



**Department of Project Management
Post Graduate Program**

**Assessing Risk Management in Construction Companies: Case Study of Real Estate
Companies in Ethiopia**

A Thesis Submitted in Partial Fulfilment of the Requirements of the Master of Art Degree in
Project Management

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**Assessing Risk Management in Construction Companies: case study of real estate
companies in Ethiopia**

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DECLARATION

I declare that this research project “*Assessing Risk Management in Construction Companies: Case study of Real Estate Companies in Ethiopia*” is my original work and has never been submitted to any other university for assessment or award of a degree, and that all sources of materials used for the study have been dully acknowledged.

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Acronyms

ACEC	American Counsel of Engineering Companies
CII	Construction Industry Institute
COSO	Committee of Sponsoring Organizations of the Treadway Commission
IRM	Institute of Risk Management
MoUHC	Ministry of Urban Development, Housing and Construction
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PPP	Public/private partnerships
SPSS	Statistical Package for the Social Sciences

ABSTRACT

This research is designed to assess the practice of Risk Management in Construction Companies: case study of real estate companies in Ethiopia. It's well known that construction industries experience risks throughout their project life cycle and they need to be able to manage those risks effectively and efficiently as possible through the practice of risk management process. Therefore this research aims at studying if a gap exists between the theoretical risk management process and the current risk management practice of the real estate projects. This is achieved by investigating two real estates: Noah real estate and at Elilta real estate. In this research descriptive and explanatory research design were used to describe and explain the research issue. Accordingly purposive (judgmental) sampling have been applied to select key informants. Data is collected both from primary and secondary sources. Primary data is collected through questionnaires and the collected data is analysed by using SPSS version 20, the analysed data result found from the SPSS software are provided through tables, percentages and charts. And the secondary data is collected from internet, magazine, and books. The research findings shows that even though real estate projects are very risky industry risk management is not being implemented properly, risk management practice exists but it's not that much properly practiced in the projects. And also not much is being done to develop project team members' awareness and perception towards risk and its management in the real estate projects. It is recommended that the real estate projects should upgrade their risk management practice by pre planning risks, identifying risks at the very early stage of the project, and by developing project team members' awareness towards risk and its management by conducting different training programs and experience sharing.

Key words: risk; construction; real-estate, risk management

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Construction in general is a risky industry compared to other industries it is subjected to complicated process, uncomfortable environment, and financial intensity. And there is no other industry that requires proper application of business practice much as construction industry.

Real estate is one of the classifications of housing development which are participated to solve the severe housing problem in Addis Ababa. It has become a continuously evolving industry in Ethiopia. As major towns in the country continue experiencing rural-urban migration which is driving growth in demand for both residential and commercial property, real estate and property developers are striving to satisfy this demand. Since most of the projects undertaken under this industry are construction projects, they are very risky (Ehsan et al. 2010, cited by Haddush 2016). Therefore, risk management is crucial, not only to go with the planned cost and time frame, but also to profit out of that, to gain a competitive advantage.

There are different risks and challenges that real estates in Ethiopia face. Risks in real estate construction projects are the chance of occurrences of events which affect the objectives and hence it will be lost the productivity within the project life cycle. According to, Vaughan, e. (1997), risk is a condition of the real work in which there is an exposure to adversity. More specifically, risk is a condition in which there is possibility of an adverse deviation from a desired outcome that is expected or hoped for. In the same way, Al-bahar, j. (1988), also tried to define risk as the exposure to the “chance of occurrences of events adversely or favourably affecting project objective as a consequence of uncertainty” therefore risk is a potential event that, if it occurred would have a negative impact on the project time, cost or quality

Risk management has become increasingly important for any commercial organizations operating in today’s environment (Groton, Smith, & Risk Allocation Sub-Committee, 2010; Mead, 2007; Wiegelmann, 2012) where risks are inherent (Mead, 2007). It is important that risks are identified, understood, anticipated, assessed, analysed, and to learn to manage risks (Groton et al., 2010; Wiegelmann, 2012). “Failure to accurately identify and make appropriate allowance for risks being assumed under complex commercial and contractual arrangements can have terrible consequences.” (Mead, 2007) As part of risk management process, risk

analysis establishes the probabilities of occurrence of adverse events and measures of the potential impact of risk event outcomes (Edwards & Bowen, 1998). Risks which exist in real estate have impacts and it's important to able manage and minimize their impact on project objectives and their business as a whole.

