
# ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE

# DEPARTMENT OF PROJECT MANAGEMENT

# ASSESSMENT OF PROJECT RISK MANAGEMENT PRACTICE OF COMMERCIAL BANK OF ETHIOPIA'S BUILDING CONSTRUCTION PROJECTS

**By**

**Nahom Tesfaye**

**A project work submitted to Addis Ababa University College of Business and Economics School of Commerce in partial fulfilment of the requirements for the Degree of Masters of Arts in Project Management**

**June 2023**

**Addis Ababa, Ethiopia**

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ADVISOR: WORKU MEKONNEN (PhD)

JUNE, 2023

ADDIS ABABA, ETHIOPIA

# DECLARATION

I, the undersigned, declare that this research paper is my own original work and was prepared as per the guidance of Dr. Worku Mekonnen. The use of all sources and materials in this article has been properly acknowledged. I further attest that no other university has ever received the project work in whole or in part for the purpose of conferring a degree.

**By: Nahom Tesfaye**

**Signature: _____**

**Date: _____**

**Advisor: Worku Mekonnen (PhD)**

**Signature: _____**

**Date: _____**

# LETTER OF CERTIFICATION

This is to certify that Nahom Tesfaye worked under my guidance to complete his research on the subject of "Assessment of Project Risk Management Practice of Commercial Bank of Ethiopia's Building Construction Projects." This work is original in the nature and suitable for submission in partial fulfilment of the requirement for the award of Masters of Arts Degree in Project Management and the student has my permission to present it for assessment.

**Advisor: Worku Mekonnen (PhD)**

here:

Sign_____

Date. _____

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**Approved Board Committee:**

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| **Advisor** | **Signature** |

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# List of Abbreviations and Acronyms

AS/NZS - Australia/New Zealand

BCBAQM- Building Construction Business Analysis and Quality Management

BCM - Building Construction Management

BS - British Standard

CBE - Commercial Bank of Ethiopia

CCM - Construction Contracts Management

G-1 - Grade 1

IRM - Institute of Risk Management

RM - Risk Management

PMI - Project Management Institute

PMO- Project Management Office

# ABSTRACT

*This paper has assessed and provided an overview of the project risk management practices of Commercial Bank of Ethiopia's Building Construction projects. The project's risk management practice was assessed by distributing well-articulated questioner that was modelled from the literature review to Commercial Bank of Ethiopia's Building Construction Management department. A descriptive study was opted for this research paper. A total of 34 questioners was filled among the professionals working at the department via google form. The obtained data was quantitively analysed with the aid of SPSS 27.0.1. From the quantitative data that was gathered it was observed that the department doesn't have a dedicated staff that deals with managing risks nor does it follow written guidelines or manuals to carry out the risk management process. There was a gap that was found among the respondents regarding the complete understanding of risk management and staffs are hesitant to regularly update management about potential risks. Besides that, the finding also pointed out the risk management process isn't treated as a continuous process rather it is subjected to various discontinuities mainly at-risk identification stage. In addition, it was observed that labour, material and equipment availability; defective design; inflation and changes in prices; contractors' incompetence; war threats and political instability and lack of consultant experience are the significant risk factors in terms of their impact on the department building projects. The research was also able to find out the preferred risk response strategy of the department which is risk mitigation and the overall go to for risk attitude is risk averse which demonstrates the conservative nature of the department towards risks. The findings generally show that risk management process has been tried to be implemented to some degree, lagging well behind the consistency the literature review suggests. Commercial Bank of Ethiopia's Building Construction Management department should treat risk management practice as a continuous process, provide training to the staff, enlist the help of bank's other divisions to set up well articulated risk management practice policy and adhere to it are some of the suggestions forwarded to lessen the gap seen in fully implementing risk management practice.*

**Key words**: Risk, Risk Management, Risk Response, Risk Attitude, Risk Factors

# Chapter One

# 1. Introduction

## 1.1 Background of the Study

Unexpected events that cause financial loss, disruption of routine business operations, harm to a company's reputation, and loss of market presence are no longer acceptable for businesses. Due to this, various stakeholders are increasingly expecting businesses to fully account for risks that could cause operations disruption, project delays, or strategy failure (Hopkin, 2017).

The flaws and mistakes of past work are repeated in far too many projects today. It's common to label projects that successfully avoid these problems as "fortunate," but there is usually more to it than that (Kendrick, 2015). While some corporate projects go easily and as expected, many others do not. Conducting a project needs extensive planning as well as occasionally making difficult choices when the unexpected occurs. Thus, many business people believe that risk management is the key to improving our capacity to foresee the unexpected (Chong & Brown, 2003).

As a whole, construction projects are challenging, drawn-out endeavors (Sears, et al., 2015).The most important feature of any building project should be the client's objectives in embarking on the construction of the project. The need for the project will normally have arisen from some demand arising from the client organization's primary activity (Walker, 2015).

Risk management makes better project and commercial outcomes feasible. It achieves this by providing understanding, information, and confidence for better decision-making. It specifically supports better decisions regarding planning and design procedures to prevent or avoid risks and to seize and take advantage of opportunities, better contingency planning for handling risks and their impacts, better resource allocation to risks and better budgetary alignment to risks, and better decisions regarding the best distribution of risk among the parties involved in a project activity. By offering a reliable and consistent procedure to support decision-making, risk management will also benefit improved responsibility and justification of decisions (Coope, et al., 2005).

It is obvious that the banking industry is one of the primary indicators of a nation's sustainable development across all aspects of development. As a fact, CBE is the only provider of banking

services in Ethiopia that provides loans that are super crucial for the country's development as well as finances a number of significant capital projects.

As it was felt important and necessary to expand its banking services to various enterprises in addition to those that are government focused and to reach diverse parts of the community following a broad structural reform meant to modernize its services. CBE has a strategy to construct a number of district and branch facilities all throughout Ethiopia in order to provide better banking services to places that weren't previously served by banks and to increase its services in areas presently served by the bank. This research seeks to assess the risk management practices used by the CBE department in charge of monitoring the building construction in Ethiopia.

## 1.2 Background of the Company

One of Ethiopia's main financial institutions, Commercial Bank of Ethiopia (CBE), was established in 1942 and is owned by the Ethiopian government. The bank wants to be a leading bank by 2025. According to report made public on its CBE's official website CBE has 1880 branches and more than 38.9 million customers.

CBE primarily consists of twelve divisions, one of which is the division of Facilities Management. This division includes Building Construction Management (BCM) department, which is responsible for the construction of various buildings for different banking and other purposes in Addis Ababa and all over the regional states of the country. CBE has also unveiled the highest-rise building headquarter in the nation, which was done under the supervision of CBE-BCM.

Construction-Contract Management (CCM) and Building Construction Business Analysis and Quality Management (BCBAQM) are the two divisions that make up this department, CBE-BCM. The former sub-division is charged with managing the contracts for building construction projects, while the latter is charged with analyzing the business need for constructing the building in the first place, preparing quantities, design review and coordinating with the appropriate bank body to get approval for initiating a project. After receiving this approval, the project must then be started by hiring a consultant to design a building, after which the Construction-Contract Management team will take over and see the construction through to completion. Building Construction Business Analysis and Quality Management (BCBAQM) mostly handles post-contract signing

tasks, whereas Construction-Contract Management (CCM) handles the remaining tasks up until the building is finished.

## 1.3 Statement of the Problem

Modern management skills, as well as knowledge of the design and building processes, are necessary for managing construction projects. Construction projects include a specified set of goals and limitations, such as a deadline for completion, a set budget, a requirement for quality, and so forth. And it is a well-known phenomenon that many building projects fall short of any previously stated expectations. Understanding the many factors that contribute to these underwhelming performances is therefore an important step that must be addressed in order to better identify any issues and gaps at each stage of construction and take the necessary corrective action.

As Ethiopian building projects don't escape this reality of poor performance on every spectrum, this can be attributed to poor, lack of, or adequate risk management. Building projects have risks since they are projects, and projects are by definition all distinct enterprises with different levels of uncertainty (PMI, 2021), and since CBE has embarked on constructing its own buildings in various parts of the country that can be used for different tasks deemed necessary by the bank to achieve its strategic objective, the researcher believes that finding every problem faced by the various building projects, one of them being assessing risk management practices, and taking appropriate measures will be helpful in edging closer to meeting the bank objectives since managing risks are defined as an important mechanism in construction fields to obtain project goals such as cost, time, safety, and quality (Eskander, 2018).

Thus, in order to achieve the project's overall success, each member of staff and management at CBE-BCM as well as the bank's top management must conduct a careful analysis of the risks that the current or upcoming building project faces or could face and develop an all-encompassing strategy to address them.

Through informal discussion between staff members of CBE-BCM and being also an employee and staff member of CBE-BCM, information gathered shows no dedicated team in CBE-BCM to run the risk management aspect of project managing and poor performances of building projects that are being constructed in various regions of Ethiopia crediting these poor performances to various risks. For instance, out of the 17 projects at hand with CBE only 7 are considered to be

active at the moment, the rest have halted their project activity. Hence, based on the data acquired so far, the goal of this study is to assess the risk management procedures used in the Commercial Bank of Ethiopia's building projects in order to identify the gaps that exists and the most significant risk that affects the project negatively. In addition, while there is existing literature on project risk management in the construction industry, there is a notable gap in researches that specifically examines the assessment of project risk management practices within the context of commercial banks in Ethiopia's building construction projects or similarly comparable projects, well this to has been resolved to some degree by this study.

## 1.4 Research Question

1. What does the risk management practice of CBE's building construction projects look like? Is there a standardized way of risk managing or dedicated staff to handle risk management for its projects?
2. What are the most significant risks that are affecting the building projects of CBE?
3. What are the strategies and attitude being employed or prevalent towards risk being employed in the building projects of CBE?

## 1.5 Objective of the Study

### 1.5.1 General Objective

This study's main objective will be to assess the management of project risks for Commercial Bank of Ethiopia's building construction project.

### 1.5.2 Specific Objective

1. To assess the risk management practice of CBE's building construction project and to determine whether the department have a risk management plan/whether the department have a dedicated team that handle risk management of project management.
2. To identify what are the most significant risks that are affecting the building projects.
3. To ascertain the strategies employed and prevalent attitudes towards risk & risk management at CBE's building construction project.

## 1.6 Significance of the Study

One can identify a project's strengths, weaknesses, opportunities, and threats with the use of effective risk management practices. This study will be highly interesting to CBE-BCM

department because it emphasizes how important it is to incorporate risk management planning in building projects. This research endeavors to recognize notable approaches and show how the CBE-BCM department or any other interested party can use them.

In view of that, understanding the risks that are contributing to project under performance and the challenges associated with risk management will aid in discovering ways to find solutions that will reduce the stress produced for the department's management to get better results from the building projects. Furthermore, this research can be used as a template for other academics who wish to focus on the same subject and build on it to develop risk management plans that are useful for projects that are facing comparable strain.

## 1.7 Scope of the Study

The primary objective of the study is to evaluate the department's risk management procedures for construction projects at CBE-BCM. Additionally, because the study will solely concentrate on CBE-BCM, a project management department set up by CBE (the project's owner) to manage the building projects, it will not cover the practices used by other direct or indirect project stakeholders who actually contribute to the project success.

## 1.8 Limitation of the study

The limitations of this study should be considered in light of the background and context. While the risk factors used in this paper may not encompass all the risks faced by the construction sector as a whole, an extensive literature review has been conducted to ensure that these risk factors are more closely aligned with CBE-BCM's project risks. Therefore, individuals interested in this paper should take note of these risk factors, keeping in mind that some may not be relevant for certain stakeholders.

Another limitation worth mentioning is that the research scope focuses solely on CBE-BCM. However, it is important to acknowledge that excluding contractors, consultants, and other relevant stakeholders from the study may result in a slight deviation from the actual risk management practices of CBE-BCM. This is because all respondents are from CBE-BCM and may feel hesitant to disclose any issues or challenges they face in their risk management practices within the project management aspect.

