progress meetings of the organization. Major part of the response was unanswered by respondents. Regarding this, more than 60 respondents agreed that risk matrix was developed for the project & risk matrix was reviewed and updated throughout the life cycle of the project. Some numbers of the respondents were against development and update of risk matrix. 32 & 28 of the respondents stayed neutral for development of risk matrix and update of risk matrix respectively.

The monitoring of risks is intended to identify newly occurring risks at an early state and improve the responsiveness of the organization is agreed by 110 respondents and only 19 of the respondents disagreed to this question. The remaining 14 respondents don't want to show their view on this question. Lessons learned, in risks monitoring helps to enhance the risk coping capacity and the assumptions for future projects become more realistic agreed by 37 and 72 of the respondents were against this idea. The remaining respondents were unable to show their disagreement or agreement on the same issue. About 46 of the respondents agreed that a project risk manager was appointed to advice on risk management and 55 of the respondents said the project risk manager was not appointed to advice on risk management. The remaining respondents stayed neutral on appointment

of risk manager to advice on risk management.

4.2.5: Risk management tools

Table 4.7: Risk Analysis Result

Descriptive Statistics	Risk management tool					Mean	Sd.D
	SD	D	N	A	SA		
RMT1. A risk register/matrix was developed incorporating the risks identified, controls, responses and residual risks.	41	32	11	54	5	2.65	1.334
Percentage	28.67	22.38	7.69	37.76	3.5		
RMT2. The risk register/matrix was continuously reviewed by the project team/project manager	13	26	29	55	20	3.3	1.187
Percentage	9.09	18.18	20.28	38.46	13.99		
RMT3. There was adequately trained human resources to manage the project and the risks identified	5	27	45	51	15	3.31	1.009
Percentage	3.5	18.88	31.47	35.66	10.49		

Source: SPSS output of own survey data analysis, 2023

Respondents were asked about the risk management tools in the organization and their responses were as follows for the questions raised for them. A risk register/matrix was developed incorporating the risks identified, controls, responses and residual risks was agreed by 59 of the total respondents

and majority of them didn't agree with the same question. About 75 of the respondents agreed with the risk register/matrix was continuously reviewed by the project team/project manager and only 39 of them were against continuous review of risk matrix by project team/ project manager. According to 66 of the respondents there was adequately trained human resources to manage the project and the risks identified. Small portion of the respondents responded there is no adequately trained human resource to manage the project.

4.3 Multiple linear regression assumptions

Before joining regression analysis, it is essential to test assumptions of multiple linear regression analysis Model (Keith, 2006; Pallant, 2005). Therefore, each assumption result was discussed below:

4.3.1. Normality test

Another important diagnostics test conducted in this study is the normality assumption (i.e. the normally distributed errors). The normality assumption is about the mean of the residuals is zero. Moreover, Normality tests are used to determine whether a data set is well-modeled by a normal distribution or not, or to compute how likely an underlying random variable is to be normally distributed (Gujarati, 2009). Therefore, the researcher used histogram for testing the normality of the data. According to Fidell (2001), if the residuals are normally distributed around its mean of zero, the histogram should be a bell-shaped and regression standardized residual plotted between 3.3 and – 3.3. So that, from chart below, it can be noted that the data conforms to the normality assumption (Stevens, 2009). As we can understand from the histogram and p-p plot depicted below, the residuals seem normally distributed and the residuals are distributed with a mean of 0 and standard deviation of 0.983 which is approximately 1. Thus, the model fulfills the assumption of being normally distributed. Moreover, in the normal probability plot it is expected that our points lie in a reasonably straight diagonal line from bottom left to top right which would suggest no major deviations from normality.

Chart 4.3: Normality test

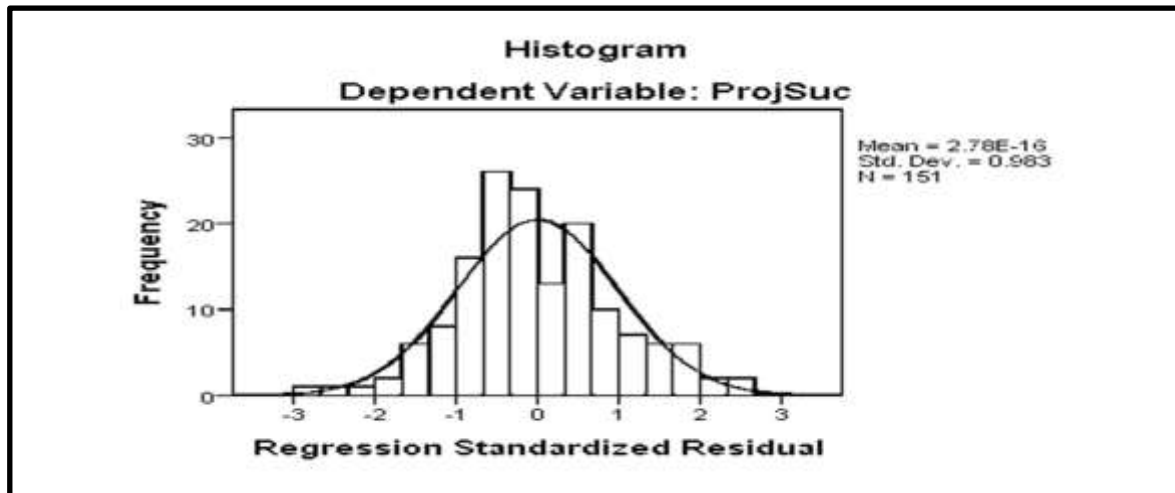


Figure: 4.1: Approximated probability distribution of the error terms
Source: SPSS output of own data analysis from survey of 2023

4.3.2 Linearity test

This is slightly different from simple linear regression as we have multiple explanatory variables. Multiple regressions can accurately estimate the relationship between dependent and independent variables, when their relationship is linear in nature (Keith, 2006). If linearity is violated, all the estimates of the regression including regression coefficients, standard errors, and tests of statistical significance may be biased (Keith, 2006). This can be best checked by p-p plot residual as shown in the appendixes. When, p-p residual look at straight line, the relationship between the dependent and independent variables is linear. Therefore, there is no linearity problem on the data used for this study.