It's a well-known fact that project management would be unimaginable without risk management; whether it's to predict costs or estimate resource requirements and task duration, it is impossible to be perfect because the future is uncertain and things can go the unexpected way. Failing to invest in risk management would lead to a much costly investment at their occurrence; and as project risk is integral to business planning, project selection, planning and control, it should be given the needed attention during the whole strategic, operational and tactical business planning especially in planning strategy and in implementation planning (Lewis 2011). However, we can still witness projects that fail to be completed as planned because of lack of formal/structured risk management practices.

Risk management is the key to any project's success, understanding and managing project risks enables project teams and members to effectively carry out the project to meet the required expectation and to deliver the objective. The motive of this research is to identify major risk factor and exam the project risk management processes and techniques that are currently practiced by real estate projects in Ethiopia and recommendation is provided on major improvement areas for a better risk management practice.

1.2 Statement of the Problem

Risk management is a central issue in the planning and management of any project. In project management the most important skill that a project manager can possess is risk management. Effective risk management requires that the project manager be proactive and demonstrate a willingness to develop contingency plans, actively monitor the project, and be willing to respond quickly when a serious risk event occurs Kerzner, H. (2006).

Being a project oriented organization, real estate companies experience more risks and need to manage them as effectively and efficiently as possible. As an organization entrusted by its customers to deliver the product upon an agreed time, cost and quality standards, real estate companies are expected to control production delays, escalating construction costs and quality defects to build client confidence and satisfy their customers. Unfortunately, most of the real estate companies appear to be on the far side from this expectation. The performance of the

industry, in terms of efficiency and effectiveness, is not as such encouraging with substantial number of projects suffering from delays, cost overruns and quality problems. This was mostly attributed to a number of constraints and challenges; shortage of skilled manpower, inefficient project management, lack of technology transfer, absence of conducive environment that enhances competition and lack of efficient input supply chain were among the challenges constraining growth of the industry (MoUCH 2014; (Haddush, 2016)

Most of these challenges and constraints are, however, risks that can either be planned for or managed in advance; and failing to be prepared for those risks could compromise the successful completion of the project and worse lead to crisis management which is not only costly but also less effective. The overall result would be a cost increase, a schedule slippage, or some other catastrophic change (Wysocki, 2014).

In Ethiopia, considering the significance of risk management, some thesis papers are conducted (Hana, 2016). Tsion(2015) studied risk management practices of Ethiopian Commercial Banks and found that an appropriate environment has been established for managing risk, possible risks are identified, prioritized and planned for in advance, there are tools, techniques, guidelines and procedures to manage risks and that there is awareness about risk management among the Banks' staffs. However, risk management studies conducted on projects entail a different story. (Haddush, 2016) Found that formal risk management is barely implemented and practiced in projects, specifically in construction projects. Absence of comprehensive identification of the various risks and evaluation of their respective impacts on project objectives is causing a delay and cost overrun. Moreover, they recommended advance risk planning and preparations to properly and efficiently respond to when such risks occur.

The above researches have provided an insight into the risk management practices of different organizations and projects in Ethiopia but most of them focused on the negative side of risks and the downside impacts on business objectives. In reality, however, a risk, if it occurs, can result in either positive or negative outcomes (Wysocki 2014). Moreover, most of the studies on risk management are conducted on banks and so little is investigated about risk management practices of projects; even among those studies that took place on projects, it is hard to find researches conducted around the real estate industry.

Therefore, it's important to have a better understanding of risks and how to manage them in order to be able to deliver project outputs successfully. Moreover, projects need to identify positive risks and opportunities, in addition to negative risks and threats. In line with these, this research aims at studying if there exists a gap between the theoretical risk management process and the current risk management practice of real estate projects.

1.3 Research Questions

The following research questions have been developed to address the purpose and objectives of the study by focusing on the selected real estate projects that the study will cover.

1. What is project risk management practice in real estate projects?
2. What is the level of awareness and perception to risk and its management among real estate projects?

1.4 Objectives of the Study

In investigating risk management practices of real estate projects, the following two objectives have been established.

- To examine risk management practices of selected real estate projects.
- To investigate the level of awareness and perception to risk and its management among real estate projects.

1.5 Significance of the Study

At the end the findings and recommendations of this study can be of a great importance to different project stakeholders, project managers and project teams undertaking similar projects. At completion, the study shows how matured and prepared the projects under study are in terms of risk management. The study also informs real estate project stakeholders how risk management is really being practiced at their projects, about their strengths and weaknesses in practicing the risk management process. It also gives a general insight to the academic & professional society about the different aspects of risk management and how it is being practiced among the real estate industry. Last but not least, this study can serve as a reference for further studies.

