THE INFLUENCE OF PROJECT RISK MANAGEMENT PRACTICES ON SUCCESS OF CBE'S PROJECTS

BY: MILLION ABERA

ID NO: SGS/0668/2007A

ADVISOR: WORKNEH KASSA (PHD)

A RESEARCH PROJECT SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN PROJECT MANAGEMENT.

ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF PROJECT MANAGEMENT

May, 2018

Addis Ababa, Ethiopia

THE INFLUENCE OF PROJECT RISK MANAGEMENT PRACTICE ON SUCCESS OF CBE'S PROJECTS

By: Million Abera

Advisor: WorkinehKassa (PHD)

A Research Project Submitted to St. Mary's University School of graduate studies in partial fulfillment of the requirements for The Degree of Master of Arts in Project Management.

May, 2018

Addis Ababa, Ethiopia

Statement of Declaration

I hereby declare that **The Influence of Project Risk Management Practice on Success of CBE's Projects** is project which wholly was the work of **Million Abera.** I have carried out the present study independently with the guidance and support of the research advisor, **Dr. Workneh Kassa.** Any other contributors or sources have either been referenced in the prescribed manner or are listed in the acknowledgements together with the nature and the scope of their contribution. And the study has not been submitted for award of any Degree or Diploma Program in this or any other Institution.

Million Abera

Signature _____

Date _____

_____

Date: May, 2018

APPROVAL

This is to certify that this thesis entitled "**TheInfluence of Project Risk Management Practice on Success of CBE's Projects**" by **Million Abera** submitted in partial fulfillment of the requirement for the award of the Degree of Masters of Arts in Project Management, submitted to St. Mary's University graduate studies department of Project Management under my guidance and supervision.

Name of Advisor_____

Signature _____

Date _____

St. Mary's University School of Graduate Studies

THE INFLUENCE OF PROJECT RISK MANAGEMENT PRACTICE ON SUCCESS OF CBE'S PROJECTS

By MILLION ABERA

APPROVAL OF BOARD EXAMINERS

Chairperson, Board Committee

Name: _____

Signature: _____

Date: _____

External Examiner

Name: _____

Signature: _____

Date: _____

Internal Examiner

Name: _____

Signature: _____

Date: _____

Acknowledgment

First of all, may all praise be to my 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 project. I would like to thank Mr. Tekle Asfaw for giving me constructive idea during the research proposal defense. My gratitude also goes to Hiwot Geremu for her day to day support in the course of this thesis work and last but not least I would like to extend my gratitude to my brother Zerihun Abera for his material support.

I would also like to extend my gratitude to all of my friends who supported me during the completion of this project.

List of Tables

Abstract

This study is sought to establish the extent of application of project risk management practices such as risk identification, risk analysis and ranking, risk response and monitoring and use of risk management tools on Commercial Bank of Ethiopia projects and the influence of these practices on the success of these projects. This study adopted the case study of the CBE which has implemented 11 projects which constituted this study's targeted population. The projects had been implemented over the 3 years period from July 2015/16 to June 2017/18. Primary data were collected for the purpose of this study. It was collected using self-administered structured questionnaires and also secondary data were used. Descriptive statistics were used to analyze the data by way of percentages, means, variance, standard deviation, correlation analysis and multiple regression analysis. The regression analysis showed that the variables risk identification, risk analysis, risk ranking, risk response and monitoring , and risk monitoring tools and techniques have a significantly influence on the project success. Hypothesis test was done and they are all significant. Findings from the study revealed that, risk management practices have been applied in projects. From the analysis of the data collected, it was proved that risk management has a positive correlation with project success. When used consistently, risk management practices increased the chances of project success. Due to the moderate application of risk management practices on uncertainty projects the study concluded that, there's need to create more awareness on project risk management practices. The finding revealed that risk management practices are applied to the projects. Additional tools and risk management practices need to be developed and tested to determine which tools works best under different scenarios and environments. This will ensure that risk management improves project performance and success.

Key words: *identification, analysis, prioritization, response and monitoring, tools and techniques, success factor.*

Acronyms

CBE	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 content

Chapter Four
Results and Discussion

Chapter Five
Summary, Conclusion and Recommendation

CHAPTER ONE

INTRODUCTION

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)

CBE implements projects worth hundred Millions of Birr. These projects are majorly new product development and IT related works. Review of these projects has revealed that most of these projects have not been completed on time, budget/cost and/or met quality specifications. Contractors therefore seek extension of time (EoT) and/or variation orders in order to complete the projects and cater for costs attributed to the change in scope.

1.2 Statement of the Problem

The question whether risk management contributes to project success is considered relevant by many from both academic and practitioners' communities. Delays in completion, upward revaluation of project costs, poor quality workmanships and premature termination of major projects are common phenomena in Ethiopia (Alemu Asnakew, 2017) and the projects implemented by CBE also faces this challenges.