Chart 4.4: Linearity test

Normal P-P Plot of Regression Standardized Residual

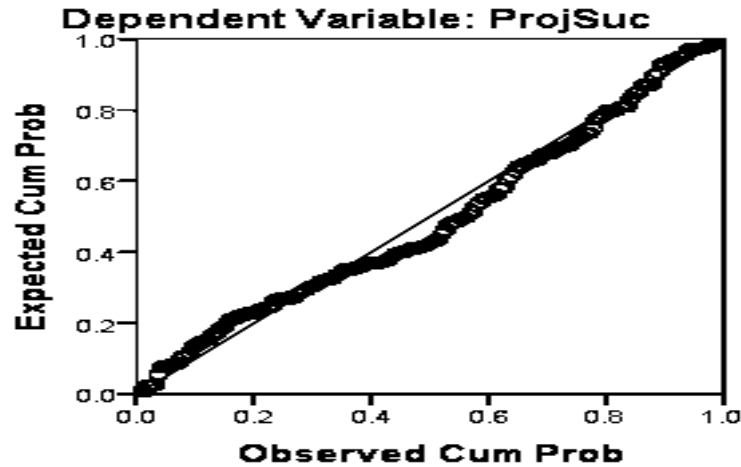


Figure: 4.2: Approximated probability distribution of the error terms
Source: SPSS output of own data analysis from survey of 2023

4.3.3 .Autocorrelation test

For any two observations the residual terms should be uncorrelated (or independent). This eventuality is sometimes described as a lack of autocorrelation. The researcher used and tested this with the Durbin–Watson (DW) test, which tests for serial correlations among errors. A value substantially below 2 (and especially a value less than 1) means that the data is positively auto correlated, i.e. on average a data element is close to the subsequent data element. A value of d substantially above 2 means that the data is negatively auto correlated, i.e. on average a data element is far from the subsequent data element. Thus the DW test from the appendix shows Sig. F Change 1.168 which means the data is positively auto correlated.

Table 4.8: Durbin Watson Autocorrelation test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.958 ^a	.917	.915	.25735	1.168
a. Predictors: (Constant), RiskMgt, RiskPrio, RiskAna, RiskResp, RiskIden					
b. Dependent Variable: ProjSuc					

Source: SPSS output of own data analysis from survey of 2023

4.3.5. Multicollinearity Test

If an independent variable is an exact linear combination of the other independent variables, then we can infer that the model suffers from perfect collinearity. According to Gujarati (2003), Multicollinearity test helps to identify the correlation between explanatory variables and to avoid double effect of independent variable from the model. When independent variables are multicollinear, there is overlap or sharing of predictive power. This may lead to the paradoxical effect, whereby the regression model fits the data well, but none of the explanatory variables (individually) has a significant impact in predicting the dependent variable. For this purpose, variance inflation factor (VIF) and tolerance test were employed to check whether or not multicollinearity problem exists in explanatory variables (network quality, service quality and product availability). If the value of VIF is less than 10, there is no Multicollinearity between the explanatory variables and on the other hand VIF greater or equal to 10 is an indicator of a serious Multicollinearity problem. In addition, Tolerance is an indicator of how much of the variability of the specified independent is not explained by the other independent variables in the model and is calculated using the formula for each variable. If this value is very small (less than .10), it indicates that the multiple correlation with other variables is high, suggesting the possibility of multicollinearity (Keith, 2006; Shieh, 2010).

Table 4.10: Multicollinearity Test between independent variables

Model		Collinearity Statistics	
		Tolerance	VIF
	RiskIden	.187	5.360
	RiskAna	.767	1.304
	RiskPrio	.865	1.156
	RiskResp	.198	5.053
	RiskMgt	.296	3.382
a. Dependent Variable: ProjSuc			

Source: SPSS output of own data analysis from survey of 2023

As exposed in collinearity Statistics the above table13, the value of VIF of all independent variables was found to be smaller than 10 and similar purpose tolerance is used for test multicollinearity by having less than 0.1. In this study the tolerance value for each independent variable is well above 0.1. Therefore, all the results confirm that multicollinearity assumption is maintains.

3.5 Heteroscedasticity test

Heteroscedasticity statistics checked is used to measure model fitness. The variance of the residuals for every set of values for the independent variable should be equal and violation is called heteroscedasticity. This means that investigators assume that errors are spread out consistently between the employees of EOC Jimma area. Scatter plot of more than 3.3 or less than -3.3 indicates a heteroscedasticity problem (Tabachnick & Fidell, 2007). Therefore, as shown in appendix the data did not violate heteroscedasticity assumption and instead it was homoscedastic.

