



ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE

Assessment of Project Risk Management practices: The case of Bank
of Abyssinia Increase Systems Availability Project(ISAP)

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College of Business and Economics
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**ASSESSMENT OF PROJECT RISK MANAGEMENT PRACTICES: THE CASE OF
BANK OF ABYSSINIA INCREASE SYSTEMS AVAILABILITY PROJECT(ISAP)**

By: Andenet Mesekere

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Declaration

I, the under signed, declare that this thesis is my original work and has not been presented for a degree in any other University, and that all sources of materials used for the thesis have been duly acknowledged.

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Acronyms

BoA	Bank of Abyssinia
ISAP	Increase Systems Availability Project
FY	Fiscal Year
IT	Information Technology
IS	Information Systems
PMO	Project Management Office
FY	Fiscal Year
SPSS	Statistical Package for Social Sciences
WBS	Work Breakdown Structure
RMP	Risk Management Plan
SWOT	Strength Weakness Opportunity Threat
NPL	Non Performing Loan

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Abstract

Risk as a threat that can affect success of projects if not addressed well. Risk management is a key part of project management for any project size. Although there is high importance of risk management to the success of Information Technology projects, the adoption of these risk management methods in practice is inconsistent. The main objective of the study was to describe the practice of project risk management practices in Bank of Abyssinia Increase Systems Availability Project. The scope of the study was limited to the extent of assessing, evaluating, analyzing, describing and identifying project risk management practices in Bank of Abyssinia Increase Systems Availability Project. The research was bounded by time and categorized under cross-sectional type. The design was descriptive, the sampling technique was purposive. Data had been collected through semi structured interview; closed ended questionnaire and document analysis. The respondents were comprised of project manager, project team, experts of project management office, and IT steering committee. The quantitative data was analyzed statistically using Statistical Package for Social Sciences and the qualitative data was analyzed by relating the results with literatures. In addition, reliability and validity have also been taken into consideration. The main findings revealed that risk identification, qualitative risk analysis, monitoring and control were fairly practiced. While, the practice of risk planning and risk response was poor. Whereas, the practice of quantitative risk analysis was very poor. As a recommendation, it is better the bank looking into best practices to apply standard project risk management processes, tools and techniques in future projects in order to achieve projects' objective successfully.

Key words: Risk, Risk Management, Information Technology, Project Risk Management

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the study

According to Wysocki (2014), a project is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification. Wysocki (2014), also added that projects grow out of problems or opportunities. Projects arise out of unmet needs. Those needs might be to find a solution to a critical business problem that has evaded any prior attempts at finding a solution.

According to APM (2006), all projects are inherently risky because they are unique, constrained, complex, based on assumptions, and performed by people. Risk is an exposure to the possibility of economic or financial loss or gains, physical damage or injury or delay as a consequence of the uncertainty associated with pursuing a certain cause of action (Chapman C.B., 1983). Project risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on at least one project objective, such as time, cost, and quality PMI (2004). To increase the chances of a proposed project succeeding, it is necessary for the organization to have an understanding of potential risks, to systematically and quantitatively assess these risks, anticipating possible causes and effects, and then choose appropriate methods of dealing with them (Mobey & Parker, 2002).

Risk management is thus an important tool to cope with such substantial risks in projects by assessing and ascertaining project viability, analyzing and controlling the risks in order to minimize loss, alleviating risks by proper planning and avoiding dissatisfactory projects and thus enhancing profit margins (Lam et al. 2007). PMI (2008) proposed six risk management processes: risk management planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk responses planning and risk monitoring and control.

According to PMI (2013), plan risk management is the process of defining how to conduct risk management activities for a project. Identify risks is the process of determining which risks may affect the project and documenting their characteristics. Perform qualitative risk analysis is the process of prioritizing risks for further analysis or action by assessing and combining their

probability of occurrence and impact. Perform quantitative risk analysis is the process of numerically analyzing the effect of identified risks on overall project objectives. Plan risk responses is the process of developing options and actions to enhance opportunities and to reduce threats to project objectives. Control risks is the process of implementing risk response plans, tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness throughout the project.

According to Legris & Colletette (2006), organizations decide to invest to IT, because they expect it will improve their performance in cost, productivity, or quality. Although there was high importance of risk management to IT project success, the adoption of these risk management methods in practice is inconsistent (Bannerman P.L., 2008; Taylor H., Artman E. & Woelfer J.P, 2012). Therefore, the basic objective of this research was to describe the practice of project risk management in BoA ISAP.

1.2 Background of the Organization

The present-day BoA was established on February 15, 1996 (90 years to the day after the first but defunct private bank was established in 1906 during Emperor Menelik II) in accordance with 1960 Ethiopian commercial code and the Licensing and Supervision of Banking Business Proclamation No. 84/1994. BoA started its operation with an authorized and paid up capital of Birr 50 million, and Birr 17.8 million respectively, and with only 131 shareholders. In two decades since its establishment BoA has registered a significant growth in paid up capital and total asset. It also attracted many professional staff members, valuable shareholders and large customers from all walks of life. This performance indicates public confidence in the Bank and reliability and satisfaction in its services. Currently, employing the state-of-art banking technology, the Bank provides excellence domestic, international and special banking services to its esteemed and valuable customers. It also strives to serve all economic and services sectors via its ever increasing branch networks throughout the country. Currently the bank has more than 5005 staff and more than 280 branches. In addition, an authorized and paid up capital of BoA as at 30 June 2017 is Birr 4 billion and Birr 1.8 billion, respectively, a total deposit balance of Birr 20.7 Billion and a total loans and advances of Birr 14.11 billion, which in effect enhance the risk absorbing and the lending capacity of the Bank. Bank of Abyssinia's vision is to be the bank of choice for customers, employees and shareholders. Its mission is to provide customer-focused financial services through

competent, motivated employees and modern technology in order to maximize value to all stakeholders.

In order to achieve the above vision and mission, the bank has initiated different projects and eleven of them are IT projects. ISAP is one of these projects and it was scheduled to begin on October 01, 2016 and end on September 30, 2017. However, ISAP encountered schedule slippage and cost overrun. The success of IT projects may be affected by multiple factors, inhibiting them from achieving their objectives and bringing the aspired change. One of the factors that affect project success is risk (Alhawari et al., 2012; Bakker et al., 2010; Bhatia & Kapoor, 2011; Boehm, 1991). Therefore, this research assessed the project risk management practices of ISAP.

1.3 Project Profile

To address demands of customers and modernizing the banking sector implement and avail Any Branch Banking (ABB) and E-Banking services are vital. But operations of these services are dependent on the availability of a network system that connects central system (Datacenter) to each branches and head office. However, network availability interrupted due to various reasons either internally or externally. Therefore, to address the challenges caused by network interruption, ISAP was initiated as a project in the strategic plan(FY2016-FY2020). The main objective of the project is increasing the availability of the systems by enhancing the network performance of

BoA's branch offices. This project is an IT project and organized by a matrix project organization structure. The team members were selected from functional departments and a project manager from IS project office. The project was monitored and controlled by IT steering committee. The project started on October 01, 2016 and scheduled to end on September 30, 2017. However, it couldn't be completed within the schedule and delayed more than 7 months. In addition, the allocated budget was three million birr(3,000,000). However, the actual cost became seven million two hundred thousand birr(7,200,000).

1.4 Statement of the problem

Project risk management has a prominent position in the framework of project management theory and methodology (PMI, 2008). The reason is that unexpected events will usually occur during a project (Pinto, 2007). Given the importance of project risk management in project management functioning, the efficiency of risk management is expected to significantly influence

project performance (Harker and Satvros,1998). Numerous studies have been conducted on the topic. However, in spite of its importance, literature shows that it is the least practiced in developing countries (Mnkandla, 2012; Royer, 2000; Sanchez et al., 2009). Idoko(2008), also noted that many projects in developing countries encounter considerable time and cost overruns, fail to realize their intended benefit or even totally terminated and abandoned before or after their completion. According to the Standish Group 2004 Report: the main reason for project failure (in developed countries) is not the absence of general resources or financial resources, but the lack of Project management capability (Malan et al, 2007).

Elkington & Smallman (2002) have identified that there is a strong link between the amount of risk management undertaken in a project and the level of success of the project in that more successful projects use more risk management. Also the earlier that risk management was used in a project, the more successful it was. It is essential that the risks of a project be assessed at the project brief stage. Risks identified here will not only help the production of the necessary project products, but will increase the chance of overall project success. A significant risk that is not identified and mitigated will become a real problem at some point during the project life cycle (Tinnirello, 2000).

Information and Communication Technology is believed to play an important role in development. However, the success rates of IT projects from 1994-2012 ranged between 16% and 39%, with the remainder having performance issues or being complete failures (Joseph, Erasmus, & Marnewick, 2014). The success of IT projects may be affected by multiple factors, inhibiting them from achieving their objectives and bringing the aspired change. One of the factors that affect project success is risk (Alhawari et al., 2012; Bakker et al., 2010; Bhatia & Kapoor, 2011; Boehm, 1991). Risk management allows controlling the effect of risks and it contributes to the success of projects (Bannerman, 2008; Bhatia & Kapor, 2011; Kwak & Stoddard, 2004).

Successful IT project management was the most desirable for all organizations and stakeholders. IT project success or failure had long been interesting for researchers over the past 20 years. High failure rates of IT projects were caused by completion beyond budget, behind schedule, and without meeting requirements, and could threaten the very existence of the company(Bloch M, Blumberg S & Laartz J., 2016). The preliminary assessment and document review by the

researcher revealed that BoA ISAP encountered major delays and cost overrun. One of the major contributor for such delay and cost overrun was inadequate project risk management. In this regard, standard risk management processes couldn't be effectively applied. These processes are risk planning, risk identification, risk analysis, risk response, risk monitoring and controlling. During document analysis also, the researcher found poor risk management plan, quantitative risk analysis and unclear risk response plan. In addition, the risk monitoring was performed without effective controlling of risks. Therefore, the researcher became initiated to undertake a research on assessing project risk management practices in BoA ISAP. Moreover, as far as the researcher's knowledge, research studies exclusively on project risk management practices in BoA.

1.5 Research Questions

1.5.1 Basic Research Question

What was the practice of project risk management in BoA ISAP?

1.5.2 Sub - Research Questions

- What was the practice of project risk management planning in ISAP?
- How project risks were identified in ISAP?
- What was the process of analyzing project risks in ISAP?
- How to respond to project risks in ISAP?
- What was the practice of risk monitoring and control in ISAP?

1.6 Research Objectives

1.6.1 General Objective

The general objective of the study was to assess project risk management practice in the case of BOA ISAP.

1.6.2 Specific Objective

The specific objectives of this study were:-

- To assess the project risk management planning process in ISAP
- To discover the project risk identification practice in ISAP

- To identify the project risk analysis in ISAP
- To analyze the project risk response method in ISAP
- To assess the project risk monitor and control process in ISAP

1.7 Scope

Because of lack of time and money this study was limited to the extent of assessing, evaluating, analyzing, describing and identifying project risk management practices in BoA ISAP.

1.8 Limitation

Shortages of adequate secondary data and the reluctance of project team to provide the required data shall be some of the limitations of the findings. However, necessary precautions was made so that these limitations couldn't affect the findings of the study through taking appropriate sample size and triangulating different data collection methods.

1.9 Significance of the Study

This study will provide possible suggestions for the improvement of project risk management practices for BoA's projects. In addition, the study shall be used in other companies of the same nature. Moreover, it will help as a source document and as a stepping stone for those researchers who want to make further study on the area afterwards.

1.10 Organization of the Study

The research paper contains five chapters. Chapter one contains background of the study, background of the organization, project profile, statement of the problem, research questions, objectives of the study, scope, limitation and significance of the study. Chapter two is dedicated to review of related theoretical and empirical literatures on the topic. Chapter three is about the research methodology including sources of data, research design, methods of data analysis and ethical consideration. Chapter four contains analysis of the results. Chapter five includes summary, conclusion and possible recommendations based on the findings.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1 Theoretical Literature Review

The aim of literature review is to demonstrate primary and secondary research skills; to show that the researcher understands the research subject; has studied existing works in relation to the research objectives, design and methodology (hart, 1998).

2.1.1 Projects and Project Management

2.1.1.1 Project

According to PMI (2013), a project is a ‘temporary endeavor to create a unique product, services, or results’. Prince2-glosary-of-terms (2009) define a project as a temporary organization that is created for the purpose of delivering one or more business products according to a specified business case. Projects have constraints such as ‘time, scope, and cost’ in which all these need to be balanced in order to achieve desired project success.

2.1.1.2 Project Management

Project management is the application of knowledge, skills, tools and techniques to projects with aim of delivering projects within specified scope, time, and cost (PMBOK, 2013). Project management has 5 process groups and 10 knowledge areas. The 5 process groups are initiation, planning, execution, monitoring and control, and closing (PMBOK, 2013).

- **Initiation process group:** Those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start a project or phase (PMBOK, 2013).
- **Planning process group:** Those processes required to establish the scope of the project, refine the objectives, and define course of action required to attain the objectives that the project was undertaken to achieve (PMBOK, 2013).