Even though a number of scholars like Tegabu (2015), Fekadesillassie (2015) and Mesfin (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. Risks differ between projects due to the fact that every project is unique (Gould and Joyce, 2002). The banking industry has seen lots of challenges when it comes to new product development and system upgrades. These challenges have been caused by lack of proper mechanism for management of projects as most organizations concentrate on project formulation at the expense of implementation (Musau, 2015). Projects undertaken in the construction sector are widely complex and have often significant budgets and thus reducing risks associated should be a priority for each project manager. Risk management in construction projects is the benefits of risk management along with barriers, and recommendations to overcome the barriers to risk management (Tummala et al. 1997; Shen 1997). Majority of the studies that are done in Ethiopia regarding project risk management practice are done on construction risk management.

This study is aimed to answer the influence of risk management practice on success of the project in banking sector.

1.3 Research Question

1.3.1 Main Research Question

Does project risk management practices applied to CBE's projects, and do these project risk management practices influence the success of the projects?

1.3.2 Specific Questions

1. What are the PRM factors that influence project success?
2. How does risk management practices are applied in CBE's projects?
3. What is the level of the overall project success on CBE's projects?

1.4 Objective of the Study

1.4.1 General Objective of the Study

The general objective of the study is to assess the extent of application of project risk management practice on CBE projects and the influence of this practice's on project success.

1.4.2 Specific Objective of the Study

1. To examine the factors influencing the project success in CBEs projects
2. To examine the extent of application of project risk management practices in CBEs projects
3. To assess the overall project success on CBE's projects

1.5 Hypothesis

A hypothesis is a statement based on some assumptions about the relationship between two or more variables that can be tested through empirical data.

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

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

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

H4: Risk monitoring is positively and significantly associated with project success.

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

1.6 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 Identification is the process of determining which risks may affect the project and documenting their characteristics (PMI page.309)

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).

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).

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).

1.7 Significance of the Study

This study will provide some insight about the influence of project risk management practice on projects success. Risk management practitioners will get valuable information on how risk management practices influence the success of projects. This study will also help project managers to understand the effectiveness of PRM practices in ensuring project success.

To scholars the study will form a base for development of PRM as a discipline /field of study and further studies on project risk management and project success. The findings of this study will also add new knowledge about PRM and will serve as a basis for further research.

1.8 Scope and Limitation of the Study

The focus of this study is to examine the effect of PRM 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. The studies scope is focused on CBE projects success and the PRM practices.

This study has a number of limitations that can be addressed in future research. The data used in this study limits generalization to 'other banking sector projects. A confirmatory analysis using a large sample gathered across the all banking sector is required for greater generalization of the influence of project risk management practices to the success of projects.

Finally, since there are various risk management practices and tools available, further research is needed to find out what works best in what circumstances and environments.

CHAPTER TWO

LITRATURE REVIEW

2.1 Introduction

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.

2.2 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 or 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. 11 provide 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 ^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. Horine (2005) identified 11 sources of project risks as detailed in the table 2.4.

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) andThe 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 an d scope.

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), Artto 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), TsionFekadesillassie (Addis Ababa University, 2015) and Addis Mesfin (Addis Ababa University, 2014) have explored project risk management practice on construction projects and

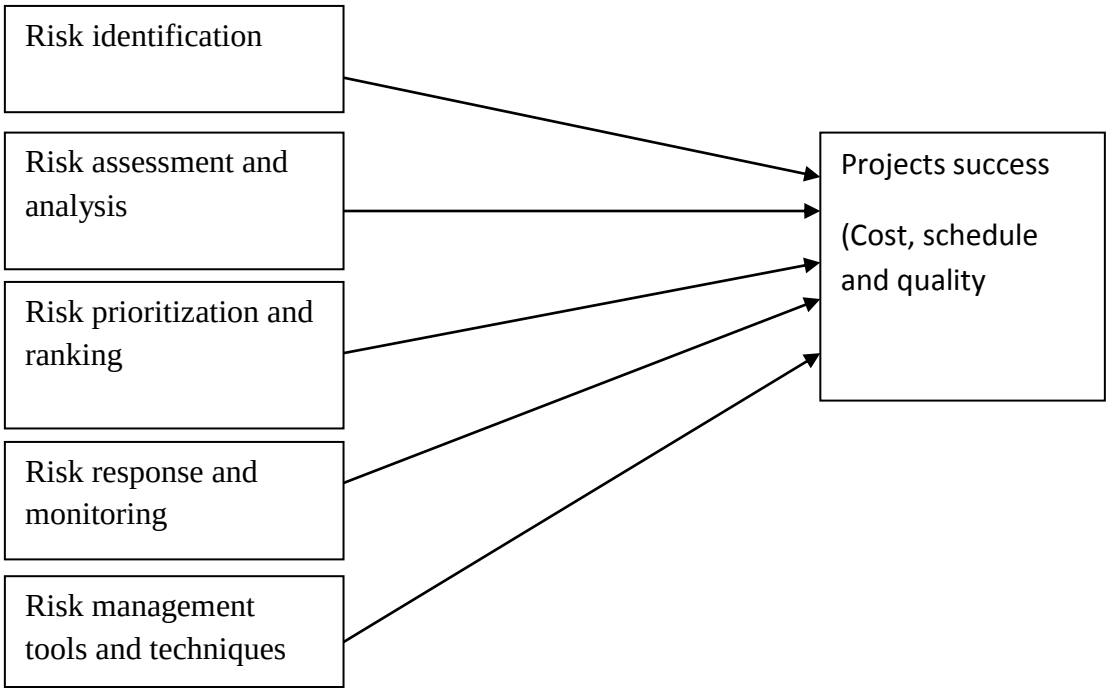
others, as yet, there does not appear to be any study that has considered the influence of PRM on the success of projects in Ethiopian banks. Majority of the studies that are done in Ethiopia regarding project risk management practice are done on construction risk management.