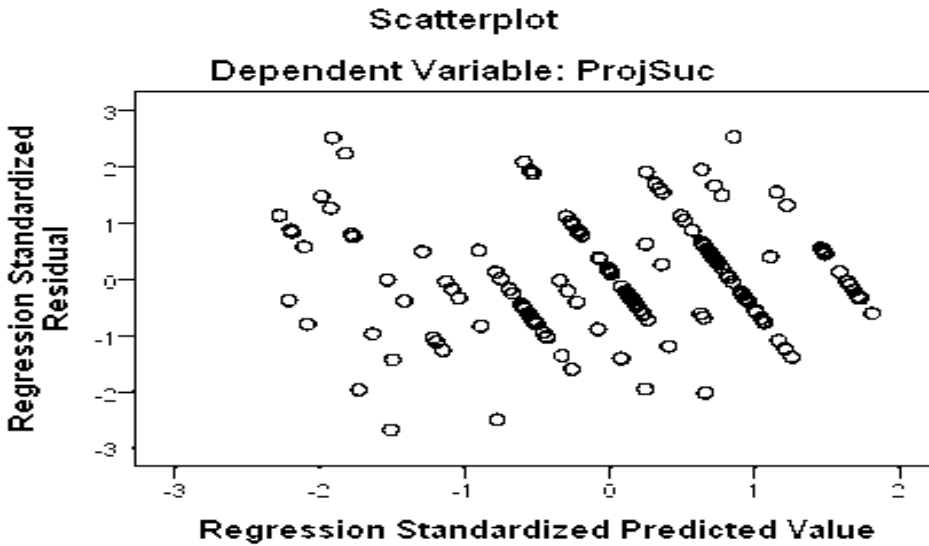


Figure: 4.1: Approximated scatter plot distribution of error terms
Source: SPSS output of own data analysis from survey of 2023

4.3.6 Sample size test

With a small sample, one can obtain a result that does not generalize other target population. If results do not generalize to other samples, then it is little scientific value. To test sample size researcher uses a formula given by (Pallant, 2005, p. 142). This formula used to test sample size problem by taking into account the number of independent variables as follow:

$$N > 50 + 8m = N > 50 + 8(5) = 151 > 90 \dots \dots \dots 4.1$$

Where; m = number of independent variables (network quality, service quality and product availability N- valid sample size. Based on the above equation result, valid sample size 151 is greater than 90 and this result showed that the data conforms to the sample size assumption.

4.4. Correlation Analysis

Correlation is a statistical tool to determine the strength of relationship between two suitability variables. To find the association of the independent variables with dependent variable, Pearson product moment of correlation coefficient was used. The ranges of r value from -1 to +1, which used

to describe a direction relationship between two variables. Among them, minus means the relationship between two variables is negative, and if the greater the absolute value of correlation coefficient, the stronger the relationship. It shows that if one variable becomes bigger and another variable becomes too smaller. A plus sign means a positive relationship between two variables; a variable tends to directly become bigger with another variable, or smaller and smaller with this variable (direct relation). When correlation coefficient equal to 0, it means that there is no relationship between two variables.

Table 4.11. Correlations coefficients

		ProjSuc	RiskIden	RiskAna	RiskPrio	RiskResp	RiskMgt
ProjSuc	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	143					
RiskIden	Pearson Correlation	.735**	1				
	Sig. (2-tailed)	0.000					
	N	143	143				
RiskAna	Pearson Correlation	.659**	.478**	1			
	Sig. (2-tailed)	0.000	0.000				
	N	143	143	143			
RiskPrio	Pearson Correlation	.935**	.210**	0.619	1		
	Sig. (2-tailed)	0.000	0.010	0.005			
	N	143	143	143	143		
RiskResp	Pearson Correlation	.478**	.876**	.390**	0.382	1	
	Sig. (2-tailed)	0.000	0.000	0	0.009		
	N	143	143	143	143	143	

RiskMgt	Pearson Correlation	.281**	.799**	.391**	.306**	.794**	1
	Sig. (2-tailed)	0.000	0.000	0	0	0	
	N	143	143	143	143	143	143

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

Source: SPSS output of own data analysis from survey of 2023

The results of Pearson correlation revealed that risk identification was positively and significantly associated with project success ($r = 0.735$, $p < 0.01$). Further, risk analysis was positively and significantly correlated to project success ($r = 0.659$, $p < 0.01$). Moreover, risk prioritization was positively and strongly correlated with project success ($r = 0.935$, $p < 0.01$) and also there is a positive correlation between risk response and project success ($r = 0.478$, $p < 0.01$). there is weak but, positive association between risk management and project success ($r = 0.281$, $p < 0.01$). This implies that all of the variables have a linear relationship with the project success in the organization. Especially, risk identification, risk analysis and risk prioritization have a strong positive relation with the project success compared with other variables.

4.5 Model Summary

Table 4.8 gives the regression model summary results. It presents the R value which is the measure of association between the dependent and the independent variables, the R Square which is the coefficient of determination measuring the extent at which the independent variables influence the dependent variable as well as the Adjusted R Square which measures the reliability of the regression results.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	D.Watson
1	.958 ^a	.917	.915	.25735	1.168
a. Predictors: (Constant), RiskMgt, RiskPrio, RiskAna, RiskResp, RiskIden					
b. Dependent Variable: ProjSuc					

Source: SPSS output of own data analysis from survey of 2023

The findings show that R which is the multiple correlation coefficients that shows quality of the prediction of the dependent variable by the independent variable is 0.958. This is a good indication since it points to a strong correlation. The R-Square which is the coefficient of determination shows that the three independent variables in the model explain 91.7% of project success. Subsequently, from the Adjusted R Square it is evident that after adjusting the model for inefficiencies the independent variables can explain 91.5% of project success.