- **Executing process group:** Those processes performed to complete the work defined in project management plan to satisfy the project specifications (PMBOK, 2013).
- **Monitoring and Control process group:** Those processes required to track, review and regulate the progress and performance of the project; identify any areas in which changes to the plan are required; and initiate corresponding changes (PMBOK, 2013).
- **Closing process group:** Those processes performed to finalize all activities across all process groups to formally close project or phase (PMBOK, 2013).

2.1.2 Characteristics of Project Management

According to Project Management Maturity Model (OGC, 2010), good project management will be expected to have the following characteristics.

- A finite and defined life span
- Defined and measurable business deliverables that contribute towards the achievement of business objectives
- A defined amount of resources
- Delivery of capabilities from which business benefits and performance improvements can be leveraged
- An organizational structure, with defined roles and responsibilities
- Focus on management and coordination
- Delivery of outputs within time and cost constraints
- Quality management, focusing on fit-for-purpose output based on requirements
- Business cases containing an accurate budget for output delivery
- Risk management focused on cost, quality and timescales for delivery
- Issue management is proactive and focused on ensuring successful delivery
- Project plans that are both product and activity oriented

2.1.3 IT Project Management

Application of knowledge, skills, tools, and techniques to IT project activities in order to meet or exceed IT project requirements (Schwalbe, 2013). Information technology projects involve using network, software, and hardware to create service, product, or result. There are five key issues commonly encountered in IT projects (Bridge, 2015). Number one, there are typically multiple vendors or partners who may be supplying the infrastructure like servers or hardware components, database or firmware, or any other components. Each vendor-partner comes with their own expectations, their assumptions or constraints that must be captured and incorporated into the overall project charter or project plan (Bridge, 2015).

Number two, changing versions and releases. There are multiple components going on and specifically with IT it changes so rapidly between hardware improvements or enhancement coming along, even firmware or software. This can happen in the middle of the project and most of the time they need to be incorporated and constantly monitored (Bridge, 2015).

Then there are complex dependencies. Sometime if there is a delay in one of component, this can have impact on other components which affect all other deliverables of the project (Bridge, 2015). Then there is disaster recovery. The disaster recovery is a project on its own as it needs to be well planned, implemented and tested before the go live of the implemented system. Making sure all people and resources are available to accomplish disaster recovery project is a challenging task (Bridge, 2015). Number five, most importantly, is the support. This should be addressed as early as possible. Making sure there is a proper support when something goes wrong, that they get escalated and get support in a timely manner (Bridge, 2015).

2.1.4 Project Management Body of Knowledge

Project management is regulated by professional bodies. One such body is the PMI. The PMI has published a knowledge guide known as the PMBOK guide. There are ten knowledge areas according to the PMBoK guide (PMI, 2013) as described below.

2.1.4.1 Project Integration Management

Project integration management includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the project management process groups(PMI, 2013).

2.1.4.2. Project Scope Management

Project scope management includes the processes required to ensure that the project includes all the work required and to complete the project successfully. Managing the project scope is primarily concerned with defining and controlling what is and is not included in the project(PMI, 2013).

2.1.4.3 Project time management

Project time management includes the processes required to manage the timely completion of the project. Plan schedule, define and sequence activity, resource and duration estimation, develop and control schedule are the processes required in project time management(PMI, 2013).

2.1.4.4 Project cost management

Project cost management includes the processes involved in planning, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget (PMI, 2013).

2.1.4.5 Project quality management

Project quality management includes the process and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken. It works to ensure that the project requirements, including product requirements, are met and validated (PMI, 2013).

2.1.4.6 Project human resource management

Project human resource management includes the processes that organize, manage, and lead the project team. The project team is comprised of the people with assigned roles and responsibilities for completing the project(PMI, 2013).

2.1.4.7 Project communications management

Project communications management includes the processes required to ensure timely and appropriate planning, collection, creation and distribution, storage, retrieval, management, control, monitoring and the ultimate disposition of project information(PMI, 2013).

2.1.4.8 Project risk management

Project risk management includes the processes of conducting risk management planning, identification, response planning, and controlling risk on a project. The objectives of project management are to increase the likelihood and impact of positive events, and decrease the likelihood and impact of negative events in the project (PMI, 2013).

2.1.4.9 Project procurement management

Project procurement management includes the processes necessary to purchase or acquire products, services, or results needed from outside to the project team. The organization can be buyer or seller of the products, services, or results of a project. It includes the contract management and change control processes required to develop and administer contracts or purchase orders issued by authorized project team members (PMI, 2013).

2.1.4.10. Project stakeholder management

Project stakeholder management includes the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution(PMI, 2013).

2.1.5 Project Risk

Project risk is the combination of probability of an event occurring and its consequences for project objectives, other times positive and others negative (Chapman, Ward, 2003).Risk is not only related to a specific point of actions, but it also relates to future project conditions. Conditions can change during project life cycle and may turn out to be favorable or unfavorable. In addition, it is very difficult to “guess” any change in the future conditions of a project, and so to estimate all the potential risks in the early stages of the project life cycle. PMBOK (2004) states that risk should

consider both the positive and negative effects of a project objective. This is a broad view of risk that includes the terms of threats and opportunities, but is something that can work in theory and fail in practice. Risks and uncertainty could be addressed either as random or epistemic. Random risk means that we can estimate it using probabilities but it still has random outcomes, not predictable. This type of risk can occur because of natural unpredictable variation. According to Pitz and Wallsten (2000), the knowledge of experts cannot be expected to reduce random uncertainty although their knowledge may be useful in quantifying the uncertainty.

An epistemic risk or uncertainty is due to lack of knowledge about the behavior of the system. The epistemic uncertainty can, in principle, be eliminated by sufficient study and, therefore, expert judgments may be useful in its reduction (Oakley and O' Hagan, 2003). An epistemic uncertainty is thus an “unknown event from an unknown set of possible outcomes (Hillson, 2003).

A dynamic risk is a risk where there is a possibility to gain something in the end, whereas a static risk has only losses in the outcomes (Flanagan and Norman, 1993). In the early stage of a project, there is a high degree of uncertainty, which decreases when we have a high degree of background knowledge. It is however essential to mention that a project manager should always be aware both of random and epistemic uncertainty, because they both have great impact in the project outcome.

Bedford and Cook (2001) characterize risk with two elements: hazard (danger) and uncertainty (quantified by probability). Uncertainty is part of our everyday life, since we are unable to predict the future conditions. An uncertainty can lead project to threats of failure or, equally, opportunities. According to Pitz and Wallsten (2000), the knowledge of experts cannot be expected to reduce random uncertainty although their knowledge may be useful in quantifying the uncertainty.

2.1.6 Project Risk Categories

PMI (2013) has categorized risks as external-unpredictable and external-predictable. External unpredictable risks are government regulations, natural hazards, and acts of God. External predictable risks are cost of money, borrowing rates, raw material availability. The external risks are outside of the project manager's control but may affect the direction of the project. The internal risks may be within the control of the project manager and present uncertainty that may affect the project. Internal (nontechnical) risks include labor stoppages, cash flow problems, safety issues, health and benefit plans. Technical risks relate to the utilization of technology and the impact it

has on the direction of the project. Technical risks include changes in technology, changes in state of the art, design issues, production, support, threat, and all other non-project risks. Legal risks include licenses, patent rights, lawsuits, subcontractor performance, and contractual failure.

Ding (1996) proposed that the risk factors can be categorized in three main groups:

- a) Internal risks, means things that the project team can control or influence, such as scope of the project, resource assignments, production costs, etc.
- b) Project- specific risks, means unexpected things during the construction project that leads to time or cost overrunning or in lower level in performance.
- c) External risks, means things that are beyond the control of the project team, such as financial, government actions or actions of God.

a) Internal risks

Internal risks are initiated inside the project (Aleshin, 2001). In many cases, mainly of Joint Ventures Company a very critical risk, which affects directly its performance, is the reduction of autonomy and the contribution of underqualified staff. All these factors affect negatively the company and create problems in its operation. The cooperation among all staff in the company is absolutely necessary in order to be efficient, with high performance and all members involved should be allied and not enemies. A change in technology is a critical factor for the success of the project. This might occur because of the uniqueness of each project. New technology demands qualified staff.

b) Project-Specific Risk Factors

Lack of communication and poor relationships between all parties in a project may expose the project in jeopardize. They should be established a straightforward communication, in order to find solutions in any problem at the moment, and to avoid misunderstandings between parties. Large engineering projects, in order to share risks, due to their dynamic environment, they cooperate with subcontractors. This new cooperation lurks new risks, such as technical qualifications, reliability and financial stability (Akinci and Fischer, 1998). Contractual risks are usually caused by improper

contractual proviso, improper tender documents, or inappropriate types of contracts (Schwartz, 1985).

c) External risks

The political risk includes threats for war, political volatility, changes in laws and convention, labor strikes and so on. It is considered the most significant risk for this category, because any political dispute and political change can affect the project negatively (Ling and Hoi, 2006). Economic risk category includes inflation, changes in exchange rates, risks of economic fluctuation. These factors can have serious collision on the revenue or loss margin in each contributor. Any economic slowdown leads to a shrink of the construction sector. Moreover, changes in fluctuation of exchange rates impinge on directly the profitability of the project (Baker, 1997).

Another critical factor is the environmental risks. We refer to the actions of God, events that occur as an outcome of nature and are often called natural phenomena. The common risks under this category include physical damages, destruction of facilities, equipment, material, even labor death (Rashid, 1991). Social risk factors include security problems, different cultures, religion, and folkways. These risks are not so critical but we should respect them (Barber, 2005).

2.1.7 Project Risk Management Process

Risk management is a procedure to handle the risks in a project and try to mitigate their effects. (Toakley, 1989). According to Kerzner (2003), a risk management strategy must be established early in a project and that risk is continually addressed throughout the project life cycle. A high quality project risk management process must include the following prerequisites (Abrahamson, 1973):

- Fully detailed specification of the project, and all associated risks
- A clear perception of risks that being born by each party (client-contractor)
- Sufficient capability, experience how to handle the risks
- Motivation to manage risks, which requires a clear accountability, responsibility and authority of each party into the project. Handling risks means rewards.

The objective of project risk management is to minimize the probability and impact of negative effects while maximizing the probability and impact of positive effects (PMI, 2013; Fukuda & Kuwano, 2017). The purpose of the Risk Management process in a wider sense should not solely be to ensure a successful project completion but also to increase the expectations of project goals and objectives (Mills, 2001). According to PMI (2013), project risk management includes the processes of conducting risk management planning, identification, analysis, response planning, and controlling risk on a project.

2.1.7.1 Plan Risk Management

Plan Risk Management is the process of defining how to conduct risk management activities for a project. The key benefit of this process is it ensures that the degree, type, and visibility of risk management are commensurate with both the risks and the importance of the project to the organization. The risk management plan is vital to communicate with and obtain agreement and support from all stakeholders to ensure the risk management process is supported and performed effectively over the project life cycle (PMI, 2013). The inputs, tools and techniques, and outputs of this process are depicted in Figure 2.1.

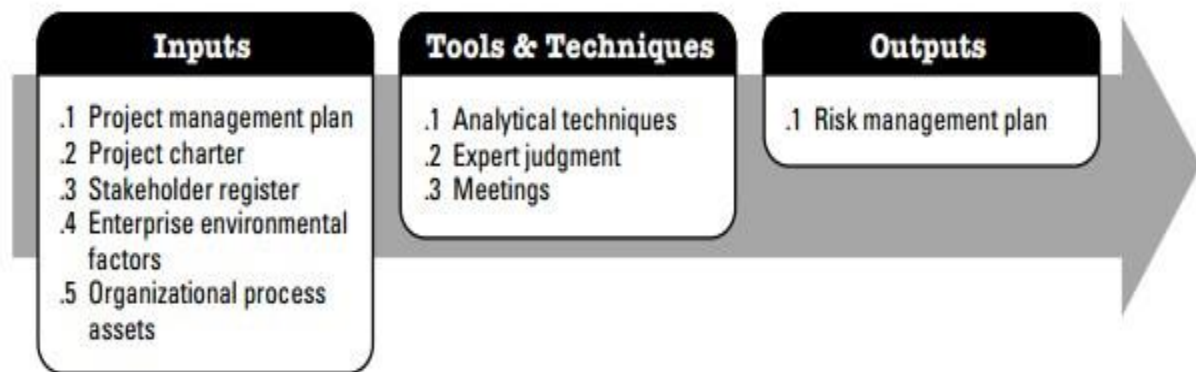


Figure 2.1 Plan Risk Management: Inputs, tools & techniques, and outputs
(Source: PMI, 2013)

According to Kerzner (2009), risk planning is the detailed formulation of a program of action for the management of risk. It is the process to develop and document an organized, comprehensive, and interactive risk management strategy, to determine the methods to be used to execute a program's risk management strategy, to plan for adequate resources. The key to writing a good RMP is to provide the necessary information so the program team knows the objectives; goals;

tools and techniques; reporting, documentation, and communication; organizational roles and responsibilities; and behavioral climate to achieving effective risk management. The RMP should include appropriate definitions, ground rules and assumptions associated with performing risk management on the project, candidate risk categories, suitable risk identification and analysis methodologies, a suitable risk management organizational implementation, and suitable documentation for risk management activities. Since the RMP is a roadmap, it may be specific in some areas, such as the assignment of responsibilities for project personnel and definitions, and general in other areas to allow users to choose the most efficient way to proceed.