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 studythat 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 will be 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 (Source: Own literature review)



CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The designing and methodological aspect of a particular study is the roadmap that the study should follow in its pursuit of the desired outcome. Hence, due care shall be made while spelling out these roadmap. In view of that, a detailed account has been given to the description of the particular design the research would employ; the data sources and methods of collection; the target population, unit of analysis and respondents; the types of instruments and their development procedure; the variables and corresponding measurement items; and data processing, analysis and presentation procedures. In relation to research design, census is chosen as it can effectively answer the research question.

3.2 Research Approach and Research Design

Research approach, is a strategy or philosophy utilized in research work (Saunders, 2009).There are two types of research approach. These are qualitative and qualitative research approach.

Quantitative research is related to objective measurement and statistical analysis of numeric data to understand and explain phenomena (Ary, et al., 2002). In this research method, data is quantified and statistical methods are used in the data analysis. The primary goal of this research method is to seek evidence about a characteristic or a relationship and to use of statistical inference to generalize obtained results from the population (Patrick, 2008).

Qualitative research is an approach that study phenomena in their natural settings, without a predetermined hypothesis. In this research approach, data is verbal or visual and it aims to provide insight and understanding of the given phenomena which avoids numeric data and gathers information through interviews and observation (Ary, et al., 2002). In general, quantitative research is associated with a positivist research perspective, while qualitative research is associated with an interpretive research perspective. Positivist designs seek generalized patterns based on an objective view (measurable property) of reality independent of

the observer (researcher) and his or her instrument, while interpretive designs seek subjective interpretations of social phenomena from the perspectives of the subjects involved (Anol, 2012).

The current study was adopted both quantitative and quantitative research approach.

Research design is a blueprint for empirical research aimed at answering specific research questions through specifying the methods and procedures for collecting and analyzing the needed information (Bhattacherjee, 2012). Therefore, use of an appropriate research design is something that could not be subjected to compromise if a viable research finding is sought to be achieved.

Three possible types of research designs that can be undertaken while conducting research: (i) exploratory, (ii) descriptive and (iii) explanatory studies. An exploratory study pertains to research that aims at shedding new light on a given subject and is often done to clarify the general understanding of a certain problem. Descriptive studies on the other hand, aim to describe persons, occurrences and situations. Lastly, explanatory studies are studies that show relationships between variables in order to explain certain problems or events (Saunders, *et al.*, 2007). For the purposes of this research report, both the exploratory and descriptive approaches were followed.

Therefore, the researcher choose to employ descriptive and explanatory research approaches in order to give an adequate depiction of the association between the influence of project risk management and the success of projects in the context of Commercial Bank of Ethiopia. Moreover, obtained information from a cross-section of a population at a single point in time is a reasonable strategy for pursuing many descriptive researches (Ruane, 2006), hence justifying the use of a cross-section descriptive analysis in this particular study.

Bryman and Bell (2007) outline five different research designs: 1) experimental design; 2) cross-sectional or social survey design; 3) longitudinal design; 4) case study design; and 5) comparative design. The current research adopts the cross-sectional census survey design. In Cross-sectional census surveys, independent and dependent variables are measured at the same point in time (Bryman& Bell, 2007). The cross-sectional design entails the collection of data for more than one case (usually quite a lot more than one) and at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variables

(usually many more than two), which are then examined to detect patterns of association (Bryman and Bell, 2007).

This particular study would adopt a descriptive cross-sectional census survey research design to quantitatively review the relationship between the influence of project risk management practice and project success of the Bank.

3.4 Population of the Study

The target population of this study was members of different projects in CBE from program management office at head office. The reason for selecting this organization is due to the banks high coverage, which is CBE, is huge and can cover the rest of banks projects and capital.

All members of Commercial Bank of Ethiopia's project management office are taken to constitute the study population. Due to small number of the target population, the proposed study chooses to consider the entire population in the study, i.e. to conduct census survey, rather than sampling form. This is on the basis of the suggestion that if the target population is smaller (e.g. 200 or less) census survey is very appropriate since virtually all population would have to be sampled in small populations to achieve a desirable level of precision (Israel, 2013). Hence, since the study covers all members of the projects census were used to conduct the research.

CBE has implemented eleven projects. The sizes and scope of these major projects have varied from projects to projects. Over its establishment CBE'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 bank there are 143(One Hundred Forty Three) employees.