4.6. Significance Level (ANOVA)

Analysis of the variance (ANOVA) was used to make simultaneous comparisons between means; thus, testing whether a significant relation exists between dependent and independent variables. ANOVA indicates a significant F statistics implying that the model was fit for the estimation. The results presented in table 4.9 gives the ANOVA results which shows the reliability of the model developed in explaining the relationship between the study variables. The significance of the model was tested at 5% level with a 2-tailed test.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	106.740	5	21.348	322.	.000 ^b
	Residual	9.603	145	.066		
	Total	116.343	150			

a. Dependent Variable: ProjSuc
b. Predictors: (Constant), RiskMgt, RiskPrio, RiskAna, RiskResp, RiskIden

Source: SPSS output of own data analysis from survey of 2023

From the table 4.9, the F statistic is 322.332 with a distribution F (5,145), and the probability of observing a value greater than or equal to 322.332 is less than 0.001 as given by the significance value of 0.000 which is less than the critical value at 5% level in a 2-tailed test. This therefore, reveals that the regression model developed is statistically significant and the variation in the results is insignificant that cannot result to a much difference in case of a change in the study units (population). The strength of each predictor (independent) variable influence on the criterion (dependent) variable can be investigated via standardized Beta coefficient. The regression coefficient explain the average amount of change in dependent variable that caused by a unit of change in the independent variable. The larger value of Beta coefficient that an independent variable has, brings the more support to the independent variable as the more important determinant in predicting the dependent variable. Therefore, the model can be relied up on to explain the effects of the specific factors on project success of selected sectors in Jimma Diocese.

4.7. Results of Regression Analysis

Multiple regression analysis was conducted so as to determine the relationship between project success and the five variables. The regression equation becomes:

$$\text{Project success} = a + b_{x_1}RI + b_{x_2}RA + b_{x_3}RP + b_{x_4}RR + b_{x_5}RM + e$$

Table 4.14: Regression result

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF

1	(Constant)	-0.997	0.253		-3.945	0.000		
	RiskIden	0.458	0.056	0.449	8.129	0.000	0.187	5.36
	RiskAna	0.128	0.058	0.06	2.22	0.028	0.767	1.304
	RiskPrio	1.154	0.032	0.938	36.552	0.000	0.865	1.156
	RiskResp	0.284	0.1	0.153	2.843	0.005	0.198	5.053
	RiskMgt	0.188	0.04	0.209	4.759	0.000	0.296	3.382

a. Dependent Variable: PS

Source: SPSS output of own data analysis from survey of 2023

As clearly shown on Table 4.10 above, the project success is positively associated with risk identification (.458), risk analysis (.128), risk prioritization (1.154), risk response (.284), and

risk management (.188). The multiple regressions model with all four predictors produced $R^2 = .917$, $F = 322.332$, $p = 0.000$. Since the p-value is less than $\alpha = .05$, we can conclude that the predictors did contribute to the multiple regressions model. The larger the value of R and R^2 display that there is strong relationship among observed and predicted value. In our case R is 0.958 and R^2 is 0.917 indicating there is strong relation of the dependent variable and the independent variables. The multiple regressions model with all three predictors produced $R = .958$, $F = 322.332$, $p < .001$. Therefore, the final model for the multiple regressions is,

$$Y = -0.997 + 0.458X_1 + 0.128X_2 + 1.154X_3 + 0.284X_4 + 0.188X_5 \dots \dots \dots 4.2$$

B0: is the mean for the response when all of the independent Variables (x) take on the value 0.), project success be -0.997.

Risk identification in the selected sectors have positive significant effect on project success $\beta = 0.458$, with $p < 0.001$, the existing risk analysis of the company had the least significant effect on the project success with $\beta = 0.128$, with $p < 0.001$, also risk prioritization have a positive significant effect on the project success like that of the other variables with a significance result of $\beta = 1.154$, with $P < 0.001$. The other variable i.e risk response & risk management have a positive significance

with project success resulted $\beta = .284$, & 0.188 respectively with $P < 0.001$. From the result of multiple regressions analysis presented in table 4.6, the researcher concluded that risk identification & risk prioritization has stronger effect on project success than the other independent variables.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMEDATIONS

This chapter presents the summary of the research findings; conclusion and recommendations. The conclusions were drawn from the findings of the study in line with the study objectives by looking into the influence of project risk management practices on the success of the capital projects.

5.1. Summary of Findings

The question whether risk management contributes to project success is considered relevant by many from both academic and practitioner's communities. Delays in completion, upward revaluation of project costs, poor quality workmanships and premature termination of major government projects are common phenomena in Ethiopia. This phenomenon is also reflected in EOC Jimma dioceses were projects have not been completed on time, budget/cost or meet quality and design specifications. The purpose of this study was to evaluate the influence of project risk management practices such as risk identification, risk analysis and ranking, risk response and monitoring and use of risk management tools and techniques on EOC Jimma dioceses projects and to see the influence of these practices on the success of these projects. Success in project is indicated by its performance in the achievement of project time, cost and quality.