2.1.7.2 Identify Risks

Identify Risks is the process of determining which risks may affect the project and documenting their characteristics. The key benefit of this process is the documentation of existing risks and the knowledge and ability it provides to the project team to anticipate events (PMI, 2013). The inputs, tools and techniques, and outputs of this process are depicted in Figure 2.2.

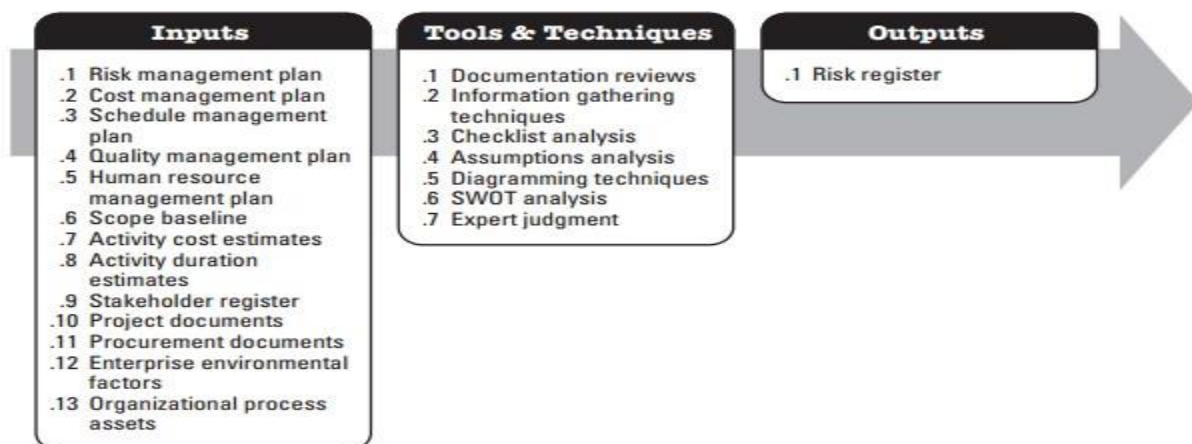


Figure 2.2 Identify Risks: Inputs, tools & techniques, and outputs

(Source: PMI, 2013)

The goal of the risk identification is to identify exhaustively all significant sources of risk in a project, as well as the causes of them (Bing, Tiong and Chow, 1999). The process by which risk identification is accomplished is varied between organizations but usually include one or more of the followings: interviews, brainstorming sessions into risk teams, site visits and a large volume of data from previous experience (Akintola and Malcolm, 1997). Risk identification must continue through all project phases(Kerzner, 2009).

2.1.7.3 Risk Analysis

2.1.7.3.1 Perform Qualitative Risk Analysis

Perform Qualitative Risk Analysis is the process of prioritizing risks for further analysis or action by assessing and combining their probability of occurrence and impact. The key benefit of this process is that it enables project managers to reduce the level of uncertainty and to focus on high priority risks (PMI, 2013). The inputs, tools and techniques, and outputs of this process are depicted in Figure 2.3



Figure 2.3 Qualitative risk Analysis: Inputs, tools & techniques, and outputs

(Source: PMI, 2013)

According to Kerzner (2009), a commonly used qualitative risk analysis methodology involves risk scales (templates) for estimating probability of occurrence and consequence of occurrence, coupled with a risk mapping matrix. The risk is evaluated using expert opinion against all relevant probability of occurrence scales as well as the three consequences of occurrence scales (cost, technical performance, and schedule), and the results are then transferred onto a risk mapping matrix to convert these values to a corresponding risk level. The risk is included in a prioritized list based upon the risk level as well as other considerations (e.g., frequency of occurrence, the time to impact, and interrelationships with other risks). A risk mapping matrix is typically used to convert ordinal probability of occurrence and consequence of occurrence scale values to a corresponding risk level. While there is no preset size for such a matrix, its dimensions must be less than or equal to the number of scale levels used in both the probability and consequence dimensions. With five-level probability of occurrence and consequence of occurrence scales this corresponds to a 55 or smaller matrix.

2.1.7.3.2 Perform Quantitative Risk Analysis

Perform Quantitative Risk Analysis is the process of numerically analyzing the effect of identified risks on overall project objectives. The key benefit of this process is that it produces quantitative risk information to support decision making in order to reduce project uncertainty (PMI, 2013).

The inputs, tools and techniques, and outputs of this process are depicted in Figure 2.4

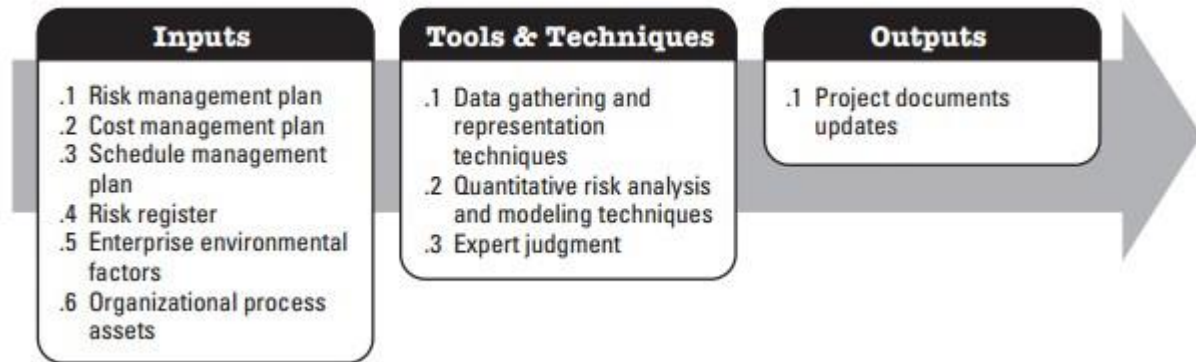


Figure 2.4 Quantitative risk Analysis: Inputs, tools & techniques, and outputs

(Source: PMI, 2013)

According to Kerzner (2009), two keys to producing accurate quantitative risk analysis results include developing an accurate model structure and incorporating accurate probability information. In project risk management there is often insufficient attention paid to each of these items, and the outcome can be inaccurate results. The model structure should be carefully developed and validated before any output is used for decision-making purposes. While this is easy to do for simple decision trees, it can be much more complex when scores or hundreds of branches and potential outcomes are involved.

2.1.7.4 Plan Risk Responses

Plan Risk Responses is the process of developing options and actions to enhance opportunities and to reduce threats to project objectives. The key benefit of this process is that it addresses the risks by their priority, inserting resources and activities into the budget, schedule and project management plan as needed (PMI, 2013). The inputs, tools and techniques, and outputs of this process are depicted in Figure 2.5



Figure 2.5 Plan Risk Responses: Inputs, tools & techniques, and outputs

(Source: PMI, 2013)

According to Kerzner (2009), risk handling includes specific methods and techniques to deal with known risks and opportunities, identifies who is responsible for the risk or opportunity, and provides an estimate of the resources associated with handling the risk or opportunity, if any. It involves planning and execution with the objective of reducing risks to an acceptable level and exploiting potential opportunities. Risk response planning must be compatible with the RMP and any additional guidance the program manager provides. A critical part of risk response planning involves refining and selecting the most appropriate response option(s) and specific implementation approaches for selected risks (often those with medium or higher risk levels) and opportunities. The selected risk response option coupled with the specific implementation approach is known as the risk response (handling) strategy, which is documented in the risk response (handling) plan. The procedure to develop a risk response strategy is straightforward. First, the most desirable risk response option [of acceptance, avoidance, control (mitigation), and transfer for risks, and acceptance, enhance, exploit, and share for opportunities is selected; then the best implementation approach is chosen for that option. In cases where one or more backup strategies may be warranted (e.g., high risks). While the selected option for a backup strategy may be the same as for the primary strategy, the implementation approach will always be different; else the primary and backup strategy would be identical. Similarly, contingent responses can be developed for risks and opportunities where action is taken only if certain predefined conditions occur.

2.1.7.4.1 Response Options for Risks and Opportunities

According to Kerzner (2009), a risk or opportunity response strategy is composed of an option and implementation approach. Response options for risks include acceptance, avoidance, mitigation (also known as control), and transfer. A brief discussion of the four response options for risks follows:

- **Acceptance (i.e., retention):** The project manager says, “I know the risk exists and am aware of the possible consequences. I am willing to wait and see what happens. I accept the risk should it occur.”
- **Avoidance:** The project manager says, “I will not accept this option because of the potentially unfavorable results. I will either change the design to preclude the issue or requirements that lead to the issue.”
- **Control (e.g., mitigation):** The project manager says, “I will take the necessary measures required to control this risk by continuously reevaluating it and developing contingency plans or fall-back positions. I will do what is expected.”
- **Transfer:** The project manager says, “I will share this risk with others through insurance or a warranty or transfer the entire risk to them. I may also consider partitioning the risk across hardware and/or software interfaces or using other approaches that share the risk.”

2.1.7.5 Monitoring and Control Risks

Control Risks is the process of implementing risk response plans, tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness throughout the project. The key benefit of this process is that it improves efficiency of the risk approach throughout the project life cycle to continuously optimize risk responses (PMI, 2013).

The inputs, tools and techniques, and outputs of this process are depicted in Figure 2.6

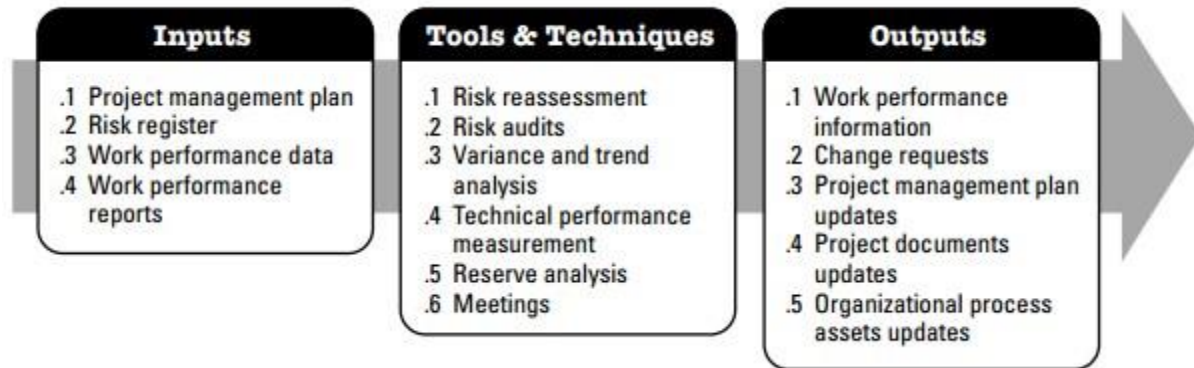


Figure 2.6 Control Risks: Inputs, tools & techniques, and outputs

(Source: PMI, 2013)

According to Kerzner (2009), the monitoring and control process systematically tracks and evaluates the effectiveness of risk response actions against established metrics. Monitoring results may also provide a basis for developing additional risk response strategies, or updating existing risk response strategies, and reanalyzing known risks. In some cases monitoring results may also be used to identify new risks and revise some aspects of risk planning. The key to the risk monitoring and control process is to establish a cost, technical performance, and schedule management indicator system over the program that the program manager and other key personnel use to evaluate the status of the program. The indicator system should be designed to provide early warning of potential problems to allow management actions. Risk monitoring and control is not a problem-solving technique but, rather a proactive technique to obtain objective information on the progress to date in reducing risks to acceptable levels.

2.2 Empirical Literature Review

This part of literature review will discuss related articles and journals to the topic under study. Pimchangthong, 2017 conducted a survey on effects of risk management practice on the success of IT Project. The descriptive statistics results found that the risk management practice in the aspect of risk identification, risk analysis and total aspect were in the high level of importance ($\bar{x}$ = 3.96, 3.55, 3.69, and S.D.= 0.644, 0.807, and 0.562). The aspect of risk response planning and risk monitoring and control were in the moderate level of importance ($\bar{x}$ = 3.49, 3.32, and S.D.= 0.680, 0.671). The multiple linear regression analysis results found that risk identification, and risk response planning influenced process performance at the statistical significance level of 0.05. The

highest beta coefficient is 0.398, which means that risk response planning had the greatest influence on predicting process performance, followed closely by risk identification with beta coefficient of 0.244. The multiple linear regression analysis results found that risk identification, risk analysis and risk response planning influenced product performance at the statistical significance level of 0.05. The highest beta coefficient is 0.383, which means that risk identification had the greatest influence on predicting product performance, followed closely by risk response planning and risk analysis with the beta coefficient of 0.367 and 0.135, respectively. The multiple linear regression analysis results found that risk identification and risk response planning influenced IT project success at the statistical significance level of 0.05. The highest beta coefficient is 0.359, which means risk identification had the greatest influence on predicting IT project success, followed by risk response planning with the beta coefficient of 0.333.

Zerithun, 2017 also conducted a survey on the relationship between project management maturity and competitiveness in the case of Commercial Bank of Ethiopia and assessing project risk management assessment was one of the assessment area in this study. The assessment is based on a five point Likert scale where: 1= we do not need this element; 2= we do not have or use this element but probably should; 3= we do have or use this element but do not always use it appropriately; 4= we do have or use this element and do use it appropriately and competently; and 5= we do have or use this element and do use it in an exemplary manner. Based on this a mean is calculated for the practice of project risk management in terms of identification of risks, monitoring of identified risks, the use of project management software and using risk register. Hence, the result showed that the average mean is 3.3474. Moreover, the study also determines the effect of project risk management on organizational competitive advantage in the Commercial Bank of Ethiopia. The study used correlation analysis to establish the strength of the relationship between the study variables, and whether there are any significant relationships between them. As a result, it is found that there is a significant positive correlation between competitive advantage and project risk management .571 which has related to increase positive events, and decrease the likelihood and impact of negative events in the project.