3.5 Data Collection

Both primary and secondary sources of data/information used for the purpose of conducting this particular research. 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 was gathered through a well-developed questionnaire from the entire population of the bank's 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 the bank are used to extract any sort of essential information to strengthen the study findings.

Primary data was collected for the purpose of this study. It 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 contained both closed and open ended questions. For most of the sections, those censuses 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. The questionnaire had 4 sections;

Part I: This evaluated project success.

Part II: Evaluated risk management practices and their influence to project success.

Part III: General open ended question.

3.6 DATA ANALYSIS

All statistical procedures was conducted using Statistical Package for Social Science (SPSS) version 20 software and relevant data analysis needed to answer the research questions were carried out. The data analysis was made by using both descriptive and inferential statistics. Descriptive statistics such as frequencies, percentages, means and standard deviations were used to summarize and present the data. In addition to this, Pearson correlation coefficient was used to show the association between the independent and dependent variables. Finally to examine the predicting ability of the independent factor on dependent variable, multiple regressions were conducted.

3.6.1 MULTIPLE LINEAR REGRESSION ANALYSIS MODEL

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;

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + £$

Where Y is the dependent variable (project success),

β0. β1. B2. B3, β4 and β5- are parameters,

Xi is the risk identification independent variable,

X2 is the risk analysis independent variable,

X3 is risk ranking independent variable,

X4 is risk response and monitoring independent variable; and

X5 is RM tools and techniques independent variable and **£** is the error term of the equation.

3.7 VALIDITY AND RELIABILITY

To measure the quality of the study two measuring criteria's are applied. These are validity and reliability. Validity is concerned with whether the findings are really about what they appear to be about (Sounders et. al., 2003). Validity defined as the extent to which data collection method

or methods accurately measure what they were intended to measure (Sounders et. al., 2003). Instruments were initially piloted to small numbers of respondents to verify whether the questions are easy to understand, appropriate to the research topic, unambiguous (Fellows & Liu, 2008), and to gain some idea of the time required to administer the questionnaire. It is also important to get feedback and input on other important issues that may be worthy of consideration that the initial instrument may have missed. This also gives the researcher and indication of whether the instrument is measuring the right concept, hence its validity and reliability. There are different types of validity in measurement procedures;

Face validity; refers to whether an indicator seems to be a reasonable measure of its underlying construct "on its face" (Anol, 2012). To ensure face validity of measurement procedure pilot study on 20 respondents was conducted to examine the face validity of questionnaire items and to make sure the instructions in the questionnaire were adequate and appropriate adjustment have been made.

Content validity; Content validity is an assessment of how well a set of scale items matches with the relevant content domain of the construct that it is trying to measure (Anol, 2012). Content validity is the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose.

Reliability refers to the absence of random error, enabling subsequent researchers to arrive at the same insights if they conducted the study along the same steps again (Yin, (2003).To increase the reliability of the survey, five-scale system (Likert scale) questionnaires was used. The reliability in such scale is higher compared to a two- scale system (Hayes, 1992). Five is an effective choice since the reliability decreases if the number of response options is greater than five (Hayes, 1992**)**. The tendency toward consistency found in repeated measurements is referred to as reliability (Carmines & Zeller, 1979). The researcher used the retest method to determine the reliability of the instruments by giving the same test to the same people. This was achieved by asking the same question in a slightly different way at a later time or in a different part of the questionnaire. The reliability of the instrument was estimated by examining the consistency of the results between the two measurements.

3.8 Ethical Considerations

In the context of research, according to Saunders, Lewis and Thornhill, (2001:130), "… ethics refers to the appropriateness of your behavior in relation to the rights of those who become the subject of your work, or are affected by it".

The data was collected from willing respondents without showing any unethical behavior or forceful action. The results or a report of the study was used for academic purpose only and response of the participants was kept confidential and analyzed in aggregate without any change by the researcher. In addition, the researcher respects the work of previous investigations or study and cites appropriately those works that has been taken as a basis

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data analysis and discussion of the research findings. To test all the hypotheses, data were analyzed using SPSS version 20. An alpha level of .05 was used for significance in all data analysis. The chapter starts by describing the nature of the study sample or profile of the respondent using descriptive statistics. Next to that variable descriptive statistics are presented. Multiple linear regressions were also employed to test hypothesis and achieve the study objective that focuses on identifying the most important underlying factors of project success. Cronbach‘s alpha were more than 0.7 which is used to test goodness and internal consistency of the measure.

4.2 Response Rate

As implied in the preceding part of this study, the entire population of commercial banks of Ethiopia program management division was considered in the study. Out of the total population of 143 respondents, 131 respondents have successfully responded by completing the questionnaire, thus achieving a response rate of 91.6%. The response rate was considered statistically sufficient for further analysis.

The census was carried out in commercial bank of Ethiopia program management office Addis Ababa. After completion of the data gathering, the data analysis phase followed. Before that the data file editing had to be conducted. Editing refers to “The process of checking the completeness, consistency, and legibility of the data and making the data ready for coding and transfer storage” (Zikmund et al., page 10). The data file was checked for errors in terms of values that fall outside the range of possible values for a variable (Pallant, 2010). No abnormal values were found. However, some missing data were identified. In total 12 questionnaires were not filled properly and they had a lot of missing data. Therefore, 131 questionnaires were properly filled and were used for the final analysis.