The study adopted projects of EOC Jimma dioceses which has implemented 8 projects which constituted this study's targeted population. The projects had been implemented over the 4 years

period from 2019 to 2022. Primary data was collected for the purpose of this study. It was collected using a self-administered structured questionnaire. Secondary data's are also used for the purpose of this study. Each section of the questionnaire contained both closed and open ended questions. For most of the sections, those surveyed were invited to score their responses using a Likert-style rating scale, with a score of 1 to 5.

The projects are implemented by various project implementation teams who have consistently used various project risk management practices; as such the projects have recorded varied successes in meeting the project objectives. Out of the targeted 155 respondents, 143 successfully responded by completing the questionnaire, thus achieving a response rate of 92.25%. Of the 143 respondents is enough to conduct this research. The period of implementation of these projects ranged between 18 to 48 months. These projects which were typically complex attracted a lot of public attention because of substantial impacts on community, the service giving business.

On project success the study established that majority of projects had completed within time with a mean and standard deviation of 3.0 and 1.041 respectively. Most projects were also completed within budget with a mean of 3.29 and standard deviation of 1.046. On quality, projects meet technical specification with mean of 3.58 and standard deviation of 1.090. When we compare these three project success factors, completing the project with quality was high and low with time.

Descriptive statistics were used to analyze the data by way of percentages, means, variance, standard deviation, correlation analysis and multiple regression analysis. This was aimed at ascertaining whether there is a functional relationship between project risk management and project success. Besides using correlation analysis to determine the influence of project risk management practices on project success, the study also developed a multiple regression model for the relationship between these practices with project success as the dependent variable and risk identification, risk analysis, risk ranking, risk response & monitoring and RM tools and techniques as the independent variable.

While there are plenty of risk management practices, tools and techniques available, many project implementation teams did not often use them. Some of practices which were not applied included

appointment of project risk manager, developing a risk register for the project and continuously reviewing this register, ranking of the risks to ensure more effort is focused on high risks among others. This notwithstanding, analysis of the data collected revealed that some risk management practices were widely used. Risk analysis, risk response and monitoring and risk prioritization recorded the highest mean score. Some of the widely used project risk management practices included risk identification through analysis of the internal and external environment, brainstorming, interviewing and expert judgment.

Project risk management seems to be effective in contributing to project success. From the analysis of the data collected, it was proved that risk management has a positive correlation with project success. Projects which had consistently applied risk management practices produced less surprises as all the stakeholders had been prepared on the uncertainties in the project implementation. The project implementation teams had also taken steps to reduce the impact and the likelihood of the unavoidable events in the project implementation. Multiple regression analysis on risk management practices and project success produced a positive result implying that application of risk management practices to projects contribute to project success Thus we can conclude that the higher the use of project risk management practices the higher the project success.

5.2. Conclusions

The objectives of this study was to establish the influence of project risk management practices on the success of projects by establishing the extent of application of project risk management practices in projects at the EOC Diocese and determining the relationship between project risk management practices and the success of projects implemented by the EOC Diocese Jimma area.

After considering the results from the study, the following conclusions can be deduced.

- ✓ The findings of this study confirm that application of risk management practices (independent variables) were consistently applied on a project increases the rate of the

project success (dependent variable). That means 95.8% of the variation in project success in Ethiopian orthodox Tewahido Jimma Deioces can be explained by tools of project management: risk identification, analysis, ranking, and response while 4.2% of it found to be explained by other factors not included in this study. These project management tools also have positive significant effect on project success. The researcher also concluded that risk identification & risk prioritization has stronger effect on project success than the other independent variables. Risk identification have 45.8% significant effect on project success compering to the other tools while risk analysis have 12.8% and risk ranking have 11.54% significant effect on Project success in the area under the study.

- ✓ Other risk management practices which were not applied on these projects included appointing a project risk manager and continuously reviewing the risk matrix/register throughout the life of the project.

5.3. Recommendations

The finding of this study has implications for faith based projects. Faith based projects just like any other projects should be completed on time, on budget and in good quality. In order to achieve this goal, attention must be placed in consistently applying risk management practices to increase the rate of project success. Therefore, the following ideas were recommended to the stakeholders of project plan and implementation in Ethiopian Orthodox Tewahid church projects in Jimma diocese:

1. Since risk identification, risk assessment, risk ranking, risk response and risk management tools has significant effect on project success, application of these practices is highly recommended in the process of project plan and implementation, particularly in the Ethiopian Orthodox Tewahid church projects in *Jimma* diocese. Hence, these practices should be applied at higher level for all projects.
 - ✓ The organization should create more awareness on project risk management practices. Additional tools and risk management practices need to be developed and tested to

determine which tools works best in different scenarios and environments. This ensures that risk management improves project performance and success.

- ✓ Project risk management should become part of the culture in project management activity and routine component in any project plan and review activity.
- ✓ Risk ranking and prioritization tools should be in place to give emphasis for identifying major risks easily and to act on it on time.
- ✓ Experiences of other similar projects operating around Jimma area should be taken in to account so as to use good practices of those projects in current projects of the organization.