# Chapter Two

# 2. Related Literature Review

## 2.1 Theoretical Review

It is undeniably true that projects are risky due to their common traits, intentional design, and the external environment in which they are conducted. The key is to make sure that the inherent risk associated with every project is at a level that is acceptable to the sponsoring organization and is efficiently managed, rather than trying to prevent risk from entering projects (Hillson, 2009).

A project can be deemed finished if the predetermined objectives were achieved while taking into account the limitations on the end product's quality, budgetary constraints, and total risk. The project's outcomes must adhere to the developer's business plan while taking into account the interests of each investor (Orlov, 2016). Therefore, since construction projects in general and building construction in particular need input from a variety of stakeholders, and since many factors that emanate from those stakeholders cannot be managed entirely with confidence, they are vulnerable to a variety of risks that may have an impact on the desired output of projects. This study's main objective is to assess the risk management procedures used by the CBE-BCM department, which is in charge of overseeing the many building construction projects that are undertaken throughout Ethiopia for the use of CBE to widen its banking services.

## 2.2 Risk Theory, Definition of Risk and Uncertainty

In modern society, risk is a crucial subject. People are exposed to dangers from the financial markets, nuclear power plants, natural disasters, and privacy breaches in ICT systems, to name just a few of the many areas where risk of harm and uncertainty are significant factors (Roeser, et al., 2012). It is in this sense that different risk theories have been formulated to accurately identify and predict its occurrence and impact. Risk theory provides frameworks that can contribute to mitigating risks, coming to grips with uncertainty, and offering ways to organize society in such a way that the unexpected and unknown can be anticipated or at least dealt with in a reasonable and ethically acceptable way (Roeser, et al., 2012).

One such theory was classical risk model which was introduced by Lundberg, who first considered the problem of finding the ruin probability and gave the so-called Lundberg inequality. Since these

works appeared before the development of the general theory of stochastic processes, their results were not quite mathematically rigorous. Next, the classical risk model was studied by Cramer and in modern risk theory; there are some classical proofs of the Lundberg inequality and the Cramér–Lundberg approximation (Mishura & Ragulina, 2016).

### 2.2.1 Defining Risk and Uncertainty

Risks are an aspect of uncertainty or an unpredictable event or circumstance that, if it materializes, may favorably or unfavorably affect one or more objectives (PMI, 2021). Risk can also be described as the possibility that a given event will occur, as well as frequently as the uncertainty of not being able to pinpoint the exact location or degree of probability of the risk. Loss or another damaging event could be brought on by the occurrence (Chong & Brown, 2003).

Risk can be further explained by an expression stated by (Lester, et al., 2017)everyone takes risk in its daily life whether its crossing street or descending down stairs, chance is taken every day and it's the reason why risk is frequently overlooked. Life would actually be intolerable if we were perpetually unsure of whether or not to perform a task or take a particular action based on whether or not the risk was acceptable. Furthermore, risk can also be defined as the combination of two factors, the anticipated effects of an event and the likelihood that the event will happen (Kendrick, 2015).

$$\text{Risk} = \text{Hazard} \times \text{Exposure}$$

Uncertainty is the lack of understanding and awareness of issues, events, paths to follow, or solutions to pursue. In its broadest meaning, uncertainty is a condition of not knowing or unpredictable outcomes. (PMI, 2021). Uncertainty has various aspects, including: the risk of not knowing what will happen in the future, ambiguity resulting from not knowing about the past, present, or future, complexity brought on by dynamic systems with unforeseen results and so forth.

Thus, it can be viewed that risk can be added to the broad definition of uncertainty. However, as uncertainty is defined as a lack of knowledge regarding a particular event or situation, not all uncertainty can be categorized as a risk. The following Figure 1.1 provides a detailed definition that expands on the ways in which risk and uncertainty differ from one another.

| TERM | UNCERTAINTY | RISK |
|---|---|---|
| Dictionary (Collins, 1979) | Lacking certainty; not able to be accurately known or predicted; not precisely determined, established or decided; liable to variation; changeable. | Possibility of incurring misfortune or loss; hazard; involving danger, perilous. |
| Thesaurus (Roget, 2008) | Ambiguity, ambivalence, anxiety, changeableness, concern, confusion, conjecture, contingency, dilemma, disquiet, distrust, doubtfulness, guesswork, hesitancy, hesitation, incertitude, inconclusiveness, indecision, irresolution, misgiving, mistrust, mystification, oscillation, perplexity, qualm, quandary, query, reserve, scruple, scepticism, suspicion, trouble, uneasiness, unpredictability, vagueness. | Accident, brinksmanship, contingency, danger, exposure, fortuity, fortune, gamble, hazard, jeopardy, liability, luck, openness, opportunity, peril, possibility, prospect, speculation, uncertainty, venture, wager. |

Figure 1 Risk and uncertainty definition (Hillson, 2009) Page 5

As mentioned in the above literature, the meaning of the two terms (risk and uncertainty) has a difference. However, it is used interchangeably; why? According to (Roeser, et al., 2012), risk science appears to be a paradigm of interdisciplinary research in which disciplines are united by risk. But the general term "risk" seems to mean different things in different disciplines when analyzing these two terms and labeling them as the reason for the discrepancies in the terms being interchangeably used since various scientists are focused on various aspects of risk.

## 2.3 Types of Risk

Many researchers view and classify a variety of risks that are pertinent to their research papers, whether through a case study that mirrors an important issue or through a logical understanding of risks and their classification. Strategic risks and operational risks, two categories of risks that are crucial to the nature of the organization where the study will be conducted, will be covered in detail by the author in this section of the literature review.

### 2.3.1 Strategic risk

Strategic risk is a sort of risk that manifests itself at the organizational level rather than at the individual level. When a company launches a big new change endeavor, these risks might be felt or expected; therefore, considering the risks related to such a project is critical. The following are examples of the types of strategic risk that might face an organization (Drennan & McConnell,

2007): political, economical, social, technological, legislative. Environmental, competitive and customer/citizen

Accountability for the risks that arise at the strategic level lies with the chief executive Officer (CEO) and other senior executives. Thus, responsible party must ask and assess the following questions and issues to better identify and deal with strategic risks (Olson & Wu, 2017):

Is there a formal process to identify potential changes in markets, economic conditions, regulations, and demographic change impacts on the business? Is new product innovation considered for both short-run and long-run impact? Does the firm's product line cover the customer's entire financial services experience? Is research & development investment adequate to keep up with competitor product development? Are sufficient controls in place to satisfy regulatory audits and their impact on stock price?

### 2.3.2 Operational risk

At the operational level, risk is present in the public body's day-to-day functions and services. These risks could arise from the people, property, or processes involved in providing the organization's required level of service. Operational risk takes many forms and can be described as follows (Drennan & McConnell, 2007): professional, financial, legal, physical, contractual, technological and environmental.

Every individual employee in an organization bears daily responsibility for risk management in this setting (Operational Risk) (Drennan & McConnell, 2007). And those individuals who are responsible for identifying and handling these risks must ask and assess the following question to better understand in how to handle operational risks (Olson & Wu, 2017): Does the firm train and encourage use of rational decision-making models? Is there adequate segregation of duties? Are there adequate cash and marketable securities controls? Are financial models documented and tested? Is there a documented strategic plan to technology expenditures?

### 2.3.3 Other types of risk

The next section of the literature review will discuss alternative risk classifications after defining the two types of risks in the previous section, which fully encompass a wide range of risks that are likely to be present at the organizational level and the personnel level within an organization as they are listed in (Outreville, 1998); (Drennan & McConnell, 2007) and (Flanagan & Norman, 1999), this are namely: pure; speculative; physical; dynamic; static; intangible; external; internal and controllable & uncontrollable risk

### 2.4 Sources, events and effect of Risk in a construction industry

The sources of risk and event of risk must be clearly distinguished in order to better understand and deal with risks as it is not always obvious to think in terms of the source, the event, the effect, for instance in the construction industry due to multiple reasons like poor performance of a contractor (source) late completion of a project (event) might occur to which the contractor might be liable to pay liquidated damage and the client suffers the consequential loss (effect) (Flanagan & Norman, 1999).A conceptual model was developed by (Rausand, 2011) to illustrate this link as shown in the below figure 2.

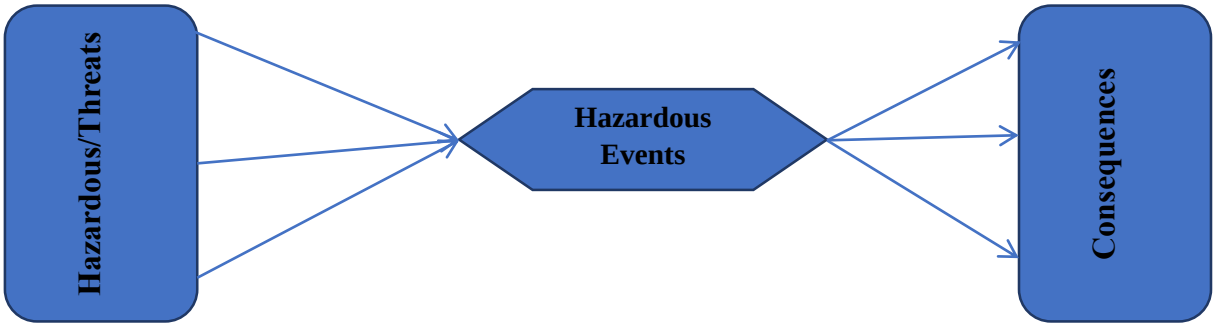


Figure 2 A simplified bow-tie model *(Rausand, 2011)* Page 6

The following table will try to show the sources (or hazardous threats as ben named by *(Rausand, 2011)*) of risk in a construction industry as well as its link to event and effect.

***Table 1Sequence showing the source, event and effect of risk adopted from (Flanagan and Norman, 1999)***

| Possible Sources | Possible Events | Possible Effects |
|---|---|---|
| Lack of Safety provisions | accident happening in the work place | injury to works man |
| Inflation | halting or reducing work activities due to high cost of construction material or manpower | failure to keep up within the cost estimate |
| political instability | war or civil unrest | Project halting |
| defective design | construction unsafe or unwanted construction deliverables | failure of the project from achieving the required operation needs; repetition of work |
| poor communication | disorganized display of working activities | failure to achieve the required quality, repetition of work |
| Unforeseen weather conditions | occurrence of heavy rain | damage to property as a result of fire or flood |
| late delivery crucial construction material | halting or reduction of project activity | Project delay |

Continuing on the topic of risk sources, risk sources can be thought of as the primary causes of risks in a project or company. Since projects exist and function within internal and external settings that have variable degrees of effect on value delivery, there are numerous sources of risks, both internal and external to a project (PMI, 2021). And learning more about these two project contexts can tremendously improve our understanding of the potential sources of risk.

### 2.4.1 Internal Environment of a project

Variables that are internal to the organization can result from the organization itself, a portfolio, a program, another project, or a mix of these. These can be things like practices, internal knowledge, or artifacts. Lessons learnt and finished products from prior efforts are both considered forms of knowledge. There are a number of examples listed on (PMI, 2021 page 16-17): however, they're not all: process assets; governance documentation; data assets; knowledge assets; security and safety; organizational culture, structure, and governance; geographic distribution of facilities and resources; infrastructure; information technology software; resource availability and employee capability)

### 2.4.2 External Environment of a project

Project outcomes may be enhanced, constrained, or unaffected by factors outside the project environment or organization. Several examples, although not all, are as listed follows on (PMI, 2021 page 18): marketplace conditions; social and cultural influences and issues; regulatory environment; commercial databases; academic research; industry standards; financial considerations and physical environment.

Aside from just entertaining the possible sources of risk on the construction industry from the view the project internal factor and external factor it is also possible to see sources of risk in a bit specific manner. Enshassi A. and Mayer P. (2001) pointed out the numerous sources of risk in construction projects and the industry as a whole in their book Managing Risks in Construction, and they have enumerated the various sources of risk as cited by (Mousa, 2005)in Figure 3 below.