A survey was conducted by Tigest, 2017 on project management practices in a case of Japanese Social Development Trust Fund Grant Project. The research assessed the practice of project risk management as one of the project management knowledge areas. The survey used a likert type

scale ranging from 1(Strongly Disagree/highly dissatisfied) to 5(Strongly Agree/Highly Satisfied) on the practice of development of risk management plan, identification and registering of risks, risk prioritization and estimation of impacts, development of risk response plan, monitoring and controlling of the identified risks. Finally, the result found a mean of 2.02, 2.07, 2.05, 2.07 and 2.10 respectively. This implies that, the practice of project risk management is poor in a way that projects are expected to put into practice.

Peixoto J;Tereso A.;Fernandes G. &Almeida R., 2014 conducted a case study of project risk management methodology in Electric Energy Organization and the research found some setbacks such as:

- The project risk methodology is new for the project management team, so first should be assured that project team understands the project risk management plan and is committed to follow it.
- The project had already started when the risk management plan was defined, once the ideal timing for establishing the risk management plan is along with the project management plan, when the project is defined and characterized, so it is easily accepted along with the other project management practices.
- The information collection process from the project management team took more time than expected. The reasons for this can be related to: a) the inability to perceive the relevance of risk management practices for the project success; b) the fact that the project was already started; c) the team being involved in other tasks, and c) lack of risk management knowledge.
- Difficulty in understanding and interpreting the outcomes of project risk and response plans.
- Difficulty in influencing the project team to dedicate more time to risk management activities.

2.3 Conceptual framework

This research assessed the practice of project risk management. In this regard, plan risk management, identify risk, analyze risk, responding to risk and monitoring and control were the key elements which the study has taken into consideration.

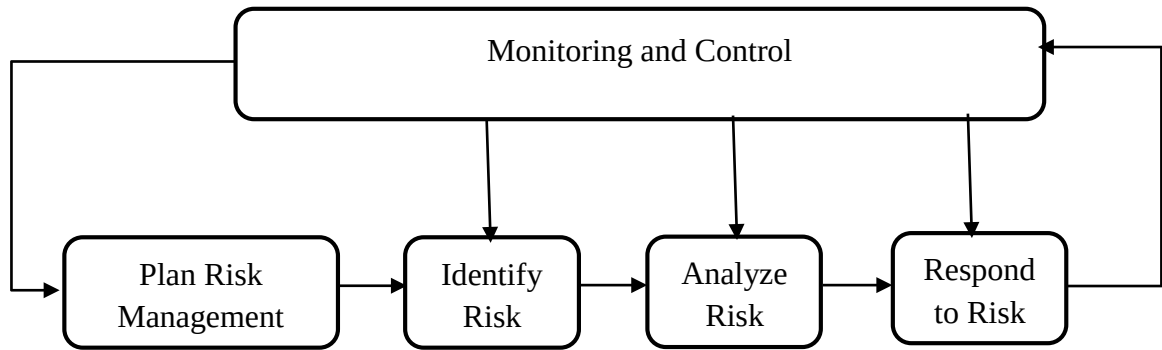


Figure 2.7 Summarized conceptual framework for project risk management process Source:

Developed based on the objective and literatures reviewed

CHAPTER THREE

3. RESEARCH METHODOLOGY

This part tries to discuss the research design, sources of data, sampling, method of data analysis and ethical considerations for the study.

3.1 Research Design

This research was bounded by time. So it was a cross-sectional research and categorized under a descriptive type. According to Kothari (1990), descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual, or of a group. This design enabled the researcher to assess project risk management practices of BoA ISAP.

3.2 Sources of Data

The study used both primary and secondary data. The primary data was collected through questionnaire and personal interview. The questionnaire comprised of closed ended questions. The secondary data was collected from relevant documents and project reports that are related to the study. In addition, necessary materials also be downloaded from web sites.

3.3 Total Population and the Sampling Size

The total population for the study was 27. These were experts of the organization project management office, experts of IS project office, ISAP project teams and IT steering committee. IT steering committee were comprised of project manager, IT department directors and executives whose role was monitoring and control of the project. However, the researcher was able to get access of only one executives. The rest were busy and spent their time in deposit mobilization and NPL management. Therefore, the questionnaires were distributed to 17 respondents in which the researcher believed that reliable information could be obtained from these people and the interview also made with some of the steering committee and project team members who know the area or subject matter very well. The sampling technique was purposive sampling which is categorized under non-probability sampling. According to Saunders et al (2009), purposive sampling is appropriate for small inquiries and researches by individuals.

3.4 Methods of Data Analysis

All the collected data was analyzed using descriptive data analysis method. Data collected through interviews was analyzed by using description of facts. And those quantitative data collected through questionnaires was analyzed using SPSS version 23 with frequency, percentage, mean and standard deviation. To make the analysis accurate, reliability of data was assessed using Cronbach Alpha test. Accordingly, the Alpha test scored for the assessment of general practice of risk management practice(0.728), risk planning practice(0.701), risk identification(0.728), qualitative risk analysis(0.765), quantitative risk analysis(0.704), risk response(0.811), risk monitoring and control(0.818) respectively. In addition, the quantitative data was triangulated with the qualitative data. Moreover, adequate steps were taken to ensure the validity of the questionnaire. For its validity, content validity was determined. Finally, the results was presented through tables.

3.5 Ethical Considerations

In order to secure the consent to the study, the researcher clearly communicated the purpose and aim of the study to respondents. In addition, the researcher has notified the participants to participate in the research willingly and not to disclose their names to assure anonymity of data. Moreover, the researcher requested BoA to do the research formally and did the project by getting permission.

CHAPTER FOUR

4. DATA RESULT AND ANALYSIS

This chapter presents the result of the data obtained from the respondents while assessing Project Risk Management practices of BoA ISAP using questionnaire and interview. The questionnaire was developed using Likert scale; where 1 represents Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree and 5 Strongly Agree. During the assessment, the researcher couldn't find a standard used by BoA to measure the effectiveness of the project risk management practices even though it has established PMO and IS project office since two years ago. Therefore, for purpose of easy analysis and interpretation, the mean values of each item and the grand mean were interpreted by taking into account the acquired project resources of BoA. Hence, the mean values from 1.00-1.50 were represented as very poor, from 1.51-2.50 were represented as poor, from 2.51-3.50 as fair, from 3.51-4.50 as good, and from 4.51-5.00 as very good. The results are presented by using descriptive statistics. To analyze the collected data SPSS Statistics version 23 was used. In addition, the result obtained from the interview also analyzed by relating to literatures. The collected data is summarized as follows.

4.1 Demographic Information

This part provides demographic information about the respondents' age in years, educational background, work experience in projects and trainings in formal risk management.

Table 4.1 Demographic Information

Demography	Description	Frequency	Percent	Valid Percent
Age in years	21-30 years	1	5.9	5.9
	41-50 Years	6	35.3	35.3
	31-40 years	10	58.8	58.8
	Total	17	100	100
Educational Background	Bachelor Degree	8	47.1	47.1
	Masters	9	52.9	52.9
	Total	17	100	100
Work Experience in projects	1-2 Years	1	5.9	5.9
	2-3Years	3	17.6	17.6
	more than 3 Years	13	76.5	76.5
	Total	17	100	100
Formal Risk Management Training	Yes	6	35.3	35.3
	No	11	64.7	64.7
	Total	17	100	100

Source: Own survey, 2018

Table 4.1 depicts that among 17 respondents 10(58.8%) of them were in 31- 40 years age group and 6(35.3%) of them were in 41- 50 years age group while the rest 1(5.9%) respondent was in in 21- 30 years age group. This implies that majority of the respondents were above 31 years old.

According to table 4.1, respondents that acquired master's degree were 9(52.9%) and bachelor's degree were 8(47.1%). This reveals that majority of the respondents had master's degree.

Table 4.1 also shows respondents work experience in projects. Accordingly, 13(76.5%) of the respondents have more than 3 years and 3(17.6%) have 2-3 years while the rest 1(5.9%) respondent has 1-2 years of work experience in projects.

Table 4.1 depicts that, among the respondents majority of them(64.7%) didn't take formal risk management training. Whereas the rest(35.3%) have taken formal risk management. This implies that the practice of risk management training was insufficient.

4.2 General Project Risk Management Practice

This part provides general project risk management practice.

Table 4.2 General Project Risk Management Practice

General activities in project risk Management	Likert scale					Mean	Std. Deviation	N
	1	2	3	4	5			
There is strong linkage between business analysis of threats and opportunities and analysis of project risk	23.5	29.4	5.9	35.3	5.9	2.71	1.359	17
Project team have deep project experience in risk management	41.2	41.2	17.6			1.76	0.752	17
There is documented risk register from previous projects that support project team in risk identification and analysis	58.8	35.3		5.9		1.53	0.800	17
Risks are identified during work break down structure(WBS)	52.9	23.5	17.6	5.9		1.76	0.970	17
There is a policy and procedure that guide the project team to go through a disciplined risk management process	29.4	29.4	11.8	29.4		2.41	1.228	17
Project teams are motivated in the process of project risk management	58.8	35.3		5.9		1.53	0.800	17
Grand mean						2.00		

Source: Own survey, 2018

In table 4.2, six(6) issues were raised to assess the general practice of project risk management in BoA's ISAP. In the first issue, respondents were asked if there was a strong linkage between business analysis of threats and opportunities and analysis of project risk, 41.2% were agreed and

strongly agreed, 5.9% were neutral but majority of them(52.9%) were disagreed and strongly disagreed that there was a strong linkage between business analysis of threats and opportunities and analysis of project risk. Moreover, the mean value obtained for this issue was (2.71).This implies that the practice was fair. Similarly, the result obtained from the interview revealed that only the business threats were seen regardless of the business opportunities while planning project risk.

In the second issue, respondents were asked if project team have deep experience in risk management, 17.6% were neutral but majority of them(82.4%) were disagreed and strongly disagreed that project team have deep experience in risk management. A mean score obtained in this regard was (1.76). This implies that the practice was poor. Similarly, the interviewee also confirmed that practice of training and development in risk management was weak. Hence, they couldn't acquire deep experience in project risk management.

In the third issue, respondents were asked if there was documented risk register from previous projects that support project team in risk identification and analysis. In this regard, 5.9% were agreed and strongly agreed, but majority of them(94.1%) were disagreed and strongly disagreed that there was documented risk register from previous projects that support project team in risk identification and analysis. In addition, the average response obtained in this issue was (1.53). This implies that the practice was poor. Similarly, the interviewee declared that the culture of documenting risk register of previous projects was weak.

In the fourth issue, respondents were asked if risks were identified during work break down structure(WBS), 5.9% were agreed and strongly agreed, 17.6% were neutral but majority of them(76.4%) were disagreed and strongly disagreed that risks were identified during work break down. A mean score obtained in this regard was (1.76).This shows that the practice was poor. Similarly, the interviewee stated that risks were identified at the end rather than during WBS.

In the fifth issue, respondents were asked if there was a policy and procedure that guide the project team to go through a disciplined risk management process, 29.4% were agreed and strongly agreed, 11.8% were neutral but majority of them(58.8%) were disagreed and strongly disagreed that there was a policy and procedure that guide the project team to go through a disciplined risk management process. A mean score obtained in this regard was (2.41). This implies that the practice is poor.

Similarly, the interviewee added that the organization risk policy and procedure was prepared in a generic way not specific to the project. Therefore, there was no any formal procedure that guide the project team to go through a disciplined risk management process.

In the sixth tenth issue, respondents were also asked if project teams were motivated in the process of project risk management. In this regard, 5.9% were agreed and strongly agreed, but majority of them(94.1%) were disagreed and strongly disagreed that project teams were motivated in the process of project risk management. A mean score obtained in this regard was (1.53). This implies that the practice is poor. Similarly, the interviewee also support the result obtained from the questionnaire in that the project team was selected from different functional departments and they were responsible and accountable both to the project and their functional unit. However, there was no any motivation that encourage them to manage risks effectively.

The grand mean(2.00) and the result obtained from interviewee revealed that the organization's risk policy and procedure was insufficient for project risk management. In addition, the project teams had lack of adequate experience in risk management, motivation and documented risk register from previous projects. As a result, they failed to go through a disciplined risk management process. Hence, the practice of project risk management became poor. Therefore, this is a lesson for BoA to amend its risk management practices for future projects.

4.3 Risk Planning Practice

Table 4.3 Risk Planning Practice

Risk Planning Activities	Likert scale					Mean	Std. Deviation	N
	1	2	3	4	5			
The risk management plan has obtained agreement and support from all stakeholders	41.2	41.2	17.6			1.76	0.752	17
The risk plan ensures that the degree, type, and visibility of risk management that commensurate with the project plan	41.2	17.6		35.3	5.9	2.47	1.505	17
the risk management methodology including the tools and data sources that may be used in the risk management process are established	35.3	29.4	29.4	5.9		2.06	0.966	17
the roles and responsibilities of the various project stakeholders participating in the risk management is clearly established	29.4	35.3	29.4	5.9		2.12	0.928	17
Grand mean						2.10		

Source: Own survey, 2018

In table 4.3, four(4) issues were raised to assess the practice of project risk planning. Accordingly, in the first issue, respondents were asked if the risk management plan had obtained agreement and support from all stakeholders. In this regard, 17.6% were neutral but majority of them(82.4%) were disagreed and strongly disagreed that the risk management plan had obtained agreement and support from all stakeholders. In addition, the average response obtained in this issue was (1.76).