References

- Addis Mesfin (2014). *The study on construction contract risk management practice in Ethiopian building construction projects*. Addis Ababa university, Ethiopia
- Bhattacharjee(2012). *Social Science Research: Principles, Methods, and Practices*.
University of south Florida Tampa, Florida, USA
- Arto.K.A.,Kahkonen, K. &Pitkanen, P.J. (2000). Unknown soldier revisited.
*A story of risk management. Project Management Association
Finland, Helsinki. ASCE.*
- Baccarini, D. (1999). *The logical framework method for defining project success*.
- Bakker, K., Boonstra A., &Wortmann, H. (2009). *Does risk management contribute to IT project success? A meta -analysis of empirical evidence*.
International Journal
of Project Management (2009) doi: 10.1016/j.ijproman. 2009.07.002
- Black, C., Akintoye, A., & Fitzgerald, E. (2000). *An analysis of success factors and benefits of partnering in construction*. International Journal o
Project Management.
- Bryman, A. & Bell, E. 2007, *Business Research Methods, 2nd ed.*,
Oxford University Press,New York.
- Carbone, T.A. &Tippett, D.D. (2004). *Project risk management using the project risk FMEA*, Engineering Management Journal.
- Cervone, H.F. (2004). *How not to run a digital library project*.
OCLC Systems &Chandra, P. (1995). *Projects planning, Analysis, Selection
and Review*.
Tata McgrawHill,New Delhi
- Chen, W.T. & Chen, T.T.,(2007). *Critical success factors for construction partnering in Taiwan*. International Journal of Project
Management 25 (5), 475—484.

- Chua, D.K.H., Kog, Y.C. & Loh, P.K. (1999). *Critical success factors for different project objectives*. Journal of Construction Engineering and Management,
- Cooke-Davies, T. (2002). *The real' success factors on projects*, International Journal of Project Management.
- Daniel J. Beal & Robin R. Cohen –Cohesion and Performance in Groups: *A Meta-Analytic Clarification of Construct Relations*. Journal of Applied Psychology Copyright 2003 by the American Psychological Association, Inc. 2003, Vol. 88, No. 6, 989–1004
- Dey, P.K. & Ogunlana, S.O. (2004). *Selection and application of risk management tools and techniques for build-operate-transfer projects*. Industrial Management
- Hayes, R, H, Upton, D.M. 1998, *Operations-Based Strategy*. California Management Review 40(4): 8-25.
- Hillson, D. (2004). *Effective Opportunity Management for Projects: Exploiting Positive Risk*. Marcel Dekker, New York, NY.
- Jaafari, A. (2001). Management of risks, uncertainties and opportunities on projects:
- Israel G.D. (2013), *Determining Sample Size, Agricultural Education and Communication Department*, University of Florida.
- Kendrick, T. (2003). *Identifying and Managing Project Risk*. American Management Association, New York, NY.
- Kululanga, G., & Kuotcha, W. (2010). *Measuring project risk management process for construction contractors with statement indicators linked to numerical scores*. Engineering, Construction and Architectural Management
- Kumar, R.L. (2002). *Managing risks in IT projects: an options perspective*. Information & Management.
- Kutsch, E., & Hall, M. (2005). *Intervening conditions on the management of project risk: dealing with uncertainty in information technology projects*. International Journal of Project Management.
- Makori, O.J. (2011). *The role of supply chain relationships in the success of government funded construction projects: the case of Nairobi County*.

- Unpublished MBA Project, University of Nairobi.
- McConnell, S. (1996). *Rapid Development: Taming Wild Software Schedules*, Microsoft Press, Redmond, WA.
- Miles, F.M. & Wilson, T.G. (1998). *Managing project risk and the performance envelope*: Proceedings of the 13th Annual Applied Power Electronics Conference and Exposition, APEC, Singapore.
- Moyo. (2001). *An evaluation of The state of NGO's and politics in Zimbabwe*, SAPES Books Harare.
- Mugenda, O.M., & Mugenda, A.G. (2003). *Research Methods: Quantitative and Qualitative Approaches*, Acts Press, Nairobi.
- Mullins, J.W., Forlani, D., & Walker, O.C. (1999). *Effects of organizational and decision-maker factors on new product risk taking*. *Journal of Product Innovation Management*.
- Munns, A.K. & Bjeirmi, B.F. (1996). The role of project management in achieving Muto Performance Corp. (2010). *Top 10 obstacles to project success*.
- Ngugi, J. (2007). *The effects and extent of foreign exchange risk in project management, the case of ILRI*. Unpublished MBA Project, University of Nairobi.
- Olsson, R. (2008). *Risk management in a multi-project environment*. *International Journal of Quality and Reliability Management*.
- Omufira, A.N. (2003). *The extent of TQM implementation in the construction industry: A case of Kenya's building construction industry*. Unpublished MBA project, University of Nairobi.
- Pinto, J. (2007). *Project Management - Achieving Competitive Advantage*. Pearson- Prentice Hall.
- PMI (2004), *Guide to the Project Management Body of Knowledge PMBOK Guide, PM 3rd Edition*.

- Sanvido, V., Grobler, F., Parfitt, K., Guvenis, M. & Coyle, M. (1992). *Critical success factors for construction projects*. Journal of Construction Engineering and Management, ASCE, Vol. 118 No. 1, pp. 94-111.
- Sancheze-Rodriguez C, (2009), *Effect of strategic purchasing on supplier development and performance: a structural model*, Journal of Business and Industrial Marketing, Vol. 24, No. 3, pp. 161-172,
- Segismundo, A. & Miguel, P.A.C. (2008). *Failure Mode and Effect Analysis (FMEA) in the Context of Risk Management in New Product Development*. International Journal of Quality & Reliability Management Services. International Digital Library Perspectives.
- Shenhar, A.J. (2001). *One size does not fit all projects: exploring classical contingency domains*. Management Science, Vol. 47 No. 3, pp. 394-414.
- Shenhar.A.J., Raz, T., &Dvir, D. (2002).*Risk management, project success, and technological uncertainty*. R&D Management, Vol. 32 No. 2, pp. 101-9
- Takim, R. &Akintoye, A. (2002). *A conceptual model for successful construction time for a fundamental shift*. International Journal of Project Management, Vol. 19, pp. 89-101.
- Temsegen and Tegabu (2015). *Right of way risk management of road construction project in urban areas, a case of Addis Ababa*. Addis Ababa University, Ethiopia
- TsionFekadesillassie(2015). *Risk management practice of commercial Banks*. Addis Ababa University, Ethiopia
- Ward, S.& Chapman, C. (2003). *Transforming project risk management into project*
- Weick, K., & Sutcliffe, K. (2007). *Managing the Unexpected*, second ed. Wiley, New York
- Yi, R. P. (1988). *On Evaluation of Structural Equation Models*. Journal of the academy of