1.6 Scope of the Study

When it comes to the scope of this study is bounded to selected real estate projects on the subject of practice of risk management in the real estate industry; which may restrict

generalization of the findings to all real estate projects. This study only focused on one of the nine Project management Knowledge areas presented in the PMBOK (Project Management Body of Knowledge) guide (2008) which is risk management; the study specifically investigates how risk management is being practiced among selected real estate projects by collecting data at a point in time and won't analyse trends overtime.

1.8 Organization of the Study

This research paper is have five chapters. In the first chapter the researcher discusses the introduction part of the study which includes background information of the research topic, the research problem, the objective of the research, significances or importance of the study, the research scope and its limitation. When we came to chapter two the researcher presented the review of related literatures by organizing them in to three sub sections. This is theoretical literature, empirical literature and gap of the research. Chapter three starts by describing study area. After this research design and research method is presented. Next to this sampling technique and sampling method with data source and collection method have been presented. When we came to in chapter four, the collected data through questioners are analysed and discussed. Finally, on chapter five summary of findings of the study is shown followed by conclusions and recommendations of this research

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical literature review

2.1.1 Risk and Risk Management

2.1.1.1 Risk

Risk has been defined differently in reviewed literatures. Most definitions of risk have focused on the negative side of risks such as losses or damages which is the downside of it (Schieg, 2006). This definition which signifies the negative aspect has been connoted as a traditional view of risk (Hillson, 2002; Khedekar&Dhawale, 2015; P. Simon, and, & Newland, 1997; Teneyuca, 2001; Wiegelmann, 2012; Zhang, Zhang, &Gao, 2006).

Some literatures encompassed both the possibility of downside/loss and upside risk /gain, i.e. uncertainties that could have a beneficial effect on achieving objectives (A. Faridi& El-Sayegh, 2006; El, El Nawawy, & Abdel-Alim, 2015; Hillson, 2002; Lam, Wang, Lee, & Tsang, 2007; PMI, 2013; Renuka, Umarani, & Kamal, 2014; Stephen Ward & Chapman, 2003; Wiegelmann, 2012; Williams, 1995). Schieg (2006) presented a theoretical meaning of risk, as a positive or negative deviation of a variable from its expected value. Fisk and Reynolds (2011) put a similar meaning of risk.

Risk and uncertainty might be found being used interchangeable in different literatures. However, PMBOK describes risk through the notion of uncertainty; risk has its origins in the uncertainty present in all projects. “Project risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives such as scope, schedule, cost, and quality” (PMI 2013: 310) which shows these two phenomena are not synonymous.

According to Al-Bahar (1990), uncertainty represents the probability that an event occurs which entails how likely an event is to occur, i.e., the chance of the event occurring. Renuka et al. (2014) Alsalman (2012) and Al-Bahar (1990) defined risk as exposure to the consequences of uncertainty. Similarly, Khedekar and Dhawale (2015) defined risk as exposure to the possibility loss or gain, as a consequence of the uncertainties associated with pursuing a particular course of action. Olsson (2007) and Hillson (2004) put risk as a measurable

uncertainty and uncertainty as an immeasurable risk, which implies that, when measurable, an uncertainty is to be considered as risk. Byrne (1996) defines risk as a term appropriate for situations where it is possible to define probability distributions for probable outcomes and uncertainty as a term that better suits situations where such probability distributions cannot be made. This definition clearly indicates the distinction between risk and uncertainty, stating risk is measurable and quantifiable, and that uncertainty is not measurable and cannot be quantified (Alsalman, 2012). These definitions highlight the distinction between the two terms which is related to its quantification (KarimiAzari, Mousavi, Mousavi, & Hosseini, 2011; Wiegelmann, 2012).

2.1.1.2 Risk Management

Risk management is defined in different ways by different authors. Edwards and Bowen (1998) and El et al. (2015) defined risk management as a systematic approach to dealing with risk. According to T.Uher (2003) risk management is “a systematic way of looking at areas of risk and consciously determining how each should be treated. It is a management tool that aims at identifying sources of risk and uncertainty, determining their impact, and developing appropriate management responses.” Risk management is also defined as a scientific approach of identifying, anticipating and minimizing the possible adverse impacts on the projects (Koirala, 2014).

Risk management is also presented as a process in reviewed literature. To name a few, Koirala(2014) defined risk management as a set of processes concerned with conducting risk management planning, risk identification, risk analysis, response planning, and monitoring and control on a project. Thompson and Perry (1992) and El et al. (2015) presented risk management as a systematic process of identifying, analyzing, and responding to project risk and it includes maximizing the probability and consequences of positive attributes and minimizing the probability and consequences of attributes adverse to project objectives.