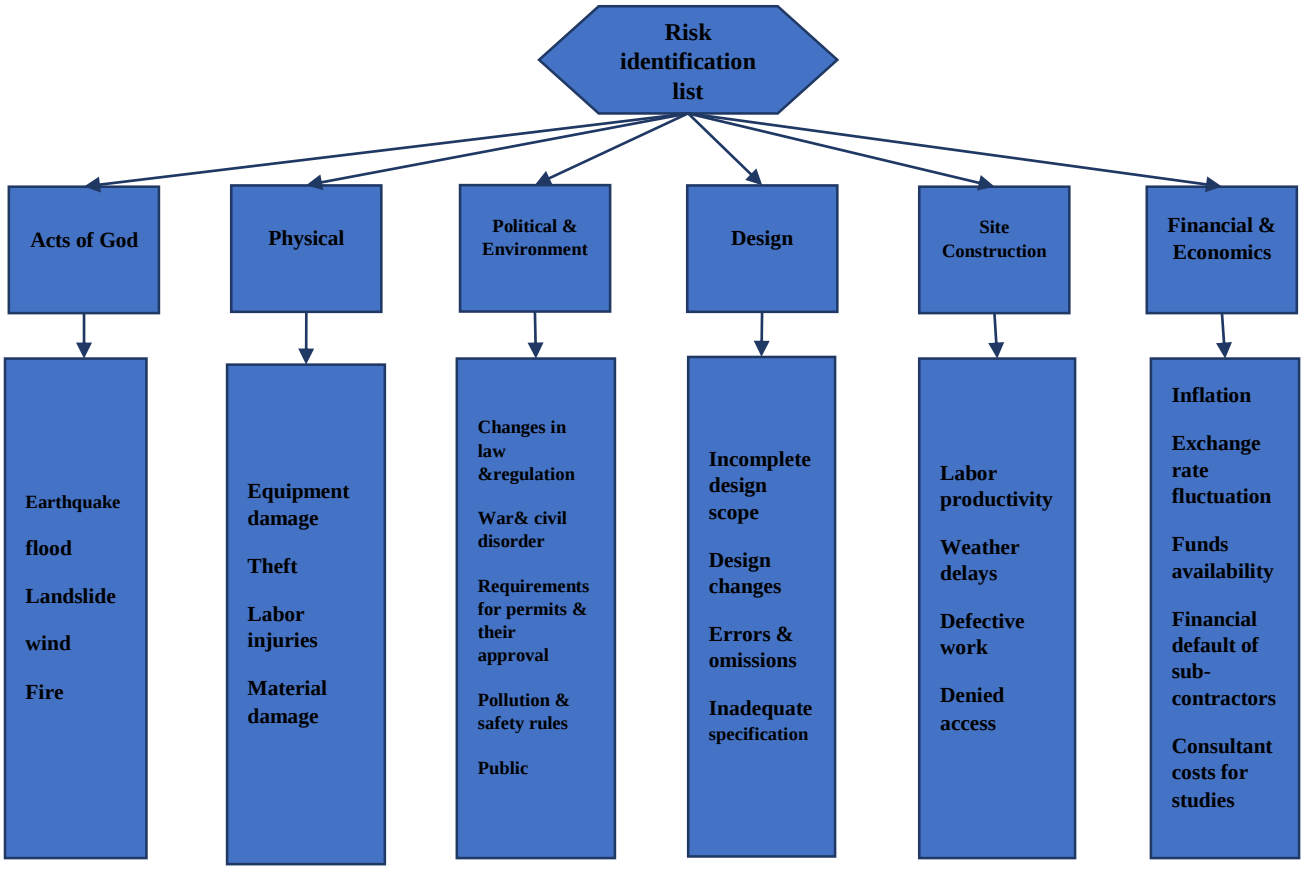


*Figure 3 Sources of Risk List, adapted from Enshassi & Mayer, (2001) cited by (Mousa, 2005)page 14*

## 2.5 Defining Risk Management

Organizing, planning, and coordinating resources to successfully achieve specific project goals and objectives is the core of the discipline of project management (PMI, 2021). Risk management is closely tied to project management. Although risk management has changed significantly over the past 40 years (Deventer, et al., 2013), it has been an institutionalized discipline for at least 100 years, and its early roots may be found in the specialized field of insurance, which has a long and storied history (Hopkin, 2017).

The culture, procedures, and organizational frameworks geared toward the efficient management of prospective opportunities and negative outcomes are referred to as risk management. The duties of setting the context, identifying, evaluating, assessing, treating, monitoring, and communicating risk are all part of the risk management process, which entails the systematic application of management policies, processes, and procedures (Coope, et al., 2005).Moreover, risk management

can be defined as the culture, procedures, and organizational frameworks that are focused on the efficient management of prospective possibilities and negative repercussions (Coope, et al., 2005).

Risk management calls for analytical abilities and a fundamental understanding of statistics, which is frequently seen as being mathematically challenging, occasionally theoretical, and unpractical. Yet, project manager or any one for that matter tasked with dealing regarding risks and their consequences can more accurately predict the impact of unforeseen occurrences on the project's conclusion by having a fundamental understanding of probability and distribution functions (Vanhoucke, 2012). Another way to learn more about risk management is to connect one's thinking with the risk management principles shown in Figure 4 below.

| Principle | Description |
|---|---|
| Proportionate | Risk management activities must be proportionate to the level of risk faced by the organization. |
| Aligned | ERM activities need to be aligned with the other activities in the organization. |
| Comprehensive | In order to be fully effective, the risk management approach must be comprehensive. |
| Embedded | Risk management activities need to be embedded within the organization. |
| Dynamic | Risk management activities must be dynamic and responsive to emerging and changing risks. |

Figure 4 Principle of Risk management *(Hopkin, 2017)* on page 58

Inadequate risk recognition, inadequate analysis of major risks, and failure to identify appropriate risk response activities can all contribute to an organization's inability to manage its risks effectively. Inadequate risk management may also be the result of failure to establish a risk management plan, explain that approach, and assign the corresponding tasks. However, it's also possible that the protocols or methods for risk management include flaws that prevent them from producing the desired results. Failure to properly manage risk can have disastrous results, including operations that are ineffective and/or inefficient, projects that are not finished on time, and strategies that are either not fulfilled or were inaccurate from the start (Hopkin, 2017).

## 2.6 Risk Management Process

The term "risk management process" refers to a method or conceptual framework for identifying, tracking, and managing risks. It is a straightforward split of the Risk Management concept into subcategories. So, it's crucial to understand the fundamental principles of risk management that anyone with a rudimentary understanding of risk may infer logically before delving into the subcategories of the Risk Management Process. The fundamental ideas or keys to successfully managing project risk as published by (Coope, et al., 2005) is: detecting, evaluating, and assessing risks systematically and early, and creating plans to manage them; transferring accountability to the party most qualified to manage risks, which may entail putting in place new practices, procedures, or systems or negotiating appropriate contractual arrangements; and making sure that the costs associated with risk reduction are proportionate to the significance of the project and the risks involved.

A number of variations of risk management process have been proposed by different scholars and books. These different approaches to risk management may look different by just looking at their name or labeling of the sub processes but they are almost the same in substance. Here are some risk management approaches advised and adopted by different authors and standards.

Association for Project Management defines risk management approach as an approach that comprises systems, processes, and techniques that make it possible to identify, evaluate, and manage the risks associated with a project and suggests the following step to undertake Risk Management: Initiate, Identify, Assess, Plan Response, and Implement Response (APM, 2018).

A risk management standard AS/NZS 4360:2004 defines Risk Management approach as the methodical use of management rules, practices, and techniques to accomplish the duties of communicating, setting the scene, identifying, analyzing, assessing, treating, monitoring, and reviewing while suggesting the following steps to Identify context, Risk Identification, Risk Analysis and Risk Evaluation, Risk Treatment, Communication & Consultation and finally Monitoring & Review (AS/NZS 4360:2004, 2006).

IRM Risk Management standard 2012 lays its own way of proceeding with Risk Management: Organization Strategic Objectives, Risk Identification & Risk Description, Risk Estimation & Risk Evaluation, Risk Treatment, Risk Treatment, Risk Reporting and Monitoring & Review (IRM, 2022).

The British Code of Practice for Risk Management & Guidance for ISO31000 defines risk management process as a set of components that provide the foundations and organizational arrangements for designing, implementing, monitoring, reviewing and continually improving risk management throughout the organization and suggests the following steps in Risk Management approaches: Risk Context, Risk Identification, Risk Assessment, Risk Response, Risk Reporting and Risk Review (BS 31100:2011, 2011).

Another suggestion forwarded for risk management process is by Dr. David Hillson as he describes and breaks down the process of risk management into many stages. The following section of this literature review will use this as a conceptual framework and go in-depth to better comprehend the various Risk Management Process stages.

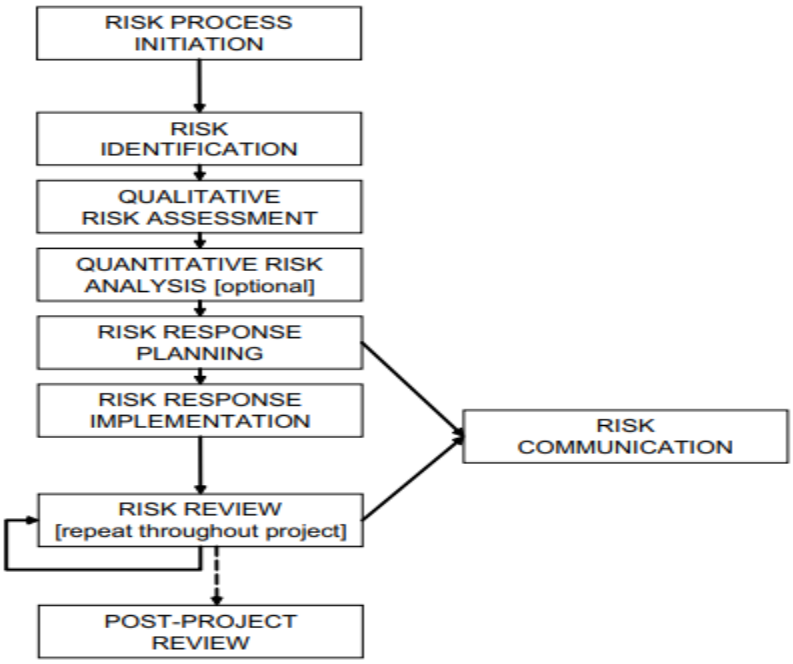


Figure 5 Risk Process (Page 28 of (Hillson, 2009))

### 2.6.1 Risk Process initiation

It is the initial action performed to start the risk management process. It is done to either plan risk management in general or to specify the scope, objectives, and practical criteria of the project risk management process (Hillson, 2009). Also, this stage, which is also known as "Establishing the Context," focuses on creating a framework for the risk identification and assessment tasks that will come after (Coope, et al., 2005).

This step are: establishing the organizational and project context in which the risk assessment is taking place; specifying the key goals and outcomes; identifying a set of success criteria against which the effects of identified risks can be assessed; and defining a set of essential components for organizing the risk identification

The project execution strategy, project charter, cost and schedule assumptions, scope definitions, engineering designs and studies, economic analyses, and any other pertinent paperwork concerning the project and its goal are examples of significant project documents that make up the context inputs. The outcome from this stage is a concise summary of the project's goals and particular success criteria, the goals and parameters for the actual risk assessment, and a list of crucial components for organizing the risk identification process (Coope, et al., 2005).

### 2.6.2 Risk identification

Risk identification is the process of identifying all currently known risks, including both individual risks and sources of overall project risk (Hillson, 2009). It also involves figuring out what, how, and why something might occur (Coope, et al., 2005); the process of risk identification identifies potential outcomes that could affect the project's goals and how they might manifest themselves. The process of identifying risks must be exhaustive because unidentified risks cannot be assessed and their later appearance could endanger the project's success and bring about unpleasant surprises.

To systematically assess risks in each area of the project that needs to be handled, this approach should be organized utilizing the essential elements. A thorough list of potential risks to the project's successful completion is the result, which is typically presented as a risk register with management responsibilities (risk owners) assigned to each risk (Coope, et al., 2005).

### 2.6.3 Risk analysis

Risk analysis is used to prioritize risks based on their main characteristics, identify patterns of risk exposure (Qualitative Risk Analysis), estimate the overall project risk exposure, and determine the cumulative impact of risks on the project's outcome (Quantitative Risk Analysis) (Hillson, 2009).