Reliability test is more to do with the consistency of how a set of variables is measured. Reliability refers to the absence of random error, enabling subsequent researchers to arrive at the same insights if they conducted the study along the same steps again (Yin, (2003). The Cronbach Alpha coefficient is an indicator of internal consistency of the scale. A high value of the Cronbach Alpha coefficient suggests that, the items that make up the scale "hang together'' and measure the same underlying construct. A value of Cronbach Alpha above 0.70 can be used as a reasonable test of scale reliability (Gaur A. and Guar S., 2009). Hence, all the independent and dependent variables' CronbachAlpha value was above the minimum required value of 0.70 To see the internal consistency of the measures cronbach's alpha for items under each variables was conducted and the result is presented in the table 4.10 below.

Table 4.1 Cronbach's alpha (source: questionnaire survey)

	Cronbach's Alpha	N Items
Variable		
Risk Identification	.738	6
Risk Analysis	.760	4
Risk Prioritization	.793	4
Risk Response and monitoring	.844	13
Risk management Tools	.712	3
Success factor	.915	3
		33

4.3 Descriptive Statistics

Descriptive analysis refers to "The elementary transformation of raw data in a way that describes the basic characteristics such as central tendency, distribution and variability" (Zikmund et al., 2010).

4.3.1 Descriptive Analysis of Application of PRM to the Projects

The respondents were questioned to indicate the application of project risk management practices to their projects including risk identification, risk analysis and ranking, risk response and monitoring and use of risk management tools and techniques. The researcher wants to check whether the risk management practice was extensively used in the project or not. This was done in order to determine which risk management practice was extensively used in the project. Results are presented in the table below;

Table 4.2: Application of project risk management practice (Source: Questionnaire survey)

Descriptive Statistics

	N	Mean	Std. Deviation
Risk Identification	131	3.2850	.53808
Risk Analysis	131	3.3225	.51093
Risk Prioritization	131	3.3130	.56017
Risk Response and monitoring	131	3.3523	.42154
Risk mgt tools and techniques	131	3.3969	.64598
Valid N (listwise)	131		

It can be seen that the application of the five risk management practices was relatively moderate. risk management tools and techniques risk monitoring was the predominant risk management practice recording a mean score of 3.3969 and 3.3523 as compared to the least used practice of using risk identification with a mean score of 3.2850 for the projects.

From the table above, respondents of the projects felt that PRM practices were well applied to their projects with a mean score range of 3.3969 to mean score 3.2850.

4.3.2Descriptive Analysis of Project Success

The success or failure of the project is measured against the time, cost and technical performance (quality) dimensions.

From the analysis shown on below table it's shown the factors that determine the success of a project. These factors include meeting quality specifications, completing the project within budget and completing the project on schedule among others. Further the researcher sought to establish whether there existed any relationship between PRM and project success by correlating data's. The respondents were required to indicate the level of project success factors to their projects.

Table 4.3: project success (Source: Questionnaire survey)

Descriptive Statistics

	N	Mean	SD
Projects are completed within quality specifications	131	3.2061	.66469
Projects are completed within budget	131	3.2672	.64240
Projects are completed within time	131	3.2824	.65954
Valid N (listwise)	131		

From the analysis above, the respondents indicated that completing project with time was the most important success factor for their project with a mean of 3.2824 followed by completing the project on budget with a mean of 3.2620. Completing project with expected quality was the least with a mean of 3.2061.

4.4 FACTORS INFLUENCING THE PROJECT PERFORMANCE OF CBE

4. 4.1 Normality Test

According to Yi(1988) one of the first thing that should be taken care of before delving in to the main part of the analysis is to check whether the data are normally distributed or not. For this checking, Yi(1988) suggests that, the standardized skewness distribution result and a Kurtosis result must be between the ranges of +2 or -2.

Table 4.4 (source; questionnaire survey)

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Success Factor	131	-.222	.212	-.513	.420
Risk Identification	131	-.149	.212	-.431	.420
Risk Analysis	131	-.620	.212	.203	.420
Risk Prioritization	131	.133	.212	-.726	.420
Risk Response and monitoring	131	-.117	.212	-.486	.420
Risk Management Tools	131	.132	.212	-.690	.420
Valid N (listwise)	131				

Table 4.10 (source; questionnaire survey)

The result in the above table indicates that all the variables are with skewness and kurtosis which is between the ranges of +2 or -2.

4.4.2 Multi-Collinearity

In order to enhance the regression analysis, collinearity statistics was tested. VIF (variance Inflation Factor) measures multi-collinearity, that is whether the independent variables are highly correlated or not. If correlated, their significance on the dependent variable will be affected. As the value of VIF shown in Table 4.11, it is not five and above and tolerance was above 0.1 the variables are not highly correlated and hence the regression analysis will see clearly the significance of the coefficients on the dependent variable, Cohen (1988).