A risk management process typically comprises establishment of context, risk identification, risk analysis, risk evaluation and risk response (Berkeley, Humphreys, & Thomas, 1991; Edwards & Bowen, 1998; Flanagan & Norman, 1993; Lam et al., 2007; Lyons, 2003; Mead, 2007; Perry & Hayes, 1985; Uff&Odams, 1995; Wiegelmann, 2012; Wysocki, 2011). It establishes a strategy to avoid losses and use available chances or rather chances potentially arising from risks and influence risk decision-making (Baloi& Price, 2003; Edwards & Bowen, 1998; Flanagan & Norman, 1993; Raftery, 1994; Schieg, 2006). This means recognizing

potential risks and circumventing a threat by averting, evading or reducing their negative effects (Mead, 2007; Schieg, 2006) and realizing potential opportunities (Mead,2007).Zavadskas, Turskis, and Tamošaitiene (2010) share a similar view that risk management is a process of defining sources of uncertainty (risk identification), estimating the consequences of uncertain events/conditions (risk analysis), and generating response strategies in the light of expected outcomes and finally, based on the feedback received on actual outcomes and risks emerged, carrying out identification, analysis and response generation steps repetitively throughout the life cycle of an object to ensure that the project objectives are met.

Each PMI knowledge area in itself contains some or all of the project management processes. For example, project risk management includes (PMI, 2008):

- Risk management planning; Risk management planning is a process of defining how to conduct risk management activities for a project
- Risk identification; Risk identification attempts to identify the source and type of risks including the recognition of potential risk event conditions in the construction project and the clarification of risk responsibilities (Wang & Chou, 2003).
- Risk analysis; Risk analysis is the systematic assessment of decision variables which are subject to risk and uncertainty.
- Risk response planning; Risk can be transferred, accepted, managed, minimized, or shared, but cannot be ignored (Latham, 1994). Risk response is a process of developing options an action to enhance opportunities and to reduce threats to project objectives (PMI, 2013).
- Risk monitoring and control. Risk monitoring is a process examining to what extent operation adheres to the planned standards across all units and functions.

2.1.2 Risk Allocation

Risk exists wherever the future is unknown (Fisk & Reynolds, 2011). The nature and extent of risks may change, new risks may emerge and existing risks may change in importance and any such changes may also aggravate or ease some other risks as a project progresses. (M. Motiar&M.M,2002).Managing risks systematically and proactively is important (Kumaraswamy, Dulaimi, Love, &Motair, 2001).

Risks play a significant role in business decision making (Taroun, 2014; Wiguna, Scott, &Khosrowshahi, 2005). Risks should be identified and a way to determine how to deal with

those risks and the changing environment of risk by planning the risk response should be planned (Mubarak, 2015). Risk allocation is a major process of the risk response (Alsalman, 2012). Risk allocation always occurs in any situation where more than one party is responsible for the implementation of a project (ACEC, 2005; Zaghoul & Hartman, 2003). Risk allocation is a process of identifying risks and determining how they fair share among project stakeholders (Kia & Tohidi, 2002). It is the decision of which party or parties should bear the consequences of risks, if they occur in the project (Uff & Odams, 1995; Wibowo & Mohamed, 2008). The risk allocation process can be performed qualitatively and quantitatively (Rouhparvar, Zadeh, & Nasirzadeh, 2014).

Risk allocation is an important issue (El-Sayegh, 2008; Zaghoul & Hartman, 2003). It can affect the success of the project by impacting project performance and the total construction costs (Kia & Tohidi, 2002; Lam et al., 2007; Levitt, Logcher, & Ashley, 1980; Zaghoul & Hartman, 2003). A fair risk allocation is essential for the successful completion of a project (Mubarak, 2015; Rouboutsos & Anagnostopoulos, 2008; Zayed, Amer, & Pan, 2008). It is the goal of risk management to minimize the total cost of risk to a project, not necessarily the costs to each contracting party separately (Alsalman, 2012; CII, 1993). Companies can expect that their projects will have fewer claims, reduced costs and timely completion by advocating fair risk allocation (Groton, Smith, & Risk Allocation Sub-Committee, 2010; Kia & Tohidi, 2002; Rahiman, 2006; Zanelidin, 2006).

Risk allocation is done in three approaches; by retaining, transferring, and/or sharing of risks (Alsalman, 2012). Mostly, risk allocation is conducted through contract in construction industry (Alsalman, 2012; F Nasirzadeh, Rouhparvar, Zadeh, & Rezaie, 2015). The fundamental function of contract conditions would be to allocate obligations to each of the contracting parties (T. E. Uher & Davenport, 2009) with contractual provisions and clauses (Alsalman, 2012). Common contractual clauses used to distribute risk include indemnification provisions, warranties, schedule-related requirements (including the imposition of liquidated damages), and the ability to withhold payment (DLAPiper, 2015).