Another way to define risk analysis is as the systematic use of facts at hand to establish the likelihood of specific events occurring and the scope of their repercussions. It may make use of a wide range of mathematical and non-mathematical models and methods. It is the process by which

risks are assessed that determines whether they are tolerable or not and identifies which risks should be given the highest priority when creating responses for risk treatment (Coope, et al., 2005).

To decide where the greatest emphasis should be placed when treating identified concerns, these priorities are used. They help with organized resource allocation and action planning. This step in the risk management process produces a prioritized list of risks and a thorough understanding of their potential effects on the project's success. The risk register contains a record of the agreed-upon risk priority, consequence and likelihood ratings, and consequence ratings (Coope, et al., 2005).

### 2.6.4 Risk Response Planning and Implementation

Risk response planning is a method for choosing the best action methods and activities for each specific risk as well as for the overall project risk. Implementing agreed-upon measures, evaluating their effectiveness, and identifying any secondary hazards that may occur are the goals of risk response (Hillson, 2009). Similarly, it also refers to the phases in which management responses to risks are proposed and put into action in a manner suited to the seriousness of the risk and the significance of the project. (Coope, et al., 2005).

But what are the methods and strategies related to risk management? An essential question regarding the risk management procedure in this category, which will be discussed in detail consequently,

#### 2.6.4.1 Risk Prevention

Strategies for risk prevention aim to eliminate sources of danger or significantly lower their likelihood of happening or it is a risk-response strategy that calls for taking measures to prevent risks from occurring. It can be done by using more thorough planning, choosing alternative strategies, enhancing designs and systems engineering, adopting better design standards, and other similar methods (Coope, et al., 2005).

#### 2.6.4.2 Risk Mitigation

The goal of risk mitigation is to reduce the effects of risks. Certain risks, such as those brought on by fluctuating economic conditions or severe weather, cannot be completely eliminated. Risk management techniques may lessen the likelihood of other risks developing, but risks may still

happen. In these situations, risk management must be focused on dealing with their effects and making sure that negative effects on the project and the project criteria are kept to a minimum. Among the impact mitigation tactics are (Coope, et al., 2005): contingency planning; separation or relocation of an activity and resources; quality assurance; crisis management and disaster recovery plans.

Risk sharing is a prime example of reducing the impact of a risk because it enables two parties to share or have an agreed-upon stake in the project through the signing of a contract. Another example of risk sharing is insurance, a widely-used strategy that many organizations use to share risk (Coope, et al., 2005).

There are four categories of risk mitigation/reduction (Flanagan & Norman, 1999). The first step is to inform and train staff about potential risks. Second, enlisting outside assistance (for instance, a contractor can employ a quality assurance company to double check all the work). Thirdly, there is a need for systems to guarantee consistency and make sure staff members ask the ‘’what if?’ question. Fourth, physical defense against injury to individuals and damage to property.

#### 2.6.4.3 Risk Retention

Risks that produce individually small, repetitive losses are the most suited to retention (Flanagan & Norman, 1999). There are instances when risks cannot be avoided or transferred because doing so would be expensive. Thus, an organization must or might choose to retain the risks in these situations. Under these situations, businesses can start taking risks as a necessary element of operating their operations and benefit from the resulting rewards. Organizations may occasionally decide to purposefully hold onto large risks, especially if they have the necessary management skills (Coope, et al., 2005).

### 2.6.5 Risk Communication

Risk communication is meant to inform project stakeholders about the present state of risk exposure and the implications for the project's success, covering both specific hazards and overall project risk, if necessary. (Hillson, 2009).

Everyone from various areas of life, including parents, kids, lawmakers, regulators, scientists, farmers, industrialists, factory workers, and writers, participate in risk communication. It is a

component of the science of risk assessment and the risk management procedure. (Lundgren & McMakin, 2018).

### 2.6.6 Risk Review

Risk review examines changes in hazards that have been recognized and total project risk exposure. It also determines any extra actions that are necessary and evaluates the efficiency of the project risk management process. (Hillson, 2009).

### 2.6.7 Post-Project Review

It is the element of the risk management process that is most frequently disregarded in other risk management standards, as seen in Figure 4, yet it is still crucial. Finding risk-related lessons gained that can be applied to future projects is the goal of the post-project evaluation. (Hillson, 2009).

## 2.7 Understanding Risk Attitude

### 2.7.1 What is Risk Attitude?

Combining the definitions of risk and attitude, which are each defined as ‘‘an uncertainty that could have a positive or negative effect on one or more objectives”, and "a chosen state of mind, mental view, or disposition with regard to a fact or state," yields a working definition of "risk attitude" as "a chosen state of mind with regard to those uncertainties that could have a positive or negative effect on objectives," or more simply "a chosen response to perception of significance." (Hillson & Murray-Webster, 2004).The various forms of risk attitude is listed and discussed below.

### 2.7.2 Risk Averse

A risk-averse approach with a preference for safe returns People and groups who are risk-averse are realistic, accommodating, and appreciate common sense. They prefer facts over hypotheses and are in favor of tried-and-true techniques. They might have a low tolerance for ambiguity and uncertainty and a tendency to seek security and finality when faced with risk. Moreover, they could have a propensity to overreact to dangers and under react to opportunities (Hillson, 2009).

A risk-averse person or group will try to avoid the risk, even if it means giving up a (anticipated) potential gain, hence this suggests that the certainty equivalent for a risky activity is lower than its expected value (Concina, 2014).

### 2.7.3 Risk Seeking

Risk loving goes in the opposite direction to the Risk Averse: the certainty equivalent of a risk lover is always higher than the expected value (Concina, 2014). It is a liberal risk attitude with a preference for speculative payoffs. Risk-takers are inventive and adaptive, enjoy life, and don't hesitate to act. They might dismiss hazards as minor obstacles to be surmounted. They could also exaggerate the value of potential possibilities and want to seize them quickly (Hillson, 2009).

### 2.7.4 Risk Neutral

Impartial risk-taking with a preference for long-term gains Individuals or groups who are risk-neutral are neither risk-averse nor risk-seeking; instead, they look for techniques and plans with high potential rewards in the future. They consider the long term when dealing with risks and opportunities, and they only act when doing so is likely to result in major gain (Hillson, 2009).

## 2.8 Emperical Literature Review Risk Management practices in the construction industry

### 2.8.1 Risk Management practice on the construction practice of other part of the world

A comprehensive study done by L.S. van der Kuijp on African Infrastructure projects concluded that the Risk management is performed in an ad-hoc manner which results in ineffective risk management; RM is not embedded in the organization; the quality and effectiveness of risk management depend on the awareness and knowledge of the one responsible; the results of the risk management process are not shared clearly and systematically and RM process even though are started they are not treated as a continuing process (Kuijp, 2017).

A study to test the relationship between risk management practices and project performance was conducted following the year-over-year financial losses the Oman construction industry was incurring. The empirical result of the study revealed that practicing risk management improves the performance of construction projects significantly (Asaadi & Norhayatizakuan, 2021). By conducting similar research to assess the risk management practice of the Malaysian construction industry, it was found that risk management has not been highly implemented in the industry, which has led to poor project performance. (Moshood, et al., 2020).

Similar research conducted on the Lebanon construction sector reveals that proper implementation of a risk management strategy in the Lebanese construction industry will reduce losses in the project and increase the possibility of its success, and the significant risks affecting the sector are financial risks such as currency fluctuation and inflation. However, construction risk management was not sufficiently implemented in the Lebanese construction sector (Shibani, et al., 2022).

Research conducted in 2019 under the title Risk Management in construction project: A study on the state of practice attempted to assess the RM practice among professionals of medium and large construction companies active in the regions of Greece and the Middle East (Fevranoglou & Diakaki, 2019). The analyzed results of the questioner distributed among the industry professionals indicate that construction companies, irrespective of size and region, get engaged in, but do not systematically implement, risk management activities during the whole lifecycle of their projects, a fact that influences projects' successful completion in terms of compliance with budget, time schedule, and specifications and standards.

### 2.8.2 Risk Management practice on the construction industry of Ethiopia

After looking the trends of RM practices around the world, now similar attempt will be made to review several research and article previously done in Ethiopia. Even though Ethiopia's construction sector is flourishing, it is still difficult to deliver projects efficiently in terms of time, money, and quality (Hailemarkos, 2020), one of the biggest obstacles to the success of building projects in Ethiopia is a lack of risk management (Mitikie, et al., 2017).

According to a study on Ethiopian building construction projects, the methods used to manage risk in these projects were found to be heavily reliant on an individual's judgment and prior experience. The study also revealed that most construction projects in Ethiopia are not finished as originally intended because they typically encounter delays, cost overruns, or quality problems (Mesfin, 2014).

Similarly, study was undertaken for the home development project of the Addis Ababa City Administration. The study's conclusions showed that there isn't a well-structured policy or guideline that specifies how to handle risks in projects. Usually, there isn't a set or standardized risk management procedure used in the project. The majority of participants said that risk management was not viewed as a continuous process in the project (Mohammed, 2018). A similar

study on Ethiopia's construction industry came to the conclusion that the projects lack effective and scientific risk management (Erstu, 2017).

Furthermore, a study was conducted on local G-1 contractors in Addis Ababa, Ethiopia, on assessing their risk management practices, and the findings showed that construction risks are not managed by applying risk management principles and techniques and through the applicability of risk management tools and models, whereas applying formal risk management principles and techniques in construction projects and managing risks through the applicability of risk management models and tools are recognized as a very important risk management system in order to achieve the goal of the project by the participants of the study (Alemayehu, 2018).

In view of that, it is safe to assume in almost many cases for building construction sector of Ethiopia, Risk Management as a tool is barley understood at its abstract level let alone to be implemented and utilized to remedy the bad name of the construction sector. Nevertheless, even while risk is inherent in all project endeavors, it can be properly managed to reduce its negative effects on the objectives of construction projects. As a result, risk analysis and management are still a key component of project management for construction projects today in an effort to handle uncertainty and unforeseen events efficiently and achieve project success (Yadeta, 2020).

Inconclusion the various but limited empirical research review done on the topic suggests risk management isn’t implemented at all or not treated as a continued process if it is even implemented at some degree. This trend seems to be the norm in the construction industry of most countries. Moreover, these days every industry's risk management practice in other nations shows that risk management serves the clear purpose of enhancing project implementation efficiency, reducing costs, and enhancing project profitability (Fu-zhou & Hong-yuan, 2011). It indicates that a significant improvement in outcomes will result from assessing the existing status of Risk Management techniques and correcting the obvious gaps that exist in their implementation.

# Chapter Three

# 3. Research Methodology

## 3.1 Research Design

A research study is categorized as a descriptive study if it makes an effort to describe anything in detail, such as the living conditions of a community or opinions toward a certain topic (Kumar, 2011) or to characterize people, groups, things, events, or circumstances (Leavy, 2017). Descriptive research was chosen as the method of investigation since this study's goal is to evaluate the RM practices of building construction methods in the case of the CBE-BCM department.

## 3.2 Research Approach

This paper research approach involves the collection and analysis of numerical data to answer research questions and test hypotheses, which make a quantitative approach.

## 3.3 Population and Sampling Techniques

### 3.3.1 Sources of the study population

The study has been conducted at the CBE-BCM department, where two primary units exist that deal with the building construction needs of CBE. As described early in this paper, the aim is to assess the risk management practices of this department. Accordingly, the target population for this study includes all working staff that works directly in relation to building construction management, apart from supportive staff that merely exists to help the department function in its day-to-day work.

### 3.3.2 Target Population

The total number of employees or staff that works directly in relation to building construction at CBE-BCM is 37, and all of them are considered a sample for this study making this study a census study by which an attempt has been made to collect data from each member of the department. The questioner was copied in a google form and send to all 37 members of the department to which 34 has responded in time. The staff working at CBE-BCM are responsible for need assignment study of a building for CBE; quantity preparation; design review; interacting with the relevant bank body to get approval for initiating building construction; monitoring contractors and consultants; reviewing and effecting payment for contractors and consultants; keeping tabs on

different guaranties and bonds; dealing with different stakeholders; and managing the contracts of both contractors and consultants. This makes the staff well suited to assess the risk management practices of the CBE-BCM.