Table 4.5 Collinerity test coefficients (source; questionnaire survey)

Collinerity statistics	VIF
Risk identification	2.517
Risk analysis	2.726
Risk prioritization	3.836
Risk response	4.341
Risk management tool	2.117

a. Dependent Variable: project success

The results of this analysis indicate how well a set of independent variables is able to predict the dependent variable. Furthermore, it shows how much unique variance in the dependent variable is explained by each of independent variables (Pallant, 2010). The Multiple Regression analysis assumes that the relationship between a single dependent variable and each independent variable is linear.

Regression of RMP with Quality

Table 4.6: (source: questionnaire survey)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.845	.714	.703	.36249

a. Predictors: (Constant), identification, assessment, ranking, response, tools and techniques

b. Dependent Variable: project success

The model in the above table 4.13 shows how much of the variance in the measurement of project quality is explained by the model. Based on this, model coefficient of determination or R^2 obtained indicates that 70.3% (adjusted R square of 70.3% with estimated standard error .36249) of the variation in the measurement (project success) function can be explained by identification, assessment, ranking, response and tools and techniques. The R^2 was high which indicates that the independent variables are highly determining the level of project quality.

Table 4.7: (source: questionnaire survey)

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	41.010	5	8.202	62.421	.000[b]
	Residual	16.425	125	.131		
	Total	57.435	130			

a. Dependent Variable: Success Factor

b. Predictors: (Constant), Risk Management Tools, Risk Response, Risk Analysis, Risk Identification, Risk Prioritization

In testing the hypothesis of no linear relationship between the predictor and dependent variables, i.e., R-square = 0, the Analysis of Variance (ANOVA) is used (Robert, 2006). Table 4.7 presents the F statistics to test how well the regression model fits the data. If the f-statistics is big and the significance level less than 0.1 then the hypothesis of no linear relationship between the independent variable and dependent variable is rejected. Thus in this study F-statistics with 62.421 and significance value of 0.000 the regression model fits the data.

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.

Table 4.8 Estimation Result of Regression Function (source: questionnaire survey)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.991	.260		-3.811	.000
	Risk identification	.235	.094	.190	2.502	.014
	Risk analysis	.289	.103	.222	2.811	.006
	Risk prioritization	.287	.111	.242	2.580	.011
	Risk response	.581	.157	.368	3.698	.000
	Risk management tools	-.127	.072	-.123	-1.773	.079

a. Dependent Variable: success

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + £$

$Y = -0.991 + 0.235X1 + 0.289X2 + 0.287X3 + 0.581X4 + 0.127X5$

Where Y is the dependent variable (project success), Xi is the risk identification independent variable, X2 is the risk analysis independent variable, X3 is risk ranking independent variable,

X4 is risk response and monitoring independent variable while X5 is RM tools and techniques independent variable.

According to the regression equation established, taking all factors (risk identification, analysis, ranking, response and tools and techniques) constant at zero, the project success will be -0.991. The data findings analyzed also show that taking all other independent variables at zero, a unit increase in risk identification will lead to a 0.235 increase in project success. A unit increase in risk analysis will lead to a 0.289 increase in project success; a unit increase in risk prioritization will lead to a 0.287 increase in project success; a unit increase in risk response and monitoring will lead to a 0.581 increase in project success while a unit increase in RM tools and techniques will lead to a 0.127 increase in project success.

Among the five constructs, the multiple linear regression analysis of standardized coefficients revealed that risk identification, risk analysis, risk prioritization, risk response and risk management tools and techniques was a significant predictor of project success at 5% significance level. The effect of all independent variables was positive: risk identification

(Beta= .190, P=.014), risk analysis (Beta=.222, P=.006), risk prioritization (Beta=.242, P=.011), risk response and monitoring (Beta=.368, P=.000) and risk management tools and techniques (Beta=.123, P=079). The standardized Beta coefficient for risk management tools and techniques was higher than other variables and lower risk prioritization which indicates that risk management tools and techniques is very important factor in predicting project success and risk prioritization is with little importance in predicting the dependent variable.

Regression of RMP with scedule

Table 4.9: (source: questionnaire survey

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.829	.687	.675	.37628

a. Predictors: (Constant), identification, assessment, ranking, response, tools and techniques

b. Dependent Variable: project success

The model in the above table 4.15 shows how much of the variance in the measurement of project time is explained by the model. Based on this, model coefficient of determination or R^2 obtained indicates that 67.5% (adjusted R square of 67.5% with estimated standard error .37628) of the variation in the measurement (project budget) function can be explained by identification, assessment, ranking, response and tools and techniques. The R^2 was high which indicates that the independent variables are highly determining the level of project quality.