Willingness of a party and awareness to bear the risk will affect its response to risk (SC Ward, Chapman, & Curtis, 1991). However, the decision itself depends on the level of information regarding future situation and on the risk appetite of the company since it is a key factor in evaluating strategic options. According to COSO (2009), risk appetite is the degree of

uncertainty an enterprise is willing to accept. Risk appetite of an organization varies with its strategy as well as evolving conditions in its industry and markets (Wiegelmann, 2012).

2.1.3 Risks in Real Estate Projects

Risk management has become increasingly important for any commercial organizations operating in today's environment (Groton et al., 2010; Mead, 2007; Wiegelmann, 2012) where risks are inherent (Mead, 2007). It is important that risks identified, understood, anticipated, assessed, analyzed, and to learn to manage risks (Groton et al., 2010; Wiegelmann, 2012). "Failure to accurately identify and make appropriate allowance for risks being assumed under complex commercial and contractual arrangements can have terrible consequences" (Mead, 2007).

The construction business is risky like any other business (El-Sayegh, 2008; Taroun, 2014). Risks are inherent in all construction projects (Dey&Ogunlana, 2004; El-Sayegh, 2008; M. Motiar& M.M, 2002) because the construction industry is one of the most dynamic, risky, challenging, and rewarding fields (Kangari, 1995; Sterman, 1992; TE Uher&Loosemore, 2004; Zeng, An, & Smith, 2007). Flanagan and Norman (1993) argued that the construction industry is subject to more risks and uncertainties than any other industry. Dey and Ogunlana (2004) share the same opinion. There is no risk free construction project (Lam et al., 2007). Construction projects are always unique (Oyegoke, 2006; Pheng&Chuan, 2006) and are built only once (Zavadskas et al., 2010). In addition, construction involves numerous stakeholders and long production durations (Zou, Zhang, & Wang, 2007) which increase the susceptibility for uncertainty.

The outcomes of all construction projects can potentially be affected adversely by a large number of risks (Loosemore& McCarthy, 2008). The construction process is complex and characterized by a number of uncertainties which make many construction projects fail to achieve their time, cost and quality goals (Baloi& Price, 2003; Banaitiene&Banaitis, 2012; Mohammad & Jamal, 1991; Zavadskas et al., 2010; Zeng et al., 2007; Zhang et al., 2006). Project risks may even cause construction project a total failure (Banaitiene&Banaitis, 2012).

Risks and uncertainty are inevitable in the construction industry. Incorporating risk management concepts into construction practice is important for managing uncertainty and risk (KarimiAzari et al., 2011), for the enhancement the performance of a project (FarnadNasirzadeh, Afshar, &Khanzadi, 2008) and for the successful delivery of a project

(Zou, Zhang, & Wang, 2006). However the construction industry is not with a good reputation of coping with risk. Many projects fail to meet deadlines, cost targets, and specifications (Dey&Ogunlana, 2004).

The real estate development business shares the risky nature of construction as well. Risks and uncertainties are associated with all projects in real estate development like any other commercial activity. As mentioned earlier, these risks and uncertainties can strongly influence all related progresses at all stages of the entire lifecycle of properties (Chen &Khumpaisal, 2009).

Wiegelmann (2012) says as best applied to the real estate development industry, the definition of risk is but not limited to an element of uncertainty aligned with expectations and objectives of a real estate development organization within a specified time horizon and budget differentiating between negative (threat) and positive (opportunity) aspects of risk. Yet, it is the downside of risk this research is concerned with.

2.1.4 Overview of the Real Estate Industry in Ethiopia

Real state in Ethiopia is one of the most profitable, high in demand sectors. The sector majorly resides in Addis Ababa, one of the top fastest growing cities in Africa, which makes the city the right destination for real estate companies in Ethiopia to invest in to build luxury homes.

Real estate sector has been one of the fastest growing sectors of the Ethiopian economy. The sector has gone through several phases from its emergence in 1990's to where it has gotten now.

According to data from Ethiopian Investment Commission, since 2015, close to 117 companies took an investment license to invest on 56 different real estate projects. From 117, 99 percent of them are owned by Ethiopians or in joint venture with foreign investors. Some were still fully owned by foreigners.

The primary destination of the real estate industry in Ethiopia, of course, is Addis Ababa. Out of the existing 56 real estate projects to date, 43 are located in Addis Ababa. The fuel for real estate in Addis Ababa has been and will always be the enormous housing demand which seems to be ever growing.