## 3.4 Data sources and its collection method

### 3.4.1 Sources of data

In this study, primary and secondary data sources has been employed. In order to identify and explain the sources of risks and the risk management (RM) strategy, secondary data from published journals, books, working papers, reports, and theses was first used.

### 3.4.2 Data Collection Method

Then a questioner has been employed derived from literature review to gather primary data from staff members of CBE-BCM that helped to conclusively know the risk management practice of the CBE-BCM department. The questionnaire has five sections. The questions in the first segment focuses on the respondents' overall profiles. General inquiries about CBE-BCM's risk management procedures have made up the second half of the test. The third part of the questioner is designed to assess the risk management process at CBE-BCM. The fourth section is structured in a way that will enable to get the perspective of CBE-BCM staff on the significance of risk that are derived from literature review and peer discussion conducted from few staff members of CBE-BCM. The fifth and the last section of the questioner is aimed at identifying the risk response and risk attitude of CBE-BCM. Moreover, the designed questioner was converted to a google form and distributed to the respondents to make sure the survey was conducted in convenient way for the respondents.

## 3.5 Method of Data Analysis

Following the data collection from the respondents, the primary data has been evaluated using IBM SPSS Statistics version 27.0.1 statistical computer software. The collected raw data will then be transformed into a format that is appropriate for analysis and interpretation. The descriptive statistics feature of the SPSS software has been used to display the collected data in percentages and tables.

## 3.6 Validity and Reliability

Validity is the capacity of an instrument to measure what it is designed to measure (Kumar, 2011), or it can be described as the degree to which a measure genuinely captures what we believe it to be measuring (Leavy, 2017). Reliability refers to the consistency and stability of a research tool, which makes it predictable and accurate (Kumar, 2011). It can also be defined as the consistency of results (Leavy, 2017).

The potential for error in a research project stemming from the tools used has an impact on reliability. The similarity of results from employing the same tools in different operations is one of the methods for assuring reliability of research. Data collection techniques has been carefully chosen, with some inspiration drawn from earlier research done by (Euripides, 2008). Furthermore, in order to ensure the validity and reliability of the questioner the following steps has been taken.

First the questioner was evaluated and reviewed by the researcher's advisors to check the its validity & reliability. Then pilot questioner was prompted for review from the respondents, in fact few willing respondents have commented on it and their comment was utilized. Carefully control or standardize all experimental procedures and providing clear introductory briefing regarding the intention of the study to all of the questioner respondents involved in the study was also conducted to ensure the validity and reliability of the research.

In addition, automated procedures have been utilized, whenever possible; like SPSS software, google form to make it convenient for the respondents and also to minimize human error during data collection, in addition excel software used during data entry to SPSS software and analysis of data has been carried out by SPSS version 27.0.1. Moreover, Cronbach's alpha was calculated for section of the questioner in order to ensure the reliability of the questioner or to check the internal consistency of the questions. All the results as indicated in the below figure 6 scored more than 0.7.

***Table 2 Cronbach Alpha Result***

| Reliability Statistics | | |
|---|---|---|
| Questioner Parts or segments | Cronbach's Alpha | N of Items |
| 1 | 0.879 | 6 |
| 2 | 0.752 | 7 |
| 3 | 0.851 | 25 |
| 4 | 0.830 | 25 |
| 5 | 0.753 | 2 |

### 3.7 Ethical Consideration

The goal of the research has been fully disclosed to each and every participant who has provided a response to the research question. All participants will be treated in accordance with the ethical principles of research, which include respecting them as individuals, acting benevolently, obtaining their informed consent, and making them aware of their respective rights to have this study completed entirely in a collaborative manner (voluntary). The identity of respondents has been kept a secret. The information gathered throughout this research has only been used for this study; all secondary data used in this paper has also been properly cited.

# Chapter Four

# 4. Results and Discussions

## 4.1. General Profile of the Respondents

This section provides an overview of the respondents' demographic data, including age, educational attainment, job title, years spent working at CBE-BCM, and total years of experience.

***Table 3 General Information of the respondents***

| | | Count | Column N % |
|---|---|---|---|
| Age | 20 – 30 | 24 | 70.6% |
| | 31 - 40 | 7 | 20.6% |
| | 41 - 50 | 2 | 5.9% |
| | 51 - 60 | 1 | 2.9% |
| Gender | Female | 17 | 50.0% |
| | Male | 17 | 50.0% |
| Education level | Postgraduate degree | 17 | 50.0% |
| | Undergraduate degree | 17 | 50.0% |
| Total work Experience | 1 - 3 | 3 | 8.8% |
| | 11 - 15 | 4 | 11.8% |
| | 16 and above | 4 | 11.8% |
| | 4 - 5 | 13 | 38.2% |
| | 6 - 10 | 10 | 29.4% |
| Total work Experience at CBE-BCM | 1 - 3 | 6 | 17.6% |
| | 11- 15 | 3 | 8.8% |
| | 4 - 5 | 15 | 44.1% |
| | 6- 10 | 10 | 29.4% |
| Position at CBE-BCM | Assistant Vice President | 1 | 2.9% |
| | Associate Engineer | 11 | 32.4% |
| | Director | 1 | 2.9% |
| | Junior Engineer | 3 | 8.8% |
| | Manager | 1 | 2.9% |
| | Project Manager | 4 | 11.8% |
| | Senior Engineer | 13 | 38.2% |

***Source: own survey, 2023***

The above table (Table 3) reveals that the majority of CBE-BCM employees (70.6%) are between the ages of 20 and 30, while only one employee is between the ages of 51-60 (2.9%). 31–40 (20%) and 41–50 (4.9%) are the remaining staff members at the CBE–BCM age range. It also shows that

percentage of male and female respondents is 50% which is also true to the percentage of undergraduate and postgraduate degree holder.

As it is also shown in table 3, the majority of respondents at CBE have a total year of experience between 4-5 years (38.2%), which is followed by experience between 6-10 years (29.4%), experience between 11-15 years, and experience between 16 and above (11.8% each), while 8.8% of respondents have experience between one and three years.

Table 3 also shows the majority of respondents have a total year of experience specific to CBE-BCM between 4-5 years (44.1%), which is followed by experience between 6-10 years (29.4%), experience between 1-3 years 17.6%, while 8.8% of respondents have experience between 11-15 years. In addition, as it can been seen on table 3, the majority of the staff have attained the senior engineer title (38.2%), followed by associate engineers at 32.4%, project managers at 11.8%, junior engineers at 8.8%, and managers, directors, and assistant vice president, each with a percentage of 2.9%.

In general, although the staff at CBE-BCM tends to be young, they make up for it by having higher education, which led the researcher to believe that, along with the respondents' having more than enough experience with their field or within the department as well, they were more than suited or qualified to respond to the questioner.

## 4.2 General Questions on Risk Management Practice of CBE-BCM

This section of the questioner is intended to evaluate the trends of risk management practices at CBE-BCM with the goal of determining whether the department has a dedicated team to handle risk, whether or not the department uses a standard method to manage risks, whether the department collaborates with other departments at CBE-BCM to identify and manage risks, whether the risk management process adheres to a written guideline, and whether risk management is treated as a continuous process.

***Table 4 Response to risk management practice at CBE-BCM***

| | | Count | Column N % | Mean | Std. Deviation |
|---|---|---|---|---|---|
| There is a dedicated staff within CBE-BCM that deals with managing risk. | Strongly Disagree | 8 | 23.5% | 2.5 | 1.135 |
| | Disagree | 9 | 26.5% | | |
| | Neutral | 10 | 29.4% | | |

| | | | | | |
|---|---|---|---|---|---|
| | Agree | 6 | 17.6% | | |
| | Strongly Agree | 1 | 2.9% | | |
| There is a specified or standardized method to risk management that is being employed by CBE-BCM. | Strongly Disagree | 7 | 20.6% | 2.79 | 1.274 |
| | Disagree | 8 | 23.5% | | |
| | Neutral | 6 | 17.6% | | |
| | Agree | 11 | 32.4% | | |
| | Strongly Agree | 2 | 5.9% | | |
| CBE-BCM coincide/work with other CBE departments to identify and manage risks. | Strongly Disagree | 4 | 11.8% | 3.03 | 1.114 |
| | Disagree | 6 | 17.6% | | |
| | Neutral | 11 | 32.4% | | |
| | Agree | 11 | 32.4% | | |
| | Strongly Agree | 2 | 5.9% | | |
| Identifying, analyzing, planning responses, communicating, and conducting risk reviews follows written procedures, guidelines, or manuals at CBE-BCM. | Strongly Disagree | 4 | 11.8% | 2.62 | 1.045 |
| | Disagree | 14 | 41.2% | | |
| | Neutral | 8 | 23.5% | | |
| | Agree | 7 | 20.6% | | |
| | Strongly Agree | 1 | 2.9% | | |

***Source: own survey, 2023***

As it is shown in the above table (Table 4) the finding shows that the majority of the respondents are either neutral (29.4%); disagrees or strongly disagrees (26.5% & 23.5% respectively) while only 17.6% and 2.9% of the respondents agree and strongly agree respectively for the question if there is a dedicated staff within CBE-BCM to handle risk management. According to the research's findings, the majority of respondents did not believe that CBE-BCM had a dedicated staff that dealt with risk management. Nevertheless, some respondents however few believe that CBE-BCM has a dedicated staff that handles managing the risk aspects of the ongoing building projects. This might be because no one is officially put in charge of assigning staff to manage risks, which would put everyone on the same page.

The question of whether there is a specific or standardized method for managing risks as illustrated in the above table (Table 4), and the results show that 61.8% of respondents are neutral, disagree,

or strongly disagree, while 32.4% & 5.9% of respondents feel agree or strongly agree, respectively. This, according to the fining let the researcher to believe, indicates that the majority of respondents think that CBE-BCM does not employ a set of standardized or specified methods for risk management.

As per table (4) 32.4 % of the respondents are neutral, another 32.4% agree and 5.9% strongly agree on the question whether CBE-BCM coincides with other CBE department in managing risks, while the rest that means 17.6% & 11.8% of the respondents disagree and strongly disagree respectively. In this context the majority respondents are neutral, disagree or strongly disagree 61.85% leading the researcher to believe CBE-BCM doesn't collaborate with other CBE departments in managing risks.

Table (4) also shows that 11.8% of the respondents strongly disagree; 41.2% disagrees and 23.5% fells neutral, while 20.6% & 2.9% of the respondent's fells like the department utilizes written guidelines or manuals for managing risks as per the risk management process. Thus, the researcher believes it is reasonable to assume since the majority of the respondents 76.5% who fells neutral, disagree or disagree holds the water to conclude CBE-BCM doesn't utilize written guidelines or manual for each risk management process.

***Table 5 Response regarding understanding & continuity of RM***

| | | Count | Column N % | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Risk management is completely understood in the department (CBE-BCM). | Strongly Disagree | 3 | 8.8% | 2.85 | 1.105 |
| | Disagree | 13 | 38.2% | | |
| | Neutral | 5 | 14.7% | | |
| | Agree | 12 | 35.3% | | |
| | Strongly Agree | 1 | 2.9% | | |
| Risk management process is performed from identification of risk, implementation of response to project risk review phase or the process without the process being stopped or disrupted at some point. | Strongly Disagree | 4 | 11.8% | 2.88 | 1.038 |
| | Disagree | 7 | 20.6% | | |
| | Neutral | 13 | 38.2% | | |
| | Agree | 9 | 26.5% | | |
| | Strongly Agree | 1 | 2.9% | | |
| Risk Management Process | Post Project Risk Review | 4 | 22.22% | - | - |

| | | | | | |
|---|---|---|---|---|---|
| | Risk Assessment | 5 | 27.78% | - | - |
| | Risk Identification | 5 | 27.78% | - | - |
| | Risk Response Implementation | 3 | 16.67% | - | - |
| | Risk Response Planning | 1 | 5.55% | - | - |

***Source: own survey, 2023***

According to the results of the above-mentioned survey on table (5), 8.8% of respondents strongly disagree, 38.2% disagree, 14.7% fells neutral, 35.3% agree, and only 2.9% strongly agree that risk management is fully understood in the department. The researcher concluded that risk management isn't fully understood within the department because the majority of respondents, 61.8%, generally felt neutral, disagreed, or strongly disagreed.