Zikmund, W. Babin, B., Carr, J., Griffin, M. (2010). *Business Research Methods*.

8th edition, South-Western, Cengage Learning

Zikmund, W. G., (2003), *Business research methods*, 7th edn.,

Thomson South-Western, USA, 748page

APPENDIX 1

JIMMA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF ACCOUNTING AND FINANCE

Questionnaire

Dear respondent,

I am graduate student at Jimma university school of graduate studies. Currently, I am conducting a research study on “The effect of project risk management practices on success of EOC projects” in partial fulfillment of Master of Arts in project management & finance.

The purpose of this questionnaire is to gather data for the proposed study, and hence you are kindly requested to assist the successful completion of the study by providing the necessary information. Your genuine, frank and timely response is vital for the success of the study and thank you in advance for your kind cooperation to fill this questionnaire.

Part 1: Project details and project success

Part 1: Project details and project success

Indicate the level of the following project success factors were to your project by putting

-√-mark on your choice.

No.	Project success factors	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
-----	-------------------------	-------------------	----------	---------	-------	----------------

2.1	Projects are completed within quality specifications					
2.2	Projects are completed within budget					
2.3	Projects are completed within schedule					

Part 2: project risk management practice

Kindly indicate the extent to which the following project risk management practices are applicable and applied in your project(s) by putting -√-mark on your choice.

No	Risk management practice	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.1	Risk Identification					
3.1.1	Risk identification process was carried out at the inception of the project to identify both internal and external factors affecting the project					
3.1.2	Identified risks are analyzed to determine their impact					
3.1.3	There is awareness about the importance of project risk management in your organizations management and project management team					

3.1.4	Effectively managing risk is important to the Organization's performance and success of the Diocese					
3.1.5	The effective management of risk is central to your organizations' performance					
3.1.6	Various tools and techniques were					

No	Risk management practice	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	used to identify these risks, including; review of documentation, brainstorming, interviews expert judgment etc.					
3.2	Risk Analysis					
3.2.1	The organization has formal risk analysis practice.					
3.2.2	Project risk analysis is done periodically					
3.2.3	For all the risks identified the likelihood and impact of the risk was assessed					
3.2.4	effective risk analysis improves the performance of the company					

3.3	Risk Prioritization					
3.3.1	The risks identified were ranked depending on their significance to the project					
3.3.2	The organization finds it easy to prioritize its main project risk.					
3.3.3	The risks were ranked from low/negligible risks to major/critical risks					

No	Risk management practice	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.3.4	Risk prioritization is seen by top management					
3.4	Risk Response and Monitoring					
3.4.1	Risk response help to react more quickly to risks and, therefore, decrease the negative effects of risk					
3.4.2	Risk response strategy is developed for prioritized risks					
3.4.3	Detailed risk response plan is prepared for risks that need warrant action/attention.					

3.4.4	risk response plan and strategy is continuously updated					
3.4.5	The Diocese had open and effective communication channels between us the contractors, suppliers, client and other project stakeholders.					
3.4.6	The risk management plan developed from analysis of risks affecting the project was communicated to all stakeholders					
3.4.7	The strategies used for managing risks including taking insurance					

No	Risk management practice	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	covers, performance guarantees, and retention sum and defect liability period were sufficient					
3.4.8	Managing risk is always part of the agenda in the project's progress meetings					
3.4.9	A risk matrix was developed for the project					

3.4.10	The risk matrix was reviewed and updated throughout the life cycle of the project					
3.4.11	The monitoring of risks is intended to identify newly occurring risks at an early state and improve the responsiveness of the organization					
3.4.12	Lessons learned, in risks monitoring helps to enhance the risk coping capacity and the assumptions for future projects become more realistic					
3.4.13	A project risk manager was appointed to advice on risk management					
3.5	Risk management tools and techniques					
No	Risk management practice	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.5.1	A risk register/matrix was developed incorporating the risks identified, controls, responses and residual risks.					
3.5.2	The risk register/matrix was continuously reviewed by the project team/project manager					

3.5.3	There was adequately trained human resources to manage the project and the risks identified					
-------	---	--	--	--	--	--

Part 3: General section

1. In your opinion, what measures would you consider important for improving project risk management practices in order to enhance the success of your project