This implies that the practice was poor. Similarly, the interviewee explained that the project didn't have stakeholder management plan and all stakeholders were unable to participate in risk planning.

In the second issue, respondents were asked if the risk plan ensured the degree, type, and visibility of risk management that commensurate with the project plan, 41.2% were agreed and strongly

agreed, but majority of them(58.8%) were disagreed and strongly disagreed that risk plan ensured the degree, type, and visibility of risk management that commensurate with the project plan. In addition, a mean score obtained in this regard was (2.47). This implies that the practice was fair. Similarly, the result obtained from the interviewee revealed that the risk management plan didn't follow standard project management practices and as a result its alignment with the project plan had limitation in visibility and clarity.

Regarding the third issue, respondents were asked if the risk management methodology including the tools and data sources that may be used in the risk management process was established, 5.9% were agreed and strongly agreed, 29.4% were neutral but majority of them(64.7%) were disagreed and strongly disagreed that the risk management methodology including the tools and data sources that may be used in the risk management process was established. Moreover, the mean value obtained for this issue was (2.06). This implies that the practice was poor. Similarly, the questionnaire result agrees with the result obtained from the interview.

In the fourth issue, respondents were asked if the roles and responsibilities of the various project stakeholders participating in the risk management were clearly established, 5.9% were agreed and strongly agreed, 29.4% were neutral but majority of them(64.7%) were disagreed and strongly disagreed that the roles and responsibilities of the various project stakeholders participating in the risk management were clearly established. Moreover, the mean value obtained for this issue was (2.12). This implies that the practice is poor. Similarly, the interview and document analysis by a researcher revealed that roles and responsibilities of the various project stakeholders lacks clarity. It only shows to whom the risk is escalated.

The grand mean(2.10) and the result obtained from interviewee revealed that all stakeholders weren't participated and even the roles and responsibilities of the project teams wasn't clearly stated in the risk plan. In addition, the risk management methodology including the tools and data sources that may be used in the risk management process weren't established. As a result, the risk plan became weak to ensure that the degree, type, and visibility of risk management that commensurate with the project plan. Therefore, this can be taken as a lesson for BoA to improve its risk planning practices for future projects by involving all stakeholders in the risk planning process and establishing their roles and responsibilities by providing risk management tools and data sources. The main objectives of project risk management is to increase the probability and

impact of events that are positive to the project and decrease the probability and impact of events that are negative to the project. Risk planning includes risk identification, qualitative and quantitative risk analysis, and risk response planning, (PMBOK, 2004).

4.3.1 Inputs, Tools and Techniques in risk planning

Table 4.4 Input in risk planning

Input used in risk planning	Responses	
	N	Percent
Project Management Plan	6	35.3
Enterprise Environmental Factors	4	23.5
Project Charter	1	5.9
Organizational Process Assets	5	29.4
Stakeholder Register	1	5.9
Total	17	100.0

Source: Own survey, 2018

Table 4.4 shows that majority of the respondents(35.3%) believed that project management plan was used primarily in risk planning followed by organizational process assets(29.4%) and enterprise environmental factor(23.5%). In addition project charter and stakeholder register(5.9%). In this regard, the interviewee agreed with the questionnaire result except that of the response on project charter and stakeholder register. Document analysis by the researcher also agreed with the interviewee that the project didn't use project charter and stakeholder register as input in risk planning. According to PMI (2013), project charter can provide various inputs such as high-level risks, high-level project descriptions, and high-level requirements. In addition, stakeholder register, which contains all details related to the project's stakeholders, provides an overview of their roles.

Table 4.5 Tool and technique in risk planning

Tool and Technique used in risk planning	Responses	
	N	Percent
Analytical Techniques	4	23.5
Expert Judgment	6	35.3
Meetings	7	41.2
Total	17	100.0

Source: Own survey, 2018

According to table 4.5, meetings(41.2%) followed by expert judgment(35.3%) and analytical techniques(23.5%) were used as a tool and technique in risk planning. However, the interview result agreed only with meetings and expert judgment and refused that the project used analytical techniques. According to PMI (2013), analytical techniques are used to understand and define the overall risk management context of the project. Risk management context is a combination of stakeholder risk attitudes and the strategic risk exposure of a given project based on the overall project context

In general, the practice of using inputs, tools and techniques as well as incorporating the risk planning activities effectively was poor. Therefore, this becomes a lesson for BoA to improve its risk planning practices in future projects. The RMP should include appropriate definitions, ground rules and assumptions associated with performing risk management on the project, candidate risk categories, suitable risk identification and analysis methodologies, a suitable risk management organizational implementation, and suitable documentation for risk management activities.

4.4 Risk Identification Practice

Table 4.6 Risk Identification Practice

Risk Identification Activities	Likert Scale					Mean	Std. Deviation	N
	1	2	3	4	5			
Risks are identified throughout the project lifecycle			5.9	47.1	47.1	4.41	0.618	17
The project team is involved in the risk identification process.				41.2	58.8	4.59	0.507	17
Systemic approach is applied for the identification of risk	52.9	35.3	11.8			1.59	0.712	17
A clear description of the risks with the cause and effects are understood and documented.	29.4	23.5	29.4	11.8	5.9	2.41	1.228	17
Risk register is produced as an output in risk identification process	29.4			17.6	52.9	3.65	1.801	17
Grand mean						3.33		

Source: Own survey, 2018

Table 4.6 depicts that risk identification activities that had been taken place in ISAP. In this regard, five(5) issues were raised. In the first issue, respondents were asked if risks were identified throughout the project lifecycle, 5.9% were neutral but majority of them(94.2%) were agreed and strongly agreed that risks were identified throughout the project lifecycle. In addition, a mean score obtained in this regard was (4.41). This implies that the practice was good. Similarly, the interviewee result agrees with the questionnaire result.

In the second issue, respondents were asked if the project team were involved in the risk identification process, the result found that 100% were strongly agreed that project team were involved in the risk identification process. In addition, a mean value obtained in this issue was (4.59). This implies that the practice was good. Similarly, the interview result agrees with the questionnaire result.

Regarding the third issue, respondents were asked if systemic approach was applied for the identification of risk, 11.8% were neutral but majority of them(88.2%) were disagreed and strongly disagreed that systemic approach was applied for the identification of risk. Moreover, the mean value obtained for this issue was (1.59). This implies that the practice is poor. Similarly, the result obtained from the interview revealed that the risk identification didn't follow standard and systematic approach rather used common risk identification method.

In the fourth issue, respondents were asked if a clear description of the risks with the cause and effects were understood and documented, 17.7% were agreed and strongly agreed, 29.4% were neutral but majority of them(52.9%) were disagreed and strongly disagreed that a clear description of the risks with the cause and effects were understood and documented. In addition, a mean value obtained in this issue was (2.41). This implies that the practice is poor. Similarly, the interviewee confirmed that the identified risk lacks detail description that guide the project team for effective risk analysis.

The fifth issue also shows the question raised for respondents if risk register was produced as an output in risk identification process, 29.4% were disagreed and strongly disagreed, but majority of them(70.5%) were agreed and strongly agreed that risk register was produced as an output in risk identification process. In addition, a mean value obtained in this issue is (3.65). This implies that the practice was good. Similarly, the interview result agreed with the above result.

The grand mean(3.33) and the result obtained from interviewee revealed that project teams were involved in the process of risk identification. In addition, risks were identified throughout the project lifecycle and risk register also be produced in a good manner. However, the project team didn't follow systemic approach in risk identification and documenting a clear description of the risks with the cause and effects were also inadequate. Therefore, BoA has to improve risk identification practice by following systematic approach as well as having a clear description of cause and effects of the risks on the project objectives.

4.4.1 Inputs, Tools and Techniques in Risk Identification

Table 4.7 Input in risk identification

Input used in risk identification	Responses	
	N	Percent
Risk Management Plan	4	23.5
Schedule Management Plan	2	11.8
Human resource Management Plan	-	-
Procurement documents	1	5.9
Organizational Process Assets	3	17.6
Cost Management Plan	2	11.8
Quality Management Plan	-	-
Scope Baseline	2	11.8
Enterprise Environmental Factors	3	17.6
Total	17	100.0

Source: Own survey, 2018

Table 4.7 shows that majority of the respondents(23.5%) believed that project risk management plan was used primarily in risk identification followed by enterprise environmental factor and organizational process assets(17.6%). In addition, cost management plan, scope baseline and schedule management plan with each of them (11.8%), procurement document(5.9%) but human resource management plan and quality management plan were not used. Furthermore, the researcher document analysis also shows the same result with the interview. According to PMI (2013), quality management plan provides a baseline of quality measures and metrics for use in identifying risks. In addition, human resource management plan provides guidance on how project human resources should be defined, staffed, managed, and eventually released. It can also contain roles and responsibilities, project organization charts, and the staffing management plan, which form a key input to identify risk process.

Table 4.8 Tool and Technique used in risk identification

Tool and Technique used in risk identification	Responses	
	N	Percent
Documentation reviews	1	5.9
Checklist Analysis	2	11.8
SWOT Analysis	1	5.9
Information Gathering Techniques	3	17.6
Assumptions Analysis	4	23.5
Expert Judgment	6	35.3
Total	17	100.0

Source: Own survey, 2018

Table 4.8 depicts that majority of the respondents(35.3%) believed that expert judgment followed by assumptions analysis(23.5%), information gathering techniques(17.6%), checklist analysis(11.8%), documentation review and SWOT analysis with each (5.9%). However, the interviewee disagreed that the project used checklist analysis, documentation review and SWOT but agreed with the rest. According to PMI (2013), A structured review of the project documentation may be performed, including plans, assumptions, previous project files, agreements, and other information. The quality of the plans, as well as consistency between those plans and the project requirements and assumptions, may be indicators of risk in the project. In addition, Risk identification checklists are developed based on historical information and knowledge that has been accumulated from previous similar projects and from other sources of information. Moreover, SWOT analysis identifies any opportunities for the project that arise from organizational strengths, and any threats arising from organizational weaknesses. The analysis also examines the degree to which organizational strengths offset threats, as well as identifying opportunities that may serve to overcome weaknesses.

4.4.2 Risk Categories

Table 4.9 Risk Categories

Risk categories in the project	Responses	
	N	Percent
Internal Risk	7	41.2
Project Specific Risk	6	35.3
External Risk	4	23.5
Total	17	100.0

Source: Own survey, 2018

As shown in table 4.9, majority of the respondents(41.2%) indicated that internal risks were commonly encountered in the project followed by project specific risk(35.3%) and external risk(23.5%). Similarly, the interviewee also agreed with the questionnaire result.

In general, the practice of using inputs, tools and techniques as well as implementing the risk identification process was fair. However, this practice need further improvement in future projects. Risk identification must continue through all project phases(Kerzner, 2009).

4.5 Qualitative Risk Analysis Practice

Table 4.10 Qualitative Risk Analysis Practice

Qualitative Risk Analysis Activities	Likert Scale					Mean	Std. Deviation	N
	1	2	3	4	5			
Characteristics of the risk are considered before analyzing the identified risk	17.6	11.8	5.9	35.3	29.4	3.47	1.505	17
Assumptions made during the analysis are stated	17.6	11.8	11.8	41.2	17.6	3.29	1.404	17
Descriptive terms are used to specify combinations of likelihood and impact	23.5	5.9	5.9	41.2	23.5	3.35	1.539	17
Assessments are done by factual information and data where applicable	58.8	17.6	5.9	5.9	11.8	1.94	1.435	17
Project documents are updated after risks are analyzed qualitatively	70.6	17.6		5.9	5.9	1.59	1.176	17
Grand mean						2.73		

Source: Own survey, 2018

Table 4.10 indicates responses of respondents for questions raised on qualitative risk management process in ISAP. Accordingly five(5) issues were raised. In the first issue, the question was that if characteristics of the risk were considered before analyzing the identified risk, 29.4% were disagreed and strongly disagreed, 5.9% were neutral but majority of them(64.7%) were agreed and strongly agreed that characteristics of the risk were considered before analyzing the identified risk. In addition, a mean value obtained in this issue was (3.47). This implies that the practice was fair. Similarly, the interviewee result also agreed with the questionnaire result.

In the second issue, respondents were asked if assumptions made during the analysis were stated, 29.4% were disagreed and strongly disagreed, 11.8% were neutral but majority of them(58.58%) were agreed and strongly agreed that assumptions made during the analysis were stated. In

addition, a mean value obtained in this issue was (3.29). This implies that the practice was good. Similarly, the interviewee result also agreed with the questionnaire result.

Regarding the third issue, respondents were asked if descriptive terms were used to specify combinations of likelihood and impact, 29.4% were disagreed and strongly disagreed, 5.9% were neutral but majority of them(64.7%) were agreed and strongly agreed that descriptive terms were used to specify combinations of likelihood and impact. Moreover, the mean value obtained for this issue is (3.35). This implies that the practice was good. Similarly, the interviewee result also agreed with the questionnaire result.