For the question whether risk management process is performed at the department without interruption at some point the respondents answered as 2.9% strongly agree; 26.5% agree and 38.2% neutral, while 20.6% disagrees and 11.8% agrees. The majority of the respondents 70.6% neutral, disagree, strongly disagree with the question and this led the researcher to believe the process has been discontinued at some point which means risk management process isn't treated as a continuous process. And a follow up question was asked to see which part of the risk management process is discontinued.

Out of 18 respondents that fells strongly enough to point out where the Risk Management process is discontinued, respondents indicated that the process was stopped at the risk identification and assessment stage (27.78% each), post-project risk review (22.22%), risk response implementation (16.67%), and risk response planning (5.55%) in response to the follow-up question regarding the risk management process being treated as a continuous process. With the help of this information, the researcher can reasonably draw the conclusion that, while some projects' risk management processes are terminated at the post-project risk review stage (22.22%), the CBE-BCM department typically terminates its risk management process at the early stages of the process, which are identification and assessment (55.56%).

The researcher has noted in this section of the results and discussion that CBE-BCM does not have a dedicated staff member for managing risk, that risk management is not fully understood, that CBE-BCM does not work with other CBE departments to manage risk, and that there does not

appear to be either a clear policy for managing risks or a written set of manuals for applying each risk management process.

Moreover, the researcher also observed that CBE-BCM does not treat risk management as a continuous process because the process has been discontinued primarily at the early stages, namely the identification and assessment of risks, even though some projects tend to halt the risk management process at the post-project risk review stage.

## 4.3 Assessing the Risk Management process of CBE-BCM

This section of the questioner was developed to evaluate how the CBE-BCM's risk management procedure or process appears, and this section of the paper is devoted to presenting and discussing the techniques the CBE-BCM employs to identify and evaluate risk.

***Table 6 Response regarding method of RM***

| | | Count | Column N % | Mean | Std. Deviation |
|---|---|---|---|---|---|
| CBE-BCM department uses Brain-storming sessions to identify risk. | Strongly Disagree | 5 | 14.7% | 2.44 | 0.991 |
| | Disagree | 15 | 44.1% | | |
| | Neutral | 9 | 26.5% | | |
| | Agree | 4 | 11.8% | | |
| | Strongly Agree | 1 | 2.9% | | |
| CBE-BCM department uses Analysis of historical data of projects to identify risk. | Strongly Disagree | 3 | 8.8% | 2.97 | 1.114 |
| | Disagree | 10 | 29.4% | | |
| | Neutral | 8 | 23.5% | | |
| | Agree | 11 | 32.4% | | |
| | Strongly Agree | 2 | 5.9% | | |
| Discussions are held regarding project risks among project teams regularly. | Strongly Disagree | 4 | 11.8% | 2.82 | 0.999 |
| | Disagree | 8 | 23.5% | | |
| | Neutral | 12 | 35.3% | | |
| | Agree | 10 | 29.4% | | |
| Risk discussion often occurs when the risk is currently a problem for the project in the present rather than discussing the issue prior before the risk manifests itself in to a problem. | Strongly Disagree | 2 | 5.9% | 3.44 | 1.05 |
| | Disagree | 5 | 14.7% | | |
| | Neutral | 6 | 17.6% | | |
| | Agree | 18 | 52.9% | | |
| | Strongly Agree | 3 | 8.8% | | |

***Source: own survey, 2023***

The above table (6) shows that the respondents fell as 14.7% strongly disagree, 44.1% disagree, 26.5% neutral while only 11.8% and 2.9% of respondent's fells agree and strongly disagree. As the majority of respondents 85.3% felt strongly agree, disagree or neutral to the question whether CBE-BCM utilizes brain storming sessions to identify risk, the researcher is compelled to say CBE-BCM in fact don't use brain storming session to identify risks. Due to the flexibility and capability of brainstorming sessions, they are highly recommended for risk identification (Coope, et al., 2005). The fact that CBE-BCM does not use these methods leads one to believe that the department is not giving enough attention to the risk management process.

Table (6) also shows that 8.8% of the respondents strongly disagree, 29.4% disagree and 23.5% fells neutral, while 32.4% fells agree and the rest 5.9% fells strongly agree to the question CBE-BCM uses analysis of historical data of projects to identify risk. As using of historical data is also widely used as a risk identification tool (Coope, et al., 2005) and as it is predicator of not of fully & consistently applying risk management process since if done correctly one can clearly find a data from post project risk review to be used for new starting project.

The above table (6) also reveals that while 29.4% of respondents said they agree, none of them strongly agreed, 11.8% of respondents felt strongly disagreed, 23.5% disagreed, and 35.3% feel neutral about the statement that discussions about project risk are held on a regular basis. The results overwhelmingly convince the researcher that CBE-BCM doesn't regularly hold discussions about project risks among project teams.

Furthermore, according to the table (6) 5.9% of respondents strongly disagree, 14.7% disagree, and 17.6% feel neutral about the statement that risk discussions take place after risks have become a problem rather than before, while 52.9% of respondents and 8.8% of respondents strongly agree that this is the case. This data shows that the department uses a proactive strategy to manage various project risks, which is another definite indication of the fact that risk management isn't given priority there.

***Table 7 Response regarding risk communication, risk importance & usage of project lesson learned***

| | | Count | Column N % | Mean | Std. Deviation |
|---|---|---|---|---|---|
| CBE-BCM staff frequently alert management or other stakeholders to potential risks. | Strongly Disagree | 3 | 8.8% | 3.12 | 1.094 |
| | Disagree | 7 | 20.6% | | |
| | Neutral | 9 | 26.5% | | |
| | Agree | 13 | 38.2% | | |
| | Strongly Agree | 2 | 5.9% | | |
| Lesson learned from past projects is being recorded and used for current projects in regards to managing risks. | Strongly Disagree | 1 | 2.9% | 3.21 | 0.914 |
| | Disagree | 7 | 20.6% | | |
| | Neutral | 11 | 32.4% | | |
| | Agree | 14 | 41.2% | | |
| | Strongly Agree | 1 | 2.9% | | |
| Risk management is considered important in achieving the CBE-BCM objectives. | Strongly Disagree | 2 | 5.9% | 3.41 | 1.048 |
| | Disagree | 5 | 14.7% | | |
| | Neutral | 7 | 20.6% | | |
| | Agree | 17 | 50.0% | | |
| | Strongly Agree | 3 | 8.8% | | |

***Source: own survey, 2023***

The respondents' responses to the question of whether CBE-BCM staff frequently warns management or other stakeholders of potential risks are represented in the table as follows: 38.2% agree, 5.9% strongly agree, 8.8% strongly disagree, 20.6% disagree, and 26.5% neutral. Most of the response's cumulative percentage fall under the neutral, disagree, or strongly disagree categories 55.9% leading to the researcher to believe not all staffs that encounters potential risk at their respective building project tend to regularly update management.

Table (7) shows that 2.9% of respondents strongly disagree with the claim that "lessons learned from past projects are being recorded and used for current projects," 20.6% of respondents agree with it, 32.4% felt it was neutral, 41.2% agreed, and 2.9% strongly agreed. The cumulative percentage of the finding seems to hold more water over the respondents agree and strongly disagree response 44.9% with 55.9% for neutral, disagree and strongly agree. These finding has led the researcher to believe lesson learned from past projects (Post Project Risk review) are not done in a convincing way to the majority of the respondents at CBE-BCM.

According to the above table (7), 50% of respondents believe risk management is considered important for achieving CBE-BCM goals, with 8.8% strongly agreeing. The remaining 20.6% of respondents felt neutral, 14.7% disagreed, and 5.9% strongly disagreed. The result shows risk management is considered important for achieving the department goal.

As previously mentioned, this section of the questioner was created to assess the CBE-BCM and the risk management process. According to the analysis shown above, the CBE-BCM does not use brainstorming sessions or historical data analysis of previous projects to identify project risks. Since these two procedures are fairly straightforward and easy to follow, failing to implement them demonstrated a lack of commitment to the risk management process because it is extremely difficult to move on to subsequent aspects of risk management practices without first identifying potential risks. Additionally, the outcome demonstrated that the post project risk review wasn't carried out adequately because the lessons from previous projects weren't recorded and applied to the current project.

Additionally, the findings have shown that discussions about project risks aren't typically held, and when they are, it's after they have become a threat to the project rather than before. The majority of CBE-BCM employees also neglect to notify management on a regular basis about potential risks. Nevertheless, the findings indicate that the staff believes risk management is crucial for achieving the department's goals. This is an excellent chance to make use of this feature and build upon it to observe the full implementation of risk management practice.

## 4.4 Significance of risks on the building projects at CBE-BCM

The purpose of this section of the questionnaire is to highlight the significance of risks that are typical of the construction of buildings. A thorough literature review that primarily focused on construction was used and it yielded twenty-five risk factors. After being reviewed by a handful of department staff, the risk factors were passed along for their rating.

***Table 8 Response to significance of risks***

| Types of risk | Risk Significance (Impact) | | | | | |
|---|---|---|---|---|---|---|
| | High (%) | Counts | Medium (%) | Counts | Low (%) | Counts |
| Lack of Scope of work definition | 26.5% | 9 | 44.1% | 15 | 29.4% | 10 |
| Delays in obtaining site access | 38.2% | 13 | 44.1% | 15 | 17.6% | 6 |
| Labor, material and equipment availability | 47.1% | 16 | 41.2% | 14 | 11.8% | 4 |
| Labor and equipment low productivity | 38.2% | 13 | 58.8% | 20 | 2.9% | 1 |
| Defective design | 47.1% | 16 | 35.3% | 12 | 17.6% | 6 |
| Changes in work | 44.1% | 15 | 44.1% | 15 | 11.8% | 4 |
| Unforeseen site conditions | 44.1% | 15 | 47.1% | 16 | 8.8% | 3 |
| Unexpected weather | 20.6% | 7 | 47.1% | 16 | 32.4% | 11 |
| Quality problems of material | 35.3% | 12 | 41.2% | 14 | 23.5% | 8 |
| Changes in governments laws and regulations | 20.6% | 7 | 50% | 17 | 29.4% | 10 |
| Labor strikes and disputes | 14.7% | 5 | 32.4% | 11 | 52.9% | 18 |
| Accidents during construction | 2.9% | 1 | 35.3% | 12 | 61.8% | 21 |
| Inflation and changes in prices | 94.1% | 32 | 2.9% | 1 | 2.9% | 1 |
| Contractors' incompetence | 64.7% | 22 | 32.4% | 11 | 2.9% | 1 |
| Change order negotiations | 32.4% | 11 | 55.9% | 19 | 11.8% | 4 |
| Lack of coordination with subcontractors | 35.3% | 12 | 55.9% | 19 | 8.8% | 3 |
| Delays in resolving disputes | 41.2% | 14 | 50% | 17 | 8.8% | 3 |
| Delayed payment to contractor | 17.6% | 6 | 17.6% | 6 | 64.7% | 22 |
| Poor quality of work | 32.4% | 11 | 38.2% | 13 | 29.4% | 10 |
| War threats and political instability | 64.7% | 22 | 32.4% | 11 | 2.9% | 1 |
| Legal disputes among different parties | 32.4% | 11 | 58.8% | 20 | 8.8% | 3 |
| Lack of consultant experience | 52.9% | 18 | 44.1% | 15 | 2.9% | 1 |
| Ambiguous clauses in the contract | 26.5% | 9 | 44.1% | 15 | 29.4% | 10 |
| Unrealistic contract clauses | 20.6% | 7 | 44.1% | 15 | 35.1% | 12 |
| Lack of coordination between all stakeholders | 35.3% | 12 | 47.1% | 16 | 17.6% | 6 |

***Source: own survey, 2023***

Seven risk factors were identified as having unambiguously high significance for the building project being undertaken based on the findings displayed in the above table (8). These are namely Labor, material and equipment availability; Defective design; Inflation and changes in prices; Contractors' incompetence; War threats and political instability and Lack of consultant experience.