Table 4.10 (source: questionnaire survey)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.773	.270		-2.866	.005
	Risk identification	.233	.097	.190	2.399	.018
	Risk analysis	.195	.107	.151	1.826	.070
	Risk prioritization	.338	.115	.287	2.929	.004
	Risk response	.613	.163	.392	3.760	.000
	Risk management tools	.157	.074	.154	2.113	.037

a. Dependent Variable: success

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + £$

$Y = -0.773 + 0.233X1 + 0.195X2 + 0.338X3 + 0.613X4 + 0.157X5$

Among the five constructs, the multiple linear regression analysis of standardized coefficients revealed that the five RMP was a significant predictor of project time at 5% significance level. The effect of all independent variables was positive: risk identification

(Beta= .190, P=.018), risk analysis (Beta=.151, P=.070), risk prioritization (Beta=.287, P=.004), risk response and monitoring (Beta=.392, P=.000) and risk management tools and techniques (Beta=.154, P=037). The standardized Beta coefficient for risk management tools and techniques was higher than other variables and lower risk prioritization which indicates that risk

management tools and techniques is very important factor in predicting project success and risk prioritization is with little importance in predicting the dependent variable.

Regression of RMP with Budget

Table 4.11: (source: questionnaire survey

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.885	.784	.775	.30481

a. Predictors: (Constant), identification, assessment, ranking, response, tools and techniques

b. Dependent Variable: project success

The model in the above table 4.14 shows how much of the variance in the measurement of project budget is explained by the model. Based on this, model coefficient of determination or R^2 obtained indicates that 77.5% (adjusted R square of 77.5% with estimated standard error .30481) of the variation in the measurement (project budget) function can be explained by identification, assessment, ranking, response and tools and techniques. The R^2 was high which indicates that the independent variables are highly determining the level of project quality.

Table 4.12 (source: questionnaire survey)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.930	.219		-4.253	.000
	Risk identification	.166	.079	.139	2.107	.037
	Risk analysis	.394	.086	.313	4.561	.000
	Risk prioritization	.335	.093	.292	3.581	.000
	Risk response	.481	.132	.316	3.639	.000
	Risk management tools	.111	.060	.112	1.851	.067

a. Dependent Variable: success

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + £$

Y = -0.930 + 0.166X1 + 0.394X2 + 0.335X3 + 0.481X4+ 0.111X5

Among the five constructs, the multiple linear regression analysis of standardized coefficients revealed that the five RMP was a significant predictor of project budget at 5% significance level. The effect of all independent variables was positive: risk identification

(Beta= .139, P=.037), risk analysis (Beta=.313, P=.000), risk prioritization (Beta=.292, P=.000), risk response and monitoring (Beta=.316, P=.000) and risk management tools and techniques (Beta=.112, P=067). The standardized Beta coefficient for risk management tools and techniques was higher than other variables and lower risk prioritization which indicates that risk management tools and techniques is very important factor in predicting project success and risk prioritization is with little importance in predicting the dependent variable.

Table 4.13 Estimate result of regression function (source: questionnaire survey)

Hypothesis	Results
H1: Risk identification is positively and significantly associated with project quality (β=0.190, P=.014), schedule (β=0.190, P=.018) and budget (β=0.139, P=.037).	Supported
H2: Risk assessment and analysis have positively and significantly associated with projects quality (β=0.222, P=.006), schedule (β=0.151, P=.070) and budget (β=0.313, P=.000).	supported
H3: Risk prioritizing and ranking is positively and significantly associated with project quality (β=0.242, P=.011), schedule (β=0. 287, P=.004) and budget (β=0.292, P=.000).	Supported
H4: Risk response and monitoring is positively and significantly associated with project quality (β =.368, P=.000), schedule (β =.392, P=.000)and budget (β =.316, P=.000)	Supported
H5: Risk management tools and techniques are positively and significantly associated with project quality (β =.123, P=079), schedule (β =.154, P=037) and budget (β =.112, P=067).	Supported

In testing the hypothesis of no linear relationship between the predictor and dependent variables, i.e., R-square = 0, the Analysis of Variance (ANOVA) is used (Robert, 2006). Table 4.7 presents the F statistics to test how well the regression model fits the data. If the f-statistics is big and the significance level less than 0.1 then the hypothesis of no linear relationship between the independent variable and dependent variable is rejected. Thus in this study F-statistics with 36.421 and significance value of 0.000 the regression model fits the data.

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.

4.5. Risk Management Practices in CBE's Projects

A risk management practice in the bank involves identifying, understanding and determining the potential unsatisfactory outcomes likely to affect a project. After identifications of these undesired events the risks are analyzed based likelihood and impact of the risks. After risks are analyzed, they ranked/prioritized depending on their significance to a particular project.

The study sought to establish the application of project risk management practices such as risk identification, risk analysis, risk ranking, risk response and monitoring and use of risk management tools on CBE projects and the influence of these practices on the success of these projects.

The study revealed that the application of the aforementioned risk management practices was moderately applied to the bank projects. The analysis of application of the risk management practices was moderate with an average mean score of between 3.2710 and 3.4457. Risk prioritization and risk tools and techniques was the predominant risk management practice compared to the least used practice of using risk identification rating of 3.2710. Hence the bank has applied the risk management practice to its projects.

Though risk management practices are applied, they are not as expected as per the response of the respondents.

4.6 Overall Project Success

There are a number of factors that determine the success of a project. These factors include meeting quality specifications, completing the project within budget and completing the project on schedule among others.