The rapidly changing real estate industry in Addis Ababa is one of the more visible aspects of the extended period of growth recently experienced in Ethiopia. In the years 1975- 1991, the Socialist government of Ethiopia (Derg) had been directly involved in the supply of real estates and set cooperatives housing delivery system. The government used to provide land, building materials, and housing finance on a subsidized manner. And, it issued real estate proclamation number 47/1974, by which the government nationalized all urban lands and extra houses, hence the role of the private sector in real estate development was limited. After the overthrow of the socialist regime in 1991, the current government has introduced a more of market oriented approach that rehabilitates the private sector's role in real estate development. This liberalization of the real estate sector, in addition to a growing economy, favorable demographics and increasing political stability, clearly contributed to the establishment and expansion of several real estate developers in the country (Zerayehu and Kagneu 2015).

In Ethiopia, the urban population has grown at an average 3.8% per annum since 2005 and is expected to triple from 15.2 million in 2012 to 42.3 million by 2037 (African economic outlook 2016). This could pose a significant development challenge if not addressed. Since 2004/05, the government has focused more on developing housing, upgrading slums and providing infrastructure for this growing population. However, without the help from private organizations, the government cannot address all this growing population in providing houses. Though unaffordable for low income society, residential real estate provides housing for middle and higher income families. Currently, there is a need for real estate developers to involve actively in contributing their share in addressing the high demands for residential houses and commercial buildings.

Residential homes and neighborhoods built by real estate developers are now becoming increasingly common ever since the first large-scale development was initiated by the pioneer in this sector, namely Ayat Real Estate. At present over ten real estate construction companies operate in Addis Ababa. The dominant real estate developers for residential villa homes include: Ayat Real Estate, Sunshine Real Estate, Hassenias Real Estate, Habitat New Flower Homes, Ropack International, Ambassador Real Estate, Tracon Real Estate, Gift Real Estate, Enyi Real Estate, Country Club Developers, Akakas Real Estate, Boran Real Estate, Flintstones Homes, and Zenebe Frew Real Estate. Many more are also operational, though with more limited activities. For apartment developments, some of the most active developers include Ayat, Sunshine, Access Real Estate, and Flintstones Homes. The developments of these private

developers range from very luxurious, high-end communities that sell multi-million Birr homes (e.g. Country Club Developers and Akakas Real Estate) to sellers of more moderately priced homes (Access capital research 2010).

A real estate market can provide a lot of social and economic yields or benefits to a country if it is operated efficiently and effectively. But in order to achieve this efficiency and effectiveness, such companies should first identify possible challenges and opportunities and plan accordingly.

One of the challenges faced by every real estate organization is the risks of producing and selling the buildings. The real estate industry, usually populated by a project-oriented organization, undertakes projects that are unique, complex and temporary with a limited resource and a specified quality standard. Each real estate project is unique in that something is always different each time the activities of a project are repeated and temporary in that every real estate projects have a specified beginning and completion date. All this factors could make the real estate industry y risky in which unless managed effectively, could result in either in a failure or a project completion with extended time from less than five years more than 10 years, budget over run or poor quality. With the obvious need for risk management in real estate projects, this study aims at assessing the risk management practices of three real estate organizations' projects that reside in Addis Ababa city.

2.1.5 The Importance of Risk Management in Real Estate Projects

According to (Haddush, 2016), implementing a systematic risk management process has both long-term and short-term benefits. Each element of the risk management effort, right from identifying and assessing risks to coming up with mitigation strategies, has its own benefits. Risk management as a system results in a number of direct and indirect benefits to the organizations which are not easily quantifiable.

Risk management information gathered through the process of risk identification, analysis and response decisions enables informed decision with respect to strategic and operational choices of real estate developers and supports efficient and effective allocation of scarce resources by balancing risks and rewards of alternative strategies (Barkley 2004). According to IRM (2002), risk management protects and adds value to the project and its stakeholders through supporting the project's objectives by providing a framework that enables future activity to take place in a consistent and controlled manner, by improving decision making, planning and prioritization

through comprehensive and structured understanding of business activity, volatility and project opportunity/threat and by optimizing operational efficiency.

Generally, risk management is very important in real estate projects in that it leads to improved success rate towards achieving project objectives (such as delivering the product closer to the agreed upon time, within the acceptable cost and quality standards), informed project decisions, improved communication between project stakeholders, enhanced customer loyalty and confidence and resource efficiency and effectiveness.

2.2 Empirical literature review

The real estate industry is at its infancy stage in Ethiopia. Because of this fact and the recent introduction of risk management concept in businesses, there is limited amount of research undertaken on the subject of real estate risk management in developing countries, in general and in Ethiopia, in particular. But there are still studies that are conducted on risk management practices of other sectors like the construction sector, the financial sector like banks and its closely affiliated sector insurance. These studies are reviewed below.