While the risk factor was rated as having both high and medium significance for the projects by scoring 44.1%.

In addition, the researcher learned from the table (8) above that the following risk factors are thought to have a medium impact (significance) on the department's current projects. These risk elements include Change order negotiations; Lack of a clear definition of the scope of the work, delays in gaining site access, low labor and equipment productivity, unforeseen site conditions, unforeseen weather, material quality issues, changes in governmental laws and regulations, insufficient coordination with subcontractors, delays in dispute resolution, and legal disputes between various parties; ambiguous contract provisions; Poor quality of work; contract provisions that are unrealistic and a lack of coordination among all parties.

Last but not least, according to the above table (8), the following risk factors were thought to have little to no significance for the various projects: Labor strikes and disputes; Accidents during construction and Delayed payment to contractor.

## 4.5 Risk response and risk attitude towards risk factors at CBE-BCM

For the purpose of better understanding the operation of the department's risk management practices, this portion of the questioner was designed to learn with certainty the type of risk response strategy the department employs for a set of risk factors. Moreover, this section was also designed to know the risk attitude of the department from the respondents (staff) perspective and staffs a s individual.

To help simplify the matter and create a common ground among respondents' prior definition was give regrading risk response and risk attitudes.

### 4.5.1 Risk Response (Strategy)

*Table 9 Response regrading risk response of CBE-BCM*

| Types of risk | Risk Response | | | | | |
|---|---|---|---|---|---|---|
| | Risk Prevention (%) | Counts | Risk Mitigation (%) | Counts | Risk Retention (%) | Counts |
| Lack of Scope of work definition | 58.8% | 20 | 29.4% | 10 | 11.8% | 4 |
| Delays in obtaining site access | 47.1% | 16 | 47.1% | 16 | 5.9% | 2 |
| Labor, material and equipment availability | 35.3% | 12 | 47.1% | 16 | 17.6% | 6 |
| Labor and equipment low productivity | 29.4% | 10 | 55.9% | 19 | 14.7% | 5 |
| Defective design | 41.2% | 14 | 47.1% | 16 | 11.8% | 4 |
| Changes in work | 20.6% | 7 | 58.8% | 20 | 20.6% | 7 |
| Unforeseen site conditions | 23.5% | 8 | 41.2% | 14 | 35.3% | 12 |
| Unexpected weather | 5.9% | 2 | 35.3% | 12 | 58.8% | 20 |
| Quality problems of material | 47.1% | 16 | 44.1% | 15 | 8.8% | 3 |
| Changes in governments laws and regulations | 11.8% | 4 | 23.5% | 8 | 64.7% | 22 |
| Labor strikes and disputes | 26.5% | 9 | 38.2% | 13 | 35.3% | 12 |
| Accidents during construction | 35.3% | 12 | 26.5% | 9 | 38.2% | 13 |
| Inflation and changes in prices | 11.8% | 4 | 41.2% | 14 | 47.1% | 16 |
| Contractors' incompetence | 32.4% | 11 | 47.1% | 16 | 20.5% | 7 |
| Change order negotiations | 23.5% | 8 | 64.7% | 22 | 11.8% | 4 |
| Lack of coordination with subcontractors | 23.5% | 8 | 67.6% | 23 | 8.8% | 3 |
| Delays in resolving disputes | 35.3% | 12 | 55.9% | 19 | 8.8% | 3 |
| Delayed payment to contractor | 50% | 17 | 38.2% | 13 | 11.8% | 4 |
| Poor quality of work | 61.8% | 21 | 35.3% | 12 | 2.9% | 1 |
| War threats and political instability | 8.8% | 3 | 29.4% | 10 | 61.8% | 21 |
| Legal disputes among different parties | 26.5% | 9 | 64.7% | 22 | 8.8% | 3 |
| Lack of consultant experience | 52.9% | 18 | 41.1% | 14 | 5.9% | 2 |
| Ambiguous clauses in the contract | 50% | 17 | 44.1% | 15 | 5.9% | 2 |
| Unrealistic contract clauses | 50% | 17 | 41.2% | 14 | 8.8% | 3 |
| Lack of coordination between all stakeholders | 61.8% | 21 | 32.4% | 11 | 5.9% | 2 |

***Source: own survey, 2023***

Risk Mitigation appears to be the preferred practice of CBE-BCM based on the data tabulated above (Table 9) for the risk factor previously put in place that are very typical of a construction industry. Eleven risk factors failed in this category of risk response these are Labor, material and

equipment availability; Labor and equipment low productivity; Defective design; Changes in work; Unforeseen site conditions; Labor strikes and disputes; Contractors' incompetence; Change order negotiations; Lack of coordination with subcontractors; Delays in resolving disputes and Legal disputes among different parties. This shows CBE-BCM highly engages in mitigating to decrease the likelihood impact risks will bring on its building projects.

Risk Prevention strategy appears to be the second choice of the risk response strategy for the department whereby eight risk factors failed to these categories based the data collected presented in the above table. These risk factors are as the following Lack of Scope of work definition; Quality problems of material; Delayed payment to contractor; Poor quality of work; Lack of consultant experience; Ambiguous clauses in the contract; Unrealistic contract clauses and Lack of coordination between all stakeholders while the risk factor ‘‘Delays in obtaining site access’’ got a response rate from the respondents of an equal percentage of 47.1% for both Risk Prevention and Risk Mitigation.

The risk retention strategy of risk response seems to be the least popular among department members, and for good reason. Since this strategy is reserved for risks that cannot be transferred, cannot be prevented from occurring, or whose cost of transfer is deemed to be high (Coope, et al., 2005), it just makes sense to pay the cost of the risk rather than transfer it. Let us look at the five-risk factor that fail in these categories unexpected weather; Changes in governments laws and regulations; Accidents during construction; Inflation and changes in prices and War threats and political instability. As it can be seen the risk factors that the respondents categorized as opting to use risk mitigation rather than risk prevention or risk mitigation are certainly outside the control of the department by any stretch of the imagination.

### 4.5.2 Risk Attitude

In this section of the questioner prior description was put in place in order to ensure that the respondents understood what was being asked of them and were all in agreement regarding the definition of risk attitude. As a result, the following is how they responded:

***Table 10 Response regarding risk personal attitude & department risk attitude***

| | | Count | Column N % |
|---|---|---|---|
| [What attitude do you individually demonstrate when addressing various risks in a project?] | Risk Averse | 15 | 44.1% |
| | Risk Neutral | 12 | 35.3% |
| | Risk Seeking | 7 | 20.6% |
| [What attitude do you think the theme of risk attitude CBE-BCM as a department demonstrate when addressing various risks in a project?] | Risk Averse | 18 | 52.9% |
| | Risk Neutral | 11 | 32.4% |
| | Risk Seeking | 5 | 14.7% |

***Source: own survey, 2023***

Table (10) illustrates that although respondents have a variety of risk attitude traits, risk aversion appears to be the most prevalent, accounting for 44.1%, followed by risk neutrality at 35.3%, and risk seeking at 20.6%. This implies that conservative risk attitude (risk averse) with a preference for secure payoffs is dominant at the department. It also implies as per the respondent's own evaluation of their own risk attitude which is risk-averse the respondents majorly are practical, accepting and value common sense (Chong & Brown, 2003) rather playing dice on being proactive in managing risks.

Furthermore, table (10) also shows that majority of the respondents fells Risk Averse is the trait that best describes the trait of risk attitude of CBE-BCM at 52.9% followed by risk neutral at 32.4% and the least being risk seeking at 14.7%. This finding is as the same as the pervious fining put at table 24 stating risk averse is how the respondents characterized themselves as demonstrating towards risk and the same was found to be true for the department as well. This has led the researcher to believe risk averse is the dominant trait at the department and the individuals as well as the department is uncomfortable with uncertainty, with a low tolerance for ambiguity, and they are more likely to be tempted to seek security and resolution in the face of risk as per the definition of risk averse given in (Chong & Brown, 2003).

# Chapter Five

# 5. Summary, Conclusion and Recommendation

## 5.1 Summary of Finding

According to their responses, the majority of respondents to the question of whether CBE-BCM has a dedicated staff did not believe there was a dedicated staff. However, some chose to answer the question in a different way, which led the researcher to believe that, if an allocation had been made in the first place, it had been done so informally and might have given the other staff members a different impression. The fact that the department's staff is only 37 people strong is important to note because it makes it the least hard to get concrete information on whether some of them has been dedicated to managing risk.

CBE-BCM do not have a set standardized method or manual or set of guidelines to identify analyse, planning responses, communicating and conducting risk review or in general risk management based on the findings predicated above in this chapter. In addition, as per the response that was gathered from the respondents, the researcher has come to the conclusion that risk management within CBE-BCM is not fully understood, making it a very good indicator of where a knowledge gap exists within the body of knowledge for project management.

Risk management not being treated as a continuous process is another summary that can be drawn from the data gathered; rather, the process is subjected to various discontinuities at the risk identification and assessment stage primarily, followed by post-project risk review, risk response implementation, and risk response planning.

The findings also show that CBE-BCM doesn’t follow brain storming session and analysis of historical data of a project to identify risks. This has led the researcher to believe given that brain storming session in particular and analysis of historical data of past projects are fairly easy to implement, risk management practice has been neglected or not given a fair degree of attention. Risk identification is the start of the risk management process and not implementing it in depth will lead for the follow up risk management process to be incomplete. In addition, not using the analysis of historical data of past projects shows that post project risk review isn’t carried out

exhaustively even if they are carried out which coincides with the other response the respondents gave about record been kept from lesson learned of past projects.

CBE-BCM staff are very reluctant to regularly update their mangers for potential risks that do arise in the project according to the respondent's answer. Moreover, discussion about project risks not being held in a regular manner within the project team member is another major point that can be taken from the data. This response from the respondents also coincides with their other response that pointed out meeting regarding project risk are usually held after the risks have manifested themselves as a real threat to the project rather than holding a meeting prior in order to give attention to risks before things escalate.

So far from the data gathered the majority of the respondents believes risk management is considered important for achieving the departments' goal, while, the survey data also shows that Labor, material and equipment availability; Defective design; Inflation and changes in prices; Contractors' incompetence; War threats and political instability and Lack of consultant experience are considered to be significant in affecting the department building projects.

The main strategy for many risks factors that are affecting department projects, according to the respondents, is risk mitigation, with risk retention and risk prevention following suit which lead the researcher to believe the department mainly focuses on reducing the impact (significance) of risk that do arise rather than focusing on proactively trying to prevent some of the risk from ever happening and the risk attitude of respondents as per their own response was risk averse followed by risk neutrality and risk seeking. This also persuaded the researcher to classify the department as a conservatively oriented mind set towards risk. Last but not least of the important finding from the data shows Risk averse as being the go-to risk attitude at the department level as well.

## 5.2 Conclusion

The study's primary goal was to assess the risk management practices used in the building projects of CBE. Based on the findings described above regarding the practices implemented in the department's construction projects, the following conclusions are drawn.

There is no dedicated staff that is assigned to manage risk meaning that the majority of respondents tended to fell there is no assigned staff for the task. No well-organized method, guideline or

manuals is being implemented that recommends how to manage risks in the projects from its identification, analysis, planning of responses, communication and conducting risk reviews and also the respondents fell the department isn't collaborating with other CBE department for managing risks.

Risk management is not treated as a continuous process and it is subjected to some form discontinuity at some point in the project. The points it is usually discontinued is in it its initial stage primarily that is risk identification and analysis followed by post-project risk review, risk response implementation, and risk response planning.

Risk Management isn't fully understood by the department in general, this can be taken as gap in the staff for the proper alignment of one's knowledge to risk & its management and also the department doesn't utilize the simplest form risk identification tools that is brain storming session and analysis of historical data of a project to identify risks. This is also an indicator apart from the very response the respondents gave in the survey that the department doesn't fully conduct post project risk review that will and have inhibited the recording of lessons learned from past projects.