The project is successful with overall mean of 3.2519.The respondents indicated that completing the project within time and completing the project within budget was the most important success factor for their project with a mean of 3.2824, and 3.2672. Completing the project within specification or quality was the least important with a mean of 3.2061.

Hence, 69.31% of the respondents agreed that completing the project within budget is crucial for project success, 67.32%% of the respondents agreed that completing the project with schedule is essential for project success. 65.03% of the respondents agreed as the projects are completed within specified quality standard. Overall 67.22% of the projects are successful by budget, time and functionality

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMEDATIONS

5.1 Introduction

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.

5.2 Summary of Findings

The question whether risk management contributes to project success is considered relevant by many from both academic and practitioners' 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 CBE 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 CBE 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 CBE which has implemented 11 projects which constituted this study's targeted population. The projects had been implemented over the 3 years period from July 2015/16 to June 2017/18. 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.Descriptive statistics were used to analyze the data by way percentages, means, variance, standard deviation, correlation analysis and multiple regression analysis.

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. The bank has a risk management section to advice on risk management. It's expected that these actions will/have led to accelerated project success.

Out of the targeted 143 respondents, 131 successfully responded by completing the questionnaire, thus achieving a response rate of 91.6%. Of the 138 respondents is enough to conduct this research. The projects are consisted of a budget of Birr 380,788,418.00 which is considered to as extremely large-scale investment projects. The period of implementation of these projects ranged between 24 to 36 months. These projects which were typically complex attracted a lot of public attention because of substantial impacts on community, the Banking business and technological advancement.

On project success the study established that majority of projects had completed within time with a mean and standard deviation of 3.2824 and 0.65954 respectively. Most projects were also completed within budget with a mean of 3.2672 and standard deviation of 0.64240. On quality, projects meet technical specification with mean of 3.2061 and standard deviation of 0.66469. When we compare these three project success factors, completing the project within budget was high and low with quality.

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 dependent 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 response and monitoring and risk analysis 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.

5.3 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 CBE and determining the relationship between project risk management practices and the success of projects implemented by the CBE

After considering the results from the study, the following conclusions can be deduced. First, risk management practices are mostly applied to complex, huge investment, high uncertain and more risky projects. The higher the uncertainty, the higher is the risk and the higher is the extent of the use of risk management practices. While this is so, even low uncertainty projects suffer delays, project budget overruns and poor quality products and their success is not guaranteed. These projects too can benefit from risk management application that will improve their success rate.

Most projects had applied risk management practices such as risk identification and risk response and monitoring. Risk identification and prioritization and use of risk management tools and techniques recorded a low mean score as compared to risk analysis and risk response strategies.

Despite this high mean score, most of the projects recorded delays, project budget overruns implying that risk management should be viewed as a project management process with the five variables consistently applied. Risk analysis and ranking allows project managers to emphasis more on high probability, high impact risks. 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.

The regression model confirms that application of risk management practices (independent variables) were consistently applied on a project increases the rate of the project success (dependent variable)

5.4 Recommendations

The finding of this study has implications for banking sector projects. Banking sector 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. The following are the recommendations of this study.

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 very important. Hence, these practices should be applied at higher level for all projects.
2. The bank 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 will ensure that risk management improves project performance and success.
3. Project risk management should become part of the culture in project management activity and routine component in any project plan and review activity

References

Addis Mesfin (2014). The study on construction contract risk management practice in Ethiopian buiding construction projects. Addis Ababa university, Ethiopia

AnolBhattacherjee 2012. Social Science Research: Principles, Methods, and Practices. University of south Florida Tampa, Florida, USA

Artto.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 of 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. Upper Saddle River (NJ)

PMI (2004), Guide to the Project Management Body of Knowledge - PMBOK Guide, PMI, 3rd Edition.

Project Management Journal.project performance: paper presented at the Second International Postgraduate project success.International Journal of Project Management.

Research Conference in Built and Human Environment, University of Salford, Salford, 11-12 April.

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 constructiontime for a fundamental shift.International Journal of Project Management, Vol. 19, pp. 89-101.

Uncertainty.*International Journal of Project Management, Vol. 21,* pp. 97-105

TemsegenTegabu (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 Marketing Science*, 74-94.

Zikmund, W. Babin, B., Carr, J., Griffin, M. (2010).Business Research Methods. 8th edition, South-Westrn, Cengage Learning

Zikmund, W. G., (2003), Business research methods, 7th edn., Thomson South-Western, USA, 748page

APPENDIX

QUESTIONNAIRE

St. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF PROJECT MANAGEMENT

Dear respondent,

I am graduate student at St. Mary's university school of graduate studies. Currently, I am conducting a research study on "The influence of project risk management practices on success of CBE projects'' in partial fulfillment of Master of Arts in project management.

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

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 "√"markon 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 Bank's performance and success of the Bank					
3.1.5	The effective management of risk is central to your Banks' 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 bank 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 bank 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 Bank 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, per0formance 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 Bank					
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 CBE projects?

   ……
   ……