In the fourth issue, respondents were asked if assessments were done by factual information and data where applicable, 17.7% were agreed and strongly agreed, 5.9% were neutral but majority of them(76.4%) were disagreed and strongly disagreed that assessments were done by factual information and data where applicable. In addition, a mean value obtained in this issue was (1.94). This implies that the practice is good. Similarly, the interviewee explained that there was no formal gathering of factual information rather they use mostly by meetings.

In the fifth issue, respondents were also asked if project documents are updated after risks were analyzed qualitatively, 11.8% were agreed and strongly agreed, but majority of them(88.2%) were disagreed and strongly disagreed that project documents are updated after risks were analyzed qualitatively. In addition, a mean value obtained in this issue was (1.59). This implies that the practice was poor.

The grand mean(2.73) and the result obtained from interviewee confirmed that the characteristics of the risk and assumptions were fairly considered before risks are analyzed qualitatively. In addition, there was fair description of the combinations of likelihood and impact. However, the practice incorporating factual information and updating project documents was poor in qualitative risk analysis. Therefore, BoA has to take into consideration for further improvement of qualitative risk analysis. Risk analysis is often carried out early in a project when the information is highly limited within several areas. To manage risks and opportunities effectively, the analysis must be iterated throughout the project as more and more information becomes clear to the management team (Kululunga & Kuotcha, 2010)

4.5.1 Inputs, tools and techniques in Qualitative Risk Analysis

Table 4.11 Input used in qualitative risk analysis

Input used in qualitative risk analysis	Responses	
	N	Percent
Risk Management Plan	3	17.6
Risk Register	5	29.4
Organizational Process Assets	3	17.6
Scope Baseline	3	17.6
Enterprise Environmental Factors	3	17.6
Total	17	100.0

Source: Own survey, 2018

According to table 4.11, majority of the respondents(29.4%) believed that risk register were used as input in qualitative risk analysis followed by risk management plan, organizational process asset, scope baseline and enterprise environmental factors with each of them the same response(17.6%). Similarly, the result obtained from the interview agreed with the questionnaire result.

Table 4.12 Tool and Technique used in qualitative risk analysis

Tool and Technique in qualitative risk analysis	Responses	
	N	Percent
Risk Probability and Impact Assessment	8	47.1
Expert Judgment	6	35.3
Risk categorization	3	17.6
Total	17	100.0

Source: own survey, 2018

Table 4.12 shows that majority of the respondents(47.1%) believed that risk probability and impact assessment followed by expert judgment(35.3%) and risk categorization(17.6%) were used as a tool and technique in qualitative risk analysis. Similarly, the result obtained from the interview agreed with the questionnaire result.

4.5.2 Risks analysis approach

Table 4.13 Risks analysis approach

Risks analysis approach	Responses	
	N	Percent
Based on probability	7	41.2
Based on accomplishment of the objectives	5	29.4
Based on outcome	2	11.8
Based on financial impact	3	17.6
Total	17	100.0

Source: Own survey, 2018

Table 4.13 depicts that majority of the respondents(41.2%) believed that risk were analyzed based on probability followed by accomplishment of objectives(29.4%), financial impact(17.6%) and outcome(11.8%). However, the interviewee agreed with the questionnaire result except that the project was analyzed based on financial impact and outcome.

In general, the practice of using inputs, tools and techniques as well as qualitative risk analysis was fair. However, this practice need further improvement in future projects. According to Kerzner (2009), the risk is included in a prioritized list based upon the risk level as well as other considerations (e.g., frequency of occurrence, the time to impact, and interrelationships with other risks). A risk mapping matrix is typically used to convert ordinal probability of occurrence and consequence of occurrence scale values to a corresponding risk level.

4.6 Quantitative Risk Analysis Practice

Table 4.14 Quantitative Risk Analysis Practice

Risk Response Activities	Likert Scale					Mean	Std. Deviation	N
	1	2	3	4	5			
identified risks are numerically analyzing the effect of on overall project objectives	58.8	41.2				1.41	.507	17
An assessment is done for the probability of achieving project objectives	47.1	52.9				1.53	.514	17
Identify realistic and achievable cost, schedule and scope targets, given the project risks.	58.8	41.2				1.41	.507	17
Project documents are updated after risks are analyzed quantitatively	70.6	29.4				1.29	.470	17
Grand mean						1.41		

Source: Own survey, 2018

Table 4.14 depicts that results obtained during the assessment of quantitative risk analysis. In this table four(4) issues were raised. In the first issue, respondents were asked if identified risks were numerically analyzing the effect of on overall project objectives, 100% were disagreed and strongly disagreed, that identified risks were numerically analyzing the effect of on overall project objectives. Moreover, the mean value obtained for this issue was (1.41). This implies that the practice was very poor. Likewise, the interviewee also believed that there was no any numerical analysis of risk by how much it affects project objectives.

Regarding the second issue, respondents were asked if an assessment was done for the probability of achieving project objectives, 100% were disagreed and strongly disagreed, that an assessment was done for the probability of achieving project objectives. Moreover, the mean value obtained

for this issue was (1.53). This implies that the practice was poor. Similarly, the interviewee agreed that further analysis wasn't be done whether the project objectives could be meet or not.

In the third issue, respondents were asked if realistic and achievable cost, schedule and scope targets were identified given the project risks, 100% were disagreed and strongly disagreed, that realistic and achievable cost, schedule and scope targets, were identified given the project risks. In addition, a mean value obtained in this issue was (1.41). This implies that the practice was very poor. Similarly, the interviewee explained that the project risk wasn't breakdown in that whether project objectives could be meet or not.

The fourth issue also shows response of respondents while asked if project documents were updated after risks were analyzed quantitatively, 100% were disagreed and strongly disagreed, that project documents were updated after risks were analyzed quantitatively. Moreover, a mean value obtained in this issue was (1.29). This implies that the practice is very poor. Similarly, the result obtained from the interviewee also confirmed that the culture of updating project documents was poor and document analysis by the researcher also revealed the same result.

The grand mean(1.41) and the result obtained from interviewee confirmed that identified risks weren't numerically analyzed their effects on overall project objectives. In addition, with the identified project risks, achievable cost, schedule and scope targets weren't identified realistically. Moreover there was inadequate assessment of the probability of achieving project objectives and also updating of project documents. Therefore, BoA has to know its weakness and adopt the practical implementation of quantitative risk analysis in future projects.

4.6.1 Inputs, Tools and Techniques in Quantitative Risk Analysis

Table 4.15 Input used in quantitative risk analysis

Input used in quantitative risk analysis	Responses	
	N	Percent
Risk Management Plan	3	17.6
Schedule Management Plan	2	11.8
Enterprise Environmental Factors	2	11.8
Cost Management Plan	3	17.6
Risk Register	4	23.5
Organizational Process Assets	3	17.6
Total	17	100.0

Source: Own survey, 2018

Table 4.15 depicts that majority of the respondents(23.5%) believed that risk register followed by risk management plan, cost management plan and organizational process asset with each (17.6%). In addition, schedule management plan and enterprise environmental factors with each(11.8%) were used as input in quantitative risk analysis. However, the interviewee disagreed that nothing was done in terms of quantitative risk analysis. According to PMI (2013), Perform Quantitative Risk Analysis should be repeated, as needed, as part of the Control Risks process to determine if the overall project risk has been satisfactorily decreased. Trends may indicate the need for more or less focus on appropriate risk management activities.

Table 4.16 Tool and Technique in quantitative risk analysis

Tool and Technique used in quantitative risk analysis	Responses	
	N	Percent
Data Gathering and Representation Techniques	3	17.6
Quantitative Risk Analysis and Modeling Techniques	6	35.3
Expert Judgment	8	47.1
Total	17	100.0

Source: Own survey, 2018

Table 4.16 depicts that majority of the respondents(47.1%) believed that expert judgment followed by modeling technique(35.3%) and data gathering and representation technique(17.6%) were used as tools and technique in quantitative risk analysis. However, the interviewee disagreed that nothing was done in terms of quantitative risk analysis. According to PMI (2013), Continuous probability distributions, which are used extensively in modeling and simulation, represent the uncertainty in values such as durations of schedule activities and costs of project components. Discrete distributions can be used to represent uncertain events, such as the outcome of a test or a possible scenario in a decision tree. In addition, Sensitivity analysis helps to determine which risks have the most potential impact on the project. It helps to understand how the variations in project's objectives correlate with variations in different uncertainties. Moreover, Expected monetary value (EMV) analysis is a statistical concept that calculates the average outcome when the future includes scenarios that may or may not happen(i.e., analysis under uncertainty). The EMV of opportunities are generally expressed as positive values, while those of threats are expressed as negative values.

In general, the practice of using inputs, tools and techniques as well as quantitative risk analysis process was very poor. Therefore, this practice should be improved in future projects. According to Kerzner (2009), two keys to producing accurate quantitative risk analysis results include developing an accurate model structure and incorporating accurate probability information. The model structure should be carefully developed and validated before any output is used for decision-making purposes.

4.7 Risk Response Practice

Table 4.17 Risk Response Practice

Risk Response Activities	Likert Scale					Mean	Std. Deviation	N
	1	2	3	4	5			
a strategy is developed in order to prevent or mitigate all the identified risks	23.5	35.3	23.5	11.8	5.9	2.41	1.176	17
options and actions are developed to enhance opportunities and to reduce threats to project objectives	17.6	41.2	23.5	11.8	5.9	2.47	0.931	17
the most appropriate treatment option is prepared that balance the costs of implementing each option against the benefits derived from	23.5	47.1	29.4			2.06	0.748	17
risks are addressed by their priority	11.8	41.2	47.1			2.35	0.702	17
Project management plan, project documents and organizational process assets are updated after risk response process	58.8	29.4		5.9	5.9	1.71	1.160	17
Grand mean						2.20		

Source: Own survey, 2018

In table 4.17, five(5) issues were raised to assess the risk response for identified and analyzed risks. In the first issue, respondents were asked if a strategy was developed in order to prevent or mitigate all the identified risks, 17.7% were agreed and strongly agreed, 23.5% were neutral but majority of them(58.8%) were disagreed and strongly disagreed that a strategy was developed in order to prevent or mitigate all the identified risks. In addition, a mean value obtained in this issue was (2.41). This implies that the practice is poor. Similarly, the result obtained from the interview and document analysis by a researcher revealed that the project didn't strategically develop risk response for the identified risks. The process lacks standard and formality.

In the second issue, respondents were asked if options and actions were developed to enhance opportunities and to reduce threats to project objectives, 17.7% were agreed and strongly agreed, 23.5% were neutral but majority of them(58.8%) were disagreed and strongly disagreed that options and actions were developed to enhance opportunities and to reduce threats to project objectives. In addition, a mean value obtained in this issue was (2.47). This implies that the practice is poor. Similarly, the interviewee explained that the project team was only focus on threat and an opportunity wasn't in consideration while responding to risk. The researcher also understood that such ambiguity in risk management comes due to inadequate knowledge of the project team in risk management.

Regarding the third issue, respondents were asked if the most appropriate treatment option was prepared that balance the costs of implementing each option against the benefits derived from, 29.4% were neutral but majority of them(70.6%) were disagreed and strongly disagreed that the most appropriate treatment option was prepared that balance the costs of implementing each option against the benefits derived from. Moreover, the mean value obtained for this issue was (2.06). This implies that the practice was poor. Likewise, the interviewee also stated that there was no appropriate treatment prepared to balance the costs of response options.

In the fourth issue, respondents were asked if risks were addressed by their priority, 47.1% were neutral but majority of them(53.0%) were disagreed and strongly disagreed that risks were addressed by their priority. In addition, a mean value obtained in this issue was (2.35). This implies that the practice is poor. Similarly, the interviewee result also agrees with the questionnaire result.

In the fifth issue, respondents were also asked if project management plan, project documents and organizational process assets were updated after risk response process, 11.8% were agreed and strongly agreed, but majority of them(88.2%) were disagreed and strongly disagreed that project management plan, project documents and organizational process assets were updated after risk response process. In addition, a mean value obtained in this issue was (1.71). This implies that the practice is poor. Similarly, the interviewee result also agrees with the questionnaire result.

The grand mean(2.20) and the result obtained from interviewee revealed that a well-developed strategy hadn't been prepared that balance the costs of implementing each option against the

benefits and prevent or mitigate all the identified risks. In addition, the project didn't consider business opportunity to reduce threats to project objectives. Moreover, risks weren't treated by their priority and project documents also be updated inadequately. A response strategy can be to eliminate the probability or impact of a risk, or to accept the risk and calculate with a potential extra cost if the risk occurs (Kululanga & Kuotcha, 2010). The risk response is then based on the combined value of each risk, which leads to a risk management where the response is in relation to the magnitude of the risk (Briner, Hastings, & Geddes, 1996).

4.7.1 Inputs, tools and techniques in Risk Response

Table 4.18 Input used in risk response

Input in risk response	Responses	
	N	Percent
Risk Management Plan	8	47.1
Risk Register	9	52.9
Total	17	100.0

Source: Own survey, 2018

Table 4.18 depicts that majority of the respondents(52.9%) believed that risk register followed by risk management plan(47.1%) were used as input in risk response. Similarly, the interviewee also agreed with the questionnaire result.