Frequent discussion isn't being held within the department regarding project risks and this is coupled with the discussion that are held are after the risks had manifested themselves as real threat for the projects. Staffs doesn't regularly update their managers about potential risks in the making as per the response of the respondents. This tends to show there is communication gap with in the department regarding updating their superiors about potential risks.

Labor, material and equipment availability; Defective design; Inflation and changes in prices; Contractors' incompetence; War threats and political instability and Lack of consultant experience are considered by the respondents to be a risk factor that is highly affecting the projects at hands.

Among the risk strategies to respond to a risk, risk mitigation appears to be the preferred or convenient form of response for the respondents of the department to the various risk factor that are typical of the construction industry. On the other hand, among the risk attitudes, risk averse seems to be the go-to for the majority of the respondents as well as the trait of the department which suggests that the department is heavily invested in taking a conservative approach to risk management.

## 5.3 Recommendation

In view of the above findings the following recommendation are given:

Assigning a dedicated staff within the department to manage risks. If not possible to do so, assigning members of the existing staff to take the responsibility of taking the lead in initiating and carrying out the risk management aspect of project management for the building projects the department is tasked to manage. The assigning of the staffs should be made official in order to make sure everyone is on the same page.

Developing a well-structured method, guideline and manual that is used for identifying, assessing, responding, communicating and conducting risk reviews for past projects is a must; if it is not possible to develop, borrowing from another institution or from other departments within CBE. Since CBE is a renowned bank and it have its own risk and compliance department, coinciding with this department to develop well taught out plan and guideline for risk management is possible.

Treating or carrying out risk management process in its entirety by rooting out the causes that is causing its discontinuity at various stage of the project. In addition, carrying out a training session for the department as a whole can also be helpful to increase the understanding of risk management to help the staff in helping and being a crucial part of risk management process

Holding a frequent discussion regarding project risk that is inclusive of all relevant staffs as wells is one way to minimize the gap found by this study. Moreover, holding the discussions prior to the manifestation of risk to a real problem not just holding a meeting after the risks have rooted themselves as a big problem for the project at hand. In the meantime, establishing a formal communication and encouraging staffs to update managers and all relevant stakeholders regarding potential risks is also a good solution to remedy the gap found by this study regarding risk communication.

For risk factor that are identified as having a high impact (significance) and are outside the control of the department; what is advised is coming up with mitigation and retention plan like allowing some form of price adjustment in the contract to account to ever increasing market price hike for construction materials to create a breathing space for contractors to be able to do their job as well as collaborating with construction materials to ensure stagnant supply of materials in an agreed for long period of time can also be counted as an option to reduce the stress created on the contractor

as a result of market price hike. Getting extensive insurance coverage that will cover predicaments arising from war or political instability to mitigate financial and other likely option that can be adopted establishing monitoring & early warning system to keep track of geopolitical situation in order to get an advance in a timely decision. While, making sure to hire the best designing consultant and creating a list of strict criteria for contractors to weed out incompetent contractors can be used as a risk mitigation strategy for risk factors like defective design and contractor incompetence can be controlled.

Last but not least, the researcher suggests that any future studies that are conducted on this front take into account getting the different perspectives of the major stakeholders like contractors, consultants, different government & municipality office, and different construction material manufacturer as a result of the fact that this study has only focused on one major stakeholder in the construction of buildings for Commercial Bank of Ethiopia across various regions of Ethiopia.

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# Annex

**ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE**

**GRADUATE PROGRAM IN PROJECT MANAGEMENT**

**Title of the Project Paper "Assessment of Risk Management Practice: The case of Commercial Bank of Ethiopia's Building Construction Department"**

Dear Respondents,

This survey is designed to assess the CBE-BCM department's practice of risk management for its building project. Your participation in this study is greatly appreciated, and all information you provide will be used exclusively for academic purposes.

**Part 1**

**General Information on the respondent**

| **Questions** | Answer of Respondents |
|---|---|
| **Age** | 20 – 30 ☐ |
| | 31 – 40 ☐ |
| | 41 – 50 ☐ |
| | 51 – 60 ☐ |
| | 60 – Above ☐ |
| **Gender** | Female ☐ |
| | Male ☐ |
| **Education level** | Undergraduate degree ☐ |
| | Postgraduate degree ☐ |
| | Other (Specify)---------- |
| **Total work Experience** | 1 – 3 ☐ |
| | 4 – 5 ☐ |
| | 6 – 10 ☐ |
| | 11 – 15 ☐ |
| | 16 - Above ☐ |
| **Total work Experience in CBE -BCM** | 1 – 3 ☐ |
| | 4 – 5 ☐ |
| | 6 – 10 ☐ |
| | 11 – 15 ☐ |
| | 16 - Above ☐ |
| | |
| **Position at CBE-BCM** | Junior Engineer |
| | Associate Engineer |
| | Senior Enginerr |
| | Project Manager |
| | Manager |
| | Director |
| | Assistan Vice President |

**Part 2**

**General questions on risk management practices of CBE-BCM**

Wherever you believe it is appropriate, please indicate your opinion by selecting the appropriate response on the five-point scale questions and by checking the box next to the letter of your choice on the multiple-choice questions.: Strongly Disagree (SD) = 1, Disagree(D) = 2, Neutral(N)= 3, Agree(A) = 4 and Strongly Agree (SA) = 5

| No | Questions | SD | D | N | A | SA |
|---|---|---|---|---|---|---|
| 1 | There is a dedicated staff within CBE-BCM that deals with managing risk. | | | | | |
| 2 | There is a specified or standardized method to risk management that is being employed by CBE-BCM. | | | | | |
| 3 | CBE-BCM coincide/work with other CBE departments to identify and manage risks. | | | | | |
| 4 | Identifying, analyzing, planning responses, communicating, and conducting risk reviews follows written procedures, guidelines, or manuals at CBE-BCM. | | | | | |
| 5 | Risk management is completely understood in the department (CBE-BCM). | | | | | |
| 6 | Risk management process is performed from identification of risk, implementation of response to project risk review phase or the process without the process being stopped or disrupted at some point. | | | | | |

**If your answer is Disagree or Strongly Disagree for question 6 please indicate where the risk management process is discontinued.**

| Risk Management Process |
|---|
| Risk Identification ☐ |
| Risk Assessment ☐ |
| Risk Response Planning ☐ |
| Risk Response Implementation ☐ |
| Post Project Risk Review ☐ |

**Part 3**

**Assessing the risk management process at CBE-BCM as it is; what does it look like?**

Wherever you believe it is appropriate, please indicate your opinion by selecting the appropriate number on the five-point scale questions and by checking the box next to the letter of your choice on the multiple-choice questions.: Strongly Disagree (SD) = 1, Disagree(D) = 2, Neutral(N)= 3, Agree(A) = 4 and Strongly Agree (SA) = 5

| No | Question | SD | D | N | A | SA |
|---|---|---|---|---|---|---|
| 7 | CBE-BCM department uses Brain-storming sessions to identify risk. | | | | | |
| 8 | CBE-BCM department uses Analysis of historical data of projects to identify risk. | | | | | |
| 9 | Discussions are held regarding project risks among project teams regularly. | | | | | |
| 10 | Risk discussion often occurs when the risk is currently a problem for the project in the present rather than discussing the issue prior before the risk manifests itself in to a problem. | | | | | |
| 11 | CBE-BCM staff frequently alert management or other stakeholders to potential risks. | | | | | |
| 12 | Lesson learned from past projects is being recorded and used for current projects in regards to managing risks. | | | | | |
| 13 | Risk management is considered important in achieving the CBE-BCM objectives. | | | | | |

**Part 4**

**Significance (Impact) of Risks (High, Medium and low)**

Wherever you believe it is appropriate, please indicate your opinion by selecting the appropriate risk significance on the multiple choice given below: High= 3, Medium= 2 and Low= 3, this section of the questioner is partial adopted from (Euripides, 2008).

| Types of risk | Risk Significance (Impact) | | |
|---|---|---|---|
| | High | Medium | Low |
| Lack of Scope of work definition | | | |
| Delays in obtaining site access | | | |
| Labor, material and equipment availability | | | |
| Labor and equipment low productivity | | | |
| Defective design | | | |
| Changes in work | | | |
| Unforeseen site conditions | | | |
| Unexpected weather | | | |
| Quality problems of material | | | |
| Changes in governments laws and regulations | | | |
| Labor strikes and disputes | | | |
| Accidents during construction | | | |
| Inflation and changes in prices | | | |
| Contractors' incompetence | | | |
| Change order negotiations | | | |
| Lack of coordination with subcontractors | | | |
| Delays in resolving disputes | | | |
| Delayed payment to contractor | | | |
| Poor quality of work | | | |
| War threats and political instability | | | |
| Legal disputes among different parties | | | |
| Lack of consultant experience | | | |
| Ambiguous clauses in the contract | | | |
| Unrealistic contract clauses | | | |
| Lack of coordination between all stakeholders | | | |

**Part 5**

**Risk Response and Risk Attitude**

Based on the following definition terms of risk response (Risk Prevention, Risk Mitigation and Risk Retention) mark a maximum of one appropriate risk response employed by CBE-BCM for each type of risk listed below

**Risk Prevention (RP)**: aim to eliminate sources of danger or significantly lower their likelihood of happening or it is a risk-response strategy that calls for taking measures to prevent risks from occurring.

***Risk Mitigation (RM):*** goal of risk mitigation is to reduce the effects of risks on a project. It can be done by contingency planning, separation or relocation of an activity and resources, quality assurance, crisis management and disaster recovery plans or risk sharing (insurance/bond).

***Risk Retention (RR);*** there are instances when risks cannot be avoided or transferred because doing so would be expensive. Thus, an organization must or might choose to retain the risks in these situations

| Types of risk | Risk Response | | |
|---|---|---|---|
| | Risk Prevention | Risk Mitigation | Risk Retention |
| Lack of Scope of work definition | | | |
| Delays in obtaining site access | | | |
| Labor, material and equipment availability | | | |
| Labor and equipment low productivity | | | |
| Defective design | | | |
| Changes in work | | | |
| Unforeseen site conditions | | | |
| Unexpected weather | | | |
| Quality problems of material | | | |
| Changes in governments laws and regulations | | | |
| Labor strikes and disputes | | | |
| Accidents during construction | | | |
| Inflation and changes in prices | | | |
| Contractors' incompetence | | | |
| Change order negotiations | | | |
| Lack of coordination with subcontractors | | | |
| Delays in resolving disputes | | | |
| Delayed payment to contractor | | | |
| Poor quality of work | | | |
| War threats and political instability | | | |
| Legal disputes among different parties | | | |
| Lack of consultant experience | | | |
| Ambiguous clauses in the contract | | | |
| Unrealistic contract clauses | | | |
| Lack of coordination between all stakeholders | | | |

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**Based on the following definition terms given below on risk attitude (Risk Averse, Risk Seeking, Risk Neutral):** Please mark your opinion by selecting the appropriate answer and by checking the box next to the letter of your choice on the multiple-choice questions

**Risk Attitude (RA):** a chosen state of mind with regard to those risks that could have a positive or negative effect on objectives

**Risk Averse (RAV):** an attitude that a person or group will try to avoid the risk, a low tolerance for ambiguity, a low tolerance for uncertainty, and a tendency to seek security and finality when faced with risk.

**Risk Seeking (RS):** It goes in the opposite direction to the Risk Averse. It is a liberal risk attitude with a preference for speculative payoffs.

**Risk Neutral (RN):** Individuals or groups who are risk-neutral are neither risk-averse nor risk-seeking; instead, they look for techniques and plans with high potential rewards in the future. They consider the long term when dealing with risks and opportunities, and they only act when doing so is likely to result in major gain.

| No | Question | Risk Averse | Risk Seeking | Risk Neutral |
|---|---|---|---|---|
| 14 | What attitude do you individually demonstrate when addressing various risks in a project? | | | |
| 15 | What attitude do you think the theme of risk attitude CBE-BCM as a department demonstrate when addressing various risks in a project? | | | |

**The End**

**---------Thank You again for participation in this study-------**

**Nahom Tesfaye**