Haddush (2016) conducted an empirical survey in an effort to examine the experience of the construction industry of Ethiopia with respect to the management of risk and the implementation of integrated risk management. The findings show that formal risk management is not well practiced in the industry with only 28.6% of them implementing formal risk management with risk management policy approved by the board of directors signifying absence of a structured approach to deal with the risks that greatly affect the performance and competitiveness of the enterprises. The researcher suggested a sustainable implementation of integrated risk management practice and the need for the owners of construction enterprises, their board and the top management to be able to discharge their leadership role in implementing integrated risk management in their enterprises for the success and growth of the construction industry.

Frezewd (2016) studied the practice of project risk management in Batu ad Dukem Town water supply projects and found that a standard risk management process is absent within the projects in that there is no policy or guideline that is designed on how to manage risks in the projects and no well-defined strategy that guides on how to respond to risks within the project. Moreover, the research findings show that in spite of the presence of risk identification and analysis, through planning does not exist. Generally, the outcome of the research showed that

risk management practice is implemented to some extent but there is a gap between the theory of project risk management which should be applied and the actual practice that is performed by the two water supply projects.

Hana (2016) examined the extent of operational risk management practices of CBE. The study was made through the combination of theory and empirical work. The outcome of the study indicated that although some of its components are not always adhered to and need improvement, there is still a well-established framework to manage operational risks. The researcher suggested that the bank needs to allocate adequate resources, create awareness and build the capacity of concerned staff, strengthen the risk culture, employ appropriate mechanisms for measurement and reporting of operational risk in order to improve its risk management practices.

Other studies on risk management Tsion (2015) studied risk management practices of commercial banks in Ethiopia and identified the major risks faced by those banks. Tsion (2015) found that banks operating in Ethiopia are indeed risk-focused. And suggested that banks should give emphasis on staff training in the area of risk management and they must make risk visible, measurable and manageable and ensure a meaningful risk culture throughout all processes and activities.

In addition, Frezewd(2016) and Haddush(2016) found that formal risk management is barely implemented and practiced in projects, specifically in construction projects. Absence of comprehensive identification of the various risks and evaluation of their respective impacts on project objectives is causing a delay and cost overrun. Moreover, they recommended advance risk planning and preparations to properly and efficiently respond to when such risks occur.

2.3 Research gap analysis

Most studies conducted on risk management show the need for a coordinated and an integrated risk management framework. Studies also show that there is a need to create awareness and build the capacity of project team members, strengthen the risk culture, employ appropriate mechanisms for measurement and reporting of operational risk in order to improve its risk management practices. Even in organizations which are risk focused, there is still a gap that needs to be filled between the theory of project risk management which should be applied and the actual practice that is performed. This study aims at assessing the risk management

practices of real estate projects in the hopes that the findings and recommendations could close such gap and contribute to the very limited literature in the area.

2.5 Conceptual framework of the study

A conceptual framework is a product of a researcher's reasoning or tentative conclusion. The concepts arrived at are based on a literature review where evidence is still incomplete, or theories arrived at are inadequate (Regoniel, 2021). It is a synthesis of interlinked concepts that provide a comprehensive understanding of a phenomenon.

This conceptual frame work is developed by reviewing different literatures and intended to show graphically what the researcher tries to do in this study. To remind the main aim of the paper is to study risk management practice of real estate projects.

The figure 2.1 below is conceptual framework. In each project cycle, there is the identification of risk, analysis of risks, responding of risk, monitoring and controlling of risks that has to be analysed. For example, risk identification can be done by means of updating the risk register, making the plan as per received information, adopting correction action, updating to risks identification checklist for future construction projects.

Once the risks identification work is over then priorities are set by determining which risks are more sensitive and must be analysed first and properly. For that to work, qualitative and quantitative analysing should be done to know the risk level, consequences and likelihood, hazard and risk's impact.

The third step is response of probable risks. Depending upon the rank or the level of risks. Generally, there is acceptance of risk when the level is low, risk will reject or avoidance if the level of risks is high. Also as per the level of risks mitigation is used to help reduce risk. The fourth and last one is transferring the risks. For example, transfer the risks to insurance company by paying the money.

In the last stage, risks monitor and control is applied in the project by keep track of risk management process and activities to determine their efficiency and effectiveness. If risk monitoring and controlling is applied properly it will help converting risk to opportunity.