Table 4.19 Tool & Technique used in risk response

Tool & Technique used in risk response	Responses	
	N	Percent
Strategies for Negative risks or Threats	4	23.5
Strategies for Positive Risks or Opportunities	2	11.8
Expert Judgment	9	52.9
Contingent Response Strategies	2	11.8
Total	17	100.0

Source: Own survey, 2018

According to table 4.19, majority of the respondents(52.9%) believed that expert judgment followed by strategies for negative risks or threats(23.5%), strategies for positive risks or opportunities and contingent response strategies with each (11.8%) were used as a tool and technique in risk response. However, the interviewee agreed with the response on expert judgment and strategies for negative risks or threats but disagreed with the rest responses. According to PMI (2013), the exploit strategy under strategies for positive risks or opportunities may be selected for risks with positive impacts where the organization wishes to ensure that the opportunity is realized. This strategy seeks to eliminate the uncertainty associated with a particular upside risk by ensuring the opportunity definitely happens. In addition, the enhance strategy is used to increase the probability and/or the positive impacts of an opportunity. Identifying and maximizing key drivers of these positive-impact risks may increase the probability of their occurrence. Moreover, sharing a positive risk involves allocating some or all of the ownership of the opportunity to a third party who is best able to capture the opportunity for the benefit of the project.

4.7.2 Risk response option

Table 4.20 Risk response option

Risk response option	Responses	
	N	Percent
Transfer	5	29.4
Mitigate	8	47.1
Accept	4	23.5
Total	17	100.0

Source: Own survey, 2018

Table 4.20 depicts that majority of the respondents(47.1%) believed that mitigate followed by transfer(29.4%) and accept(23.5%) were used as a risk response option in the project. According to PMI (2013), Risk transference is a risk response strategy whereby the project team shifts the impact of a threat to a third party, together with ownership of the response. Transferring the risk simply gives another party responsibility for its management, it does not eliminate it. Transferring does not mean disowning the risk by transferring it to a later project or another person without his or her knowledge or agreement. Risk transference nearly always involves payment of a risk premium to the party taking on the risk. Transferring liability for risk is most effective in dealing with financial risk exposure.

In general, the practice of using inputs, tools and techniques as well as the risk response activities was poor. Therefore, this practice should be improved in future projects. According to Kerzner (2009), a critical part of risk response planning involves refining and selecting the most appropriate response option(s) and specific implementation approaches for selected risks (often those with medium or higher risk levels) and opportunities.

4.8 Risk Monitoring and Control Practice

Table 4.21 Risk Monitoring and Control Practice

Risk Monitoring and Control Activities	Likert Scale					Mean	Std. Deviation	N
	1	2	3	4	5			
Risks that occur within the project are controlled in a way that goes with the goal and objective of the project.	11.8	52.9	5.9	11.8	17.6	2.71	1.417	17
identified risks are tracked	11.8		17.6	52.9	17.6	3.65	1.278	17
residual risks are monitored	11.8	5.9		29.4	52.9	4.06	1.414	17
new risks are identified	11.8	5.9	11.8	41.2	29.4	3.71	1.372	17
effectiveness of risk management process is evaluated throughout the project	35.3	41.2	5.9	5.9	11.8	2.18	1.185	17
Risk monitoring and control is treated as a continuous process in the project	35.3	23.5	11.8	23.5	5.9	2.41	1.197	17
Project management plan, project documents and organizational process assets are updated after monitoring and control process	52.9	17.6	17.6	5.9	5.9	1.94	0.712	17
Grand mean						2.95		

Source: Own survey, 2018

Table 4.21 shows result obtained from response of respondents in risk monitoring and control process. In this regard, seven(7) issues were raised. In the first issue, respondents were asked if risks that occur within the project were controlled in a way that goes with the goal and objective of the project, 29.4% were agreed and strongly agreed, 5.9% were neutral but majority of them(64.7%) were disagreed and strongly disagreed that risks that occur within the project were controlled in a way that goes with the goal and objective of the project. In addition, a mean value obtained in this issue was (2.71). This implies that the practice was poor. Similarly, the interviewee

confirmed that the project team and IT steering committee were unable to control the identified risks within the schedule and allocated budget.

Regarding the second issue, respondents were asked if identified risks were tracked, 11.8% were disagreed and strongly disagreed, 17.6% were neutral but majority of them(70.5%) were agreed and strongly agreed that identified risks were tracked. Moreover, the mean value obtained for this issue was (3.65). This implies that the practice was good. Similarly, the interviewee result also agreed with the questionnaire result.

In the third issue, respondents were asked if residual risks were monitored, 17.7% were disagreed and strongly disagreed, but majority of them(82.3%) were agreed and strongly agreed that risks were addressed by their priority. In addition, a mean value obtained in this issue was(4.06). This implies that the practice is good. Similarly, the interviewee stated that the IT steering team were aware of residual risks that the project team identified during the project life cycle.

In the fourth issue, respondents were asked if new risks were identified, 17.7% were disagreed and strongly disagreed, 11.8% were neutral but majority of them(70.6%) were agreed and strongly agreed that new risks were identified. In addition, a mean value obtained in this issue was (3.71). This implies that the practice was fair. Similarly, the interviewee agreed that the IT steering committee were liable to identify the risks together with the project team.

Regarding the fifth issue, respondents were asked if effectiveness of risk management process was evaluated throughout the project, 17.7% were agreed and strongly agreed, 5.9% were neutral but majority of them(76.5%) were disagreed and strongly disagreed that effectiveness of risk management process was evaluated throughout the project. Moreover, the mean value obtained for this issue was (2.18). This implies that the practice is poor. Similarly, the interviewee agreed that the project team had limitation in risk management knowledge to evaluate the effectiveness of the risk management process. In addition, the IT steering committee were also have weakness in this regard.

Regarding the sixth issue, respondents were asked if risk monitoring and control was treated as a continuous process in the project, 29.4% were agreed and strongly agreed, 11.8% were neutral but majority of them(58.%) were disagreed and strongly disagreed that risk monitoring and control

was treated as a continuous process in the project. Moreover, the mean value obtained for this issue was (2.41). This implies that the practice was poor. Similarly, the interviewee stated that there was sometimes discontinuity in the process risk monitoring and control since the project had a matrix based organization structure and also the project team were collected from the functional units and engaged in other functional works other than the project work by giving priority to their functional work.

In the seventh issue, respondents were also asked if project management plan, project documents and organizational process assets were updated after monitoring and control process, 11.8% were agreed and strongly agreed, 17.6% were neutral but majority of them(70.5%) were disagreed and strongly disagreed that project management plan, project documents and organizational process assets were updated after monitoring and control process. In addition, a mean value obtained in this issue was (1.94). This implies that the practice is poor. Similarly, the interviewee agreed that the culture of updating and documentation requires great improvement..

The grand mean(2.95) and the result obtained from interviewee revealed that monitoring of risks, identification of new risks and tracking of risks were performed in a good manner. While, the practice of controlling of project risks was fair in a way that goes with the goal and objective of the project. On the contrary, evaluating effectiveness of risk management process was poor and lacks continuity. In addition, updating project management plan, project documents and organizational process assets were seen as very poor practice in the project. Therefore, it is a message for BoA to not only monitor but also controlling the risks that goes with the goal and objective of the project and evaluate the effectiveness of risk management process. According to Kerzner(2009), Risk monitoring and control is not a problem-solving technique but, rather a proactive technique to obtain objective information on the progress to date in reducing risks to acceptable levels.

4.8.1 Inputs, tools and techniques in risk monitoring and Control

Table 4.22 Input used in risk monitoring and control

Input used in risk monitoring and control	Responses	
	N	Percent
Project Management Plan	2	11.8
Work Performance Data	3	17.6
Risk Register	5	29.4
Work Performance Reports	7	41.2
Total	17	100.0

Source: Own survey, 2018

According to table 4.22, majority of the respondents(41.2%) believed that work performance reports followed by risk register(29.4%), work performance data(17.6%) and project management plan(11.8%) were used as input in risk monitoring and control in the project. Similarly the result obtained from the interview agreed with the questionnaire result.

Table 4.23 Tool & Technique used in risk monitoring and control

Tool & Technique used in risk monitoring and control	Resp onses	
	N	Percent
Risk Reassessment	1	5.9
Risk Audit	1	5.9
Reserve Analysis	1	5.9
Variance and Trend Analysis	1	5.9
Technical Performance Measurement	1	5.9
Meetings	12	70.6
Total	17	100.0%

Source: Own survey, 2018

According to table 4.23, majority of the respondents(70.6%) believed that meeting was the main tool and technique used in risk monitoring and control followed by technical performance measurement, risk reassessment, risk audit, reserve analysis and variance analysis with each (5.9%) were used as a tool and technique in risk monitoring and control. However, the interviewee agreed only with the response on meetings and disagreed with the other questionnaire results. According to PMI (2013), control Risks often results in identification of new risks, reassessment of current risks, and the closing of risks that are outdated. Project risk reassessments should be regularly scheduled. The amount and detail of repetition that are appropriate depends on how the project progresses relative to its objectives. Risk audits examine and document the effectiveness of risk responses in dealing with identified risks and their root causes, as well as the effectiveness of the risk management process. For the purposes of controlling risks, trends in the project's execution should be reviewed using performance information. Earned value analysis and other methods of project variance and trend analysis may be used for monitoring overall project performance. Outcomes from these analyses may forecast potential deviation of the project at completion from cost and schedule targets. Deviation from the baseline plan may indicate the potential impact of threats or opportunities. In addition, technical performance measurement compares technical accomplishments during project execution to the schedule of technical achievement. It requires the definition of objective, quantifiable measures of technical performance, which can be used to compare actual results against targets. Throughout execution of the project, some risks may occur with positive or negative impacts on budget or schedule contingency reserves. Reserve analysis compares the amount of the contingency reserves remaining to the amount of risk remaining at any time in the project in order to determine if the remaining reserve is adequate.

In general, the practice of using inputs, tools and techniques as well as implementation of the risk monitoring and control was fair. However, this practice need further improvement in future projects. According to Kerzner (2009), the key to the risk monitoring and control process is to establish a cost, technical performance, and schedule management indicator system. The indicator system should be designed to provide early warning of potential problems to allow management actions.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The major purpose of the study was to assess project risk management practices in BoA ISAP. In this regard, the practice of risk planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response, monitoring and control of risk were seen in the assessment by raising different issues in the form of questionnaire and interview.

According to the response obtained from majority of the respondents revealed that project team didn't have deep experience in risk management. In addition, there was no documented risk register from previous projects that support the project team in risk identification and analysis. Moreover, the organization policy and procedure was inadequate to guide the project team to go through a disciplined risk management process. As a result, the project teams were unable to link business analysis of threats and opportunities and analysis of project risk strongly.

The result obtained in risk planning confirmed that all stakeholders weren't participated in risk planning. In addition, the roles and responsibilities of the various stakeholders participating in the risk management weren't clearly established. Moreover, the risk management methodology including the tools and data sources that may be used in the risk management process weren't established efficiently. As a result, the risk plan had limitation to ensure the degree, type and visibility of risk management that commensurate with the project plan.

Regarding risk identification, systematic approach wasn't applied and also the description of the risks with the cause and effect lacks clarity. In addition, quality management plan and human resource management plan weren't used as input and document review, checklist analysis and SWOT analysis as a tool in risk identification. Moreover, internal risks were commonly encountered in the project followed by project specific risk and external risk.

According to response of majority of the respondents in qualitative risk analysis revealed that assessments were not done by factual information and risks weren't analyzed based on financial

impact. In addition, project documents weren't be updated after risks were analyzed qualitatively. Moreover, the practice of risk response was primarily mitigate followed by transfer and accept.

In quantitative risk analysis, no input and tools were used. As a result, identified risks weren't analyzed numerically its effect on the overall project objectives and financial impact. In addition, realistic achievable cost, schedule and scope targets weren't identified with the given project risk. Moreover, project documents weren't updated after risk were analyzed quantitatively.

In risk response, strategies for positive risks or opportunities, contingent response strategies weren't used as a tool and techniques in risk response. As a result, a limitation had been seen in developing a strategy and enhances an opportunity to prevent or mitigate all the identified risks.

In addition, project document plan, project documents and organizational process assets weren't updated.

The result obtained from the assessment of risk monitoring and control practice revealed that technical performance measurement, reserve analysis, variance and trend analysis weren't used as a tool and techniques in risk monitoring and control. In addition, there was a limitation in evaluating the effectiveness of risk management process throughout the project. The risk monitoring and control process also lacks continuity. As a result, risks that occur within the project weren't controlled in the way that goes with the goal and objective of the project. Moreover, project management plan, project documents and organizational process assets weren't updated.

Furthermore, important inputs, tools and techniques weren't used effectively during the process of risk planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response, risk monitoring and control

5.2 Conclusion

The general objective of the study was to assess project risk management practices of BOA ISAP. In this regard, the study specifically assessed the practice of risk planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response, monitoring and control. Accordingly, the following conclusions have been made.

Regarding the process of risk planning, the project used project management plan, enterprise environmental factor and organizational process assets as input and meetings, expert judgment as a technique. However, project charter and stakeholder register were missed to be used as input and analytical techniques as a technique in risk planning process. In addition, all stakeholders weren't participated and the roles and responsibilities of the project teams wasn't clearly stated in the risk plan. As a result, the risk plan had weakness to ensure the degree, type, and visibility of risk management that commensurate with the project plan. As a result, the practice of risk planning was categorized as poor.