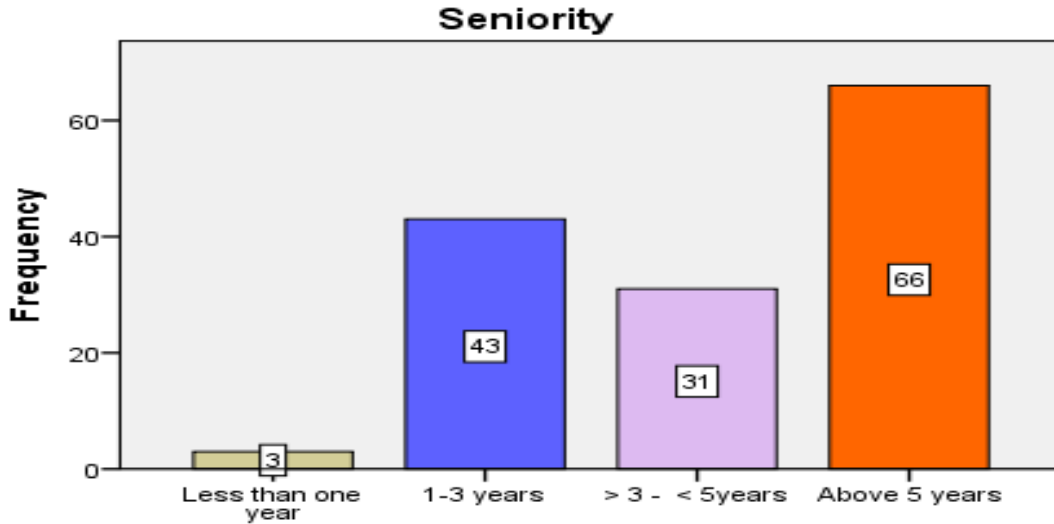
.....
.....
.....

2. What recommendations would you make that will improve project management in EOC projects?

.....
.....

APENDEX 2

Appendix 2.1: Frequency of responses of respondents' seniority



Appendix 2.2: Analysis of variance of variance of the dependent variable relative to the explanatory variables

Table 4.9 ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	106.740	5	21.348	322.332	.000 ^b
Residual	9.603	145	.066		
Total	116.343	150			

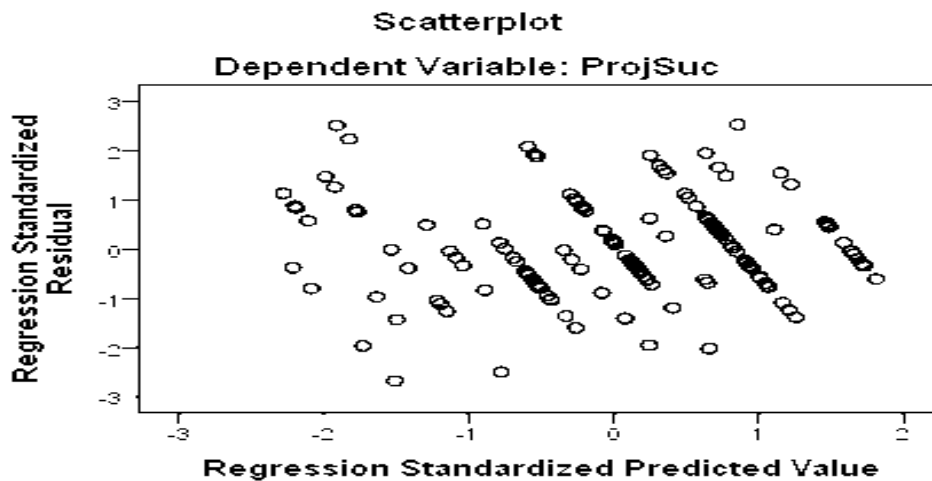
a. Dependent Variable: ProjSuc

b. Predictors: (Constant), RiskMgt, RiskPrio, RiskAna, RiskResp, RiskIden

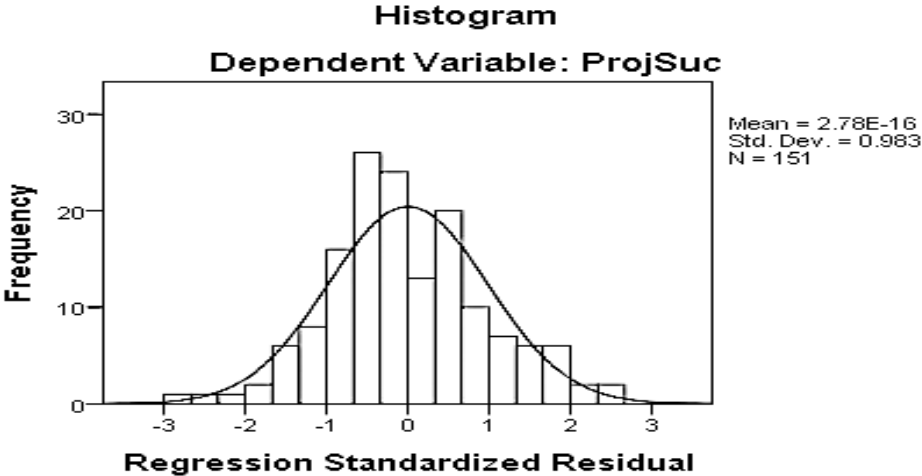
Appendix 2.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	D.Watson
1	.958 ^a	.917	.915	.25735	1.168
a. Predictors: (Constant), RiskMgt, RiskPrio, RiskAna, RiskResp, RiskIden					
b. Dependent Variable: ProjSuc					

Appendix 2.4: Heteroscedasticity test



Appendix 2.4: Probability distribution of residual variables



Appendix 2.5: parametric linearity between the dependent and independent variables

Normal P-P Plot of Regression Standardized Residual