In the process of risk identification, the project used risk management plan, enterprise environmental factors, organizational process assets, cost management plan, scope baseline, schedule management plan, procurement document as input and expert judgment, information gathering techniques, assumptions analysis as techniques. However, human resource management plan and quality management plan as input and checklist analysis, documentation review, SWOT analysis as techniques were missed to be used in risk identification and also project teams didn't follow systemic approach in risk identification even though they were involved in the identification of risks throughout the project lifecycle. Moreover, internal risks were commonly encountered in the project followed by project specific risk and external risk. Thus, in this regard, the practice of risk identification was fair.

Regarding the process of qualitative risk analysis, the project used scope baseline, risk management plan, enterprise environmental factors as input and impact assessment, expert judgment, risk categorization as techniques. However, the practice of incorporating factual information and updating project documents was poor even though it considered assumptions before risks were analyzed qualitatively and the combinations of likelihood and impact also be described fairly. Thus, in this regard, the practice of qualitative risk analysis was fair.

In the process of quantitative risk analysis, project risks weren't analyzed realistically based on financial impact and achievable cost, schedule and scope targets. In addition, there was inadequate assessment of the probability of achieving project objectives and also updating of project documents. Moreover, there were no any input, tools and techniques used in quantitative risk analysis. Such as risk management plan, enterprise environmental factors, schedule management

plan, cost management plan, risk register and organizational process assets as input and expert judgment, modeling technique, data gathering and representation technique as technique weren't applicable. Thus, the practice of quantitative risk analysis was very poor.

Regarding the process of risk response, the project used risk management plan and risk register as input and expert judgment, strategies for negative risks as techniques. However, strategies for positive risks or opportunities and contingent response strategies were missed which could be used as a technique in the risk response. In addition, a well-developed strategy hadn't been prepared that balance the costs of implementing each option against the benefits and prevent or mitigate all the identified risks even though mitigation followed by transfer and accept were used as risk response option in the project. Moreover, the risk response wasn't based on priority of risks. Thus, the practice of risk response planning was poor.

In the process of risk monitoring and control, the project used work performance reports, project management plan, risk register and work performance reports as input and meetings as technique. However, technical performance measurement, risk reassessment, risk audit, reserve analysis, variance and trend analysis were missed which could be used as techniques in risk monitoring and control. Consequently, risks couldn't be controlled effectively that goes with the goal and objective of the project. In addition, effectiveness of risk management process wasn't evaluated. Moreover, project management plan, project documents and organizational process assets weren't updated appropriately even though risks were monitored, new risks were identified and risks were tracked in a good manner. Thus, in this regard, the practice of risk monitoring and control was fair.

Furthermore, the organization's risk policy and procedure was insufficient for project risk management. In addition, the project teams had lack of adequate experience in risk management, Moreover, project teams weren't motivated and unable to get documented risk register from previous projects that help them to go through a disciplined risk management process. Hence, the practice of project risk management became poor. Therefore, BoA has to amend its risk management practices for future projects.

5.3 Recommendation

Based on the study finding there are some recommendations. These are important to improve the project risk management practice of BoA.

- Training and development have to be given for project team in project risk management particularly using tools and techniques in risk planning, risk identification, risk analysis, risk response, monitoring and control
- The risk procedure has to be prepared clearly and specifically for projects that guide the project team to go through a disciplined risk management process
- All project stakeholders should participate in the risk planning
- The roles and responsibilities of various stakeholders participating in the project should be clearly mentioned and documented
- For effective project risk management; relevant inputs, tools and techniques should be applied in the process of risk planning(inputs such as project charter, stakeholder register & tools and techniques such as analytical techniques), risk identification(inputs such as human resource management plan and quality management plan & tools and techniques such as checklist analysis, documentation review and SWOT analysis). risk analysis(inputs such as risk management plan, enterprise environmental factors, schedule management plan, cost management plan, risk register and organizational process assets & tools and techniques such as expert judgment, modeling technique, data gathering and representation technique), risk response(tools and techniques such as strategies for positive risks or opportunities and contingent response strategies), risk monitoring and control(tools and techniques such as technical performance measurement, risk reassessment, risk audit, reserve analysis, variance and trend analysis)
- the risk management plan should be prepared with detail requirement gathering
- the risk management plan should have strong linkage with business analysis of threats and opportunities and analysis of project risk
- Financial impact of the risk that hinder the project objective should be numerically specified

- Contingency should be allocated to mitigate the risk that occur in the project
- Project teams should be motivated by using different motivational factors
- Effectiveness of the risk management process should be evaluated throughout the project

5.4 Future area of research

Future research can be carried out to determine the relationship between project risk management maturity and project management success.

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ANNEX

ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE
PROJECT MANAGEMET DEPARTMENT

Dear Participants

First of all I would like to appreciate those who are willing to participate in this research. I am Andenet Mesekere, an MA graduate student in Project Management at AAUSC. The main purpose of the questionnaire and interview is to collect data for the research entitled “Assessment of Project Risk Management Practices in Bank of Abyssinia Increase Systems Availability Project (ISAP)”.

This is an academic research and the information you provide will be treated strictly confidential.

Therefore, I kindly request you to complete the questionnaire with honesty and genuinely.

If you have any queries please contact:

Andenet Mesekere

Mobile: +251 929 43 90 87

Email: robspereand@gmail.com

General Instruction:

- Part I contains questions on demographic information. Please respond by putting a tick (✓) in boxes or write the answer in the space provided (if any other).
- PartII contains questions on Project Risk Management Process. Please indicate your perceived risk management practice by putting a tick (✓) at the corresponding column from strongly agree to strongly disagree (i.e. Strongly Agree=5, Agree=4, Neutral=3, Disagree=2, strongly Disagree=1). In addition, Please put a tick (✓) to one or more of your choice for other multiple choice questions
- Part III contains interview questions
- Please attempt all questions

Part I: Demographic Information

1. Age:

21-30 years ☐ 31-40 years ☐ 41-50 Years ☐ Above 50 Years ☐

2. Educational Background:

Bachelor Degree ☐ Masters ☐ PhD ☐ Other, please specify, _____

4. Work Experience in projects?

Below 1 Year ☐ 1-2 Years ☐ 2-3Years ☐ more than 3 Years ☐

5. Do you have any formal risk management training?

Yes ☐ No ☐

Part II: Project Risk Management Process

A. General Project Risk Management Practice

S/No.	Questions	Strongly Disagree(1)	Disagree(2)	Neutral(3)	Agree(4)	Strongly Agree(5)
1	There is strong linkage between business analysis of threats and opportunities and analysis of project risk					
2	Project team have deep project experience in risk management					
3	There is documented risk register from previous projects that support project team in risk identification and analysis					
4	Risks are identified during work break down structure(WBS)					
5	There is a policy and procedure that guide the project team to go through a disciplined risk management process					
6	Project teams are motivated in the process of project risk management					

B. Risk Planning

S/No.	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7	The risk management plan has obtained agreement and support from all stakeholders					
8	The risk plan ensures that the degree, type, and visibility of risk management that commensurate with the project plan					
9	the risk management methodology including the tools and data sources that may be used in the risk management process are established					
10	the roles and responsibilities of the various project stakeholders participating in the risk management is clearly established					

11. What input is used in risk planning?

- a. Project Management Plan ☐ c. Project Charter ☐ e. Stakeholder Register ☐
b. Enterprise environmental Factors ☐ d. Organizational Process Assets ☐

12. What tool and technique is used in risk planning?

- a. Analytical Techniques ☐ b. Expert Judgment ☐ c. Meetings ☐

C. Risk Identification

S/No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
13	Risks are identified throughout the project lifecycle					
14	The project team is involved in the risk identification process.					
15	Systemic approach is applied for the identification of risk					
16	A clear description of the risks with the cause and effects are understood and documented.					
17	Risk register is produced as an output in risk identification process					

18. Risk categories that the project usually encounters:

- a. Internal risk ☐
- b. Project specific risk ☐
- c. External risk ☐

19. What input is used in risk identification?

- a. Risk Management Plan ☐
- b. Schedule Management Plan ☐
- c. Human resource Management Plan ☐
- d. Procurement documents ☐
- e. organizational Process Assets ☐
- f. cost Management Plan ☐
- g. Quality Management Plan ☐
- h. Scope Baseline ☐
- i. Enterprise Environmental Factors ☐

20. What tool and technique is used in risk identification?

- a. Documentation reviews ☐ d. Information Gathering techniques ☐
b. Checklist Analysis ☐ e. Assumptions Analysis ☐
c. SWOT Analysis ☐ f. Expert Judgment ☐

D. Risk Analysis

D.1 Qualitative Risk Analysis

S/No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21	Characteristics of the risk are considered before analyzing the identified risk.					
22	Assumptions made during the analysis are stated					
23	Descriptive terms are used to specify combinations of likelihood and impact					
24	Assessments are done by factual information and data where applicable					
25	Project documents are updated after risks are analyzed qualitatively					

26. What input is used in qualitative risk analysis?

- a. Risk Management Plan ☐ d. Scope Baseline ☐
b. risk register ☐ e. Enterprise Environmental Factors ☐
c. organizational Process Assets ☐

27. What tool and technique is used in qualitative risk analysis?

- a. Risk Probability and Impact Assessment ☐ c. risk categorization ☐
b. Expert Judgment ☐

28. Risks are analyzed based on:

- a. Probability ☐ c. outcome ☐ d. financial impact ☐
b. accomplishment of the objectives ☐

D.2 Quantitative Risk Analysis

S/No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
29	identified risks are numerically analyzing the effect of on overall project objectives					
30	An assessment is done for the probability of achieving project objectives					
31	Identify realistic and achievable cost, schedule and scope targets, given the project risks.					
32	Project documents are updated after risks are analyzed quantitatively					

33. What input is used in quantitative risk analysis?

- a. Risk Management Plan ☐ d. cost Management Plan ☐
b. Schedule Management Plan ☐ e. risk register ☐
c. Enterprise Environmental Factors ☐ f. organizational Process Assets ☐

34. What tool and technique is used in quantitative risk analysis?

- a. Data Gathering and representation techniques ☐
b. Quantitative risk Analysis and Modeling techniques ☐
c. Expert Judgment ☐

E. Risk Response

S/No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
35	a strategy is developed in order to prevent or mitigate all the identified risks					
36	options and actions are developed to enhance opportunities and to reduce threats to project objectives					
37	the most appropriate treatment option is prepared that balance the costs of implementing each option against the benefits derived from					
38	risks are addressed by their priority,					
39	Project management plan, project documents and organizational process assets are updated after risk response process					

40. What input is used in risk response?

- a. Risk Management Plan ☐ b. risk register ☐

41. What tool & technique is used in risk response?

- a. Strategies for negative risks or threats . ☐ Contingent response strategies ☐
- b. Strategies for positive risks or opportunities ☐
- c. Expert judgment ☐

42. What risk response option is used in the project?

- a. Avoid ☐ b. Transfer ☐ c. Mitigate ☐ d. Accept ☐

F. Risk Monitoring and Control

S/No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
43	Risks that occur within the project are controlled in a way that goes with the goal and objective of the project.					
44	identified risks are tracked					
45	residual risks are monitored					
46	new risks are identified					
47	effectiveness of risk management process is evaluated throughout the project					
48	Risk monitoring and control is treated as a continuous process in the project					
49	Project management plan, project documents and organizational process assets are updated after monitoring and control process					

50. What input is used in risk monitoring and control?

- a. Project Management Plan ☐ c. Risk Register ☐
b. Work Performance Data ☐ d. Work Performance Reports ☐

51. What tool and technique is used in risk monitoring and control?

- a. Risk Reassessment ☐ d. Variance and Trend Analysis ☐
b. Risk Audit ☐ e. Technical Performance Measurement ☐
c. Reserve Analysis ☐ f. Meetings ☐

Part III Interview

1. Is there a policy and procedure that guide the project team to go through a disciplined risk management process? If yes, how it supports the project team in risk management?
2. Do project teams get training in risk management? If yes, how it helps in risk management activities?
3. Does the project have risk management plan? If yes, does it have a strong linkage with the project plan?
4. Are the roles and responsibilities of the project team assigned for risk management?
5. Does the project follow standard risk management process (i.e risk planning, risk identification, Qualitative & Quantitative risk analysis, Risk response, monitoring and control)?
6. Is there any reward that motivates project teams to develop effective risk management system?
7. How risk planning process is performed in the project? What inputs used in the risk planning? What tools and techniques are used?
8. Are project stakeholders participated in the risk planning process of the project? If yes what input they have in the process?
9. Are risks categorized? If yes, which types of risk appear in the project?
10. How risk identification process is performed in the project? What inputs are used? What tools and techniques are used?
11. How qualitative risk analysis process is performed in the project? What inputs are used? What tools and techniques are used?
12. How quantitative risk analysis process is performed in the project? What inputs are used? What tools and techniques are used?
13. How risk response process is performed in the project? What inputs are? What tools and techniques are used? What risk response option is applied in the project?
14. How monitoring and control process is performed in the project? What inputs are used? What tools and techniques are used? Is monitoring and control a continuous process?

□ Project Organization Structure