Figure 2. 1 Conceptual framework of the study



Source: Wanner. (2019). *Project Risk Management*

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter is specific procedures and techniques used to identify, select, process, and analyze information about a research. Allows the reader to critically evaluate the studies over all validity and reliability

This research is done based on two real estate organizations projects to assess the risk management practice of their projects and their employees' awareness and perception towards risk management. The two real estates are: Elilta real estate and Noah real estate. This chapter is concerned with; the purpose of the research, data sources and types, methods and procedures of data collection and analysis and ethical consideration will be covered in this section.

3.1 Research Design

The research purpose most often used in the research methods' literature is classified in to three; exploratory, descriptive and explanatory (Saunders, Lewis and Thornhill, 2009). This thesis is done on a descriptive approach to assess risk management practices of real estate projects. Descriptive research is aimed at describing phenomena and is not particularly concerned with understanding why behaviour is the way it is. It doesn't involve changing or modifying the situation under investigation, nor does it intend to detect cause-and-effect relationships. This type of research is very useful for setting out baselines or 'templates' of how we think the world is (Adams, Hafiz, Raeside and White 2007).

The survey strategy that is employed in the study allowed the researcher in collecting quantitative data which can be analysed quantitatively using descriptive and inferential statistics. Therefore, this study followed the quantitative approach to assess risk management practices such as the level of awareness towards risk and its management, the practice of risk identification, risk analysis and risk response methods in the real estate projects. Quantitative approach is predominantly used as a synonym for any data collection technique (such as a questionnaire) or data analysis procedure (such as graphs or statistics) that generates or uses numerical data (Saunders et al. 2009).

3.2 Data Type and Source

This research is done in two real estate organizations' projects to assess the risk management practices of their projects. The researcher chose the real estate industry in the research because it is mostly project driven and vulnerable to risk and in addition to that it is a less researched industry.

Both primary and secondary data sources are used in this research. The primary data is obtained from questionnaires that are administered to a sample of project team members that have a key role in the course of the projects' risk management process and project managers in the selected real estate projects. The secondary data is obtained from document review, published journals, books, reports, research works, and the internet.

Table 3. 1 Forms of Data Collection

Forms of Data Collection	Type of Data	Definition of Type of Data
Observations	Fieldnotes and drawings	Unstructured text data and pictures taken during observations by the researcher
Interviews and questionnaires	Transcriptions of open-ended interviews or open-ended questions on questionnaires	Unstructured text data obtained from transcribing audiotapes of interviews or by transcribing open-ended responses to questions on questionnaires
Documents	Hand-recorded notes about documents or optically scanned documents	Public (e.g., notes from meetings) and private (e.g., journals) records available to the researcher
Audiovisual materials	Pictures, photographs, videotapes, objects, sounds	Audiovisual materials consisting of images or sounds of people or places recorded by the researcher or someone else

Source (Creswell, 2016)

3.3 Data Collection Method and Design

The survey strategy is a popular and common strategy in business and management research and is most frequently used to answer who, what, where, how much and how many questions. It therefore tends to be used for exploratory and descriptive research. The survey strategy involves selecting a sample to represent a known population. The sample allows the researcher to generalize a study's result to a known population. Data can be collected directly from respondents in a natural setting using a systematic technique. Questionnaire and interviews are the most widely used data collection techniques within the survey strategy (Saunders et al. 2009).

Accordingly, questionnaires that best answers the research questions and achieve research objectives are developed and distributed to a sample of selected respondents across the two real estate projects. Self-administered questionnaires are used for data collection method in the research because, since each person (respondent) is asked to respond to the same set of questions, it provides an efficient way of collecting responses from a sample prior to quantitative analysis.

Close-ended questions in which respondents select a single response that they felt were most appropriate from a selection of choices are used in the survey. Close-ended questions were chosen in consideration of the fact that respondents are usually busy and this method enables the researcher to obtain responses promptly. Close-ended questions are also advantageous in that response choices can clarify the context of the question for the respondent as well as improve consistency of responses. Moreover, the five-point rating scale are used in which each respondent were asked how strongly she or he agrees or disagrees with a statement or series of statements.

The questionnaire are developed in line with the research objectives and questions that are stated in chapter one. And consisted of two parts. The first section covers questions with personal information of the respondents. The second part consists of broad ranging questions regarding the application of risk management processes and the existence of a formal risk management framework such as risk identification, risk analysis, risk monitoring and control, risk response strategies adopted by the projects. It also contains questions relating to the aspects of perception and awareness to risk management.

3.4 Target Population and Sampling Design

As the purpose of this study is to describe the practice of project risk management in selected real estate projects, my target population for my study are the project managers and project team members participating in and carrying out the projects at the time of the study. The number of project managers and project team members that are working at Noah real estate around bole medhaniyalem at Abyssinia plaza building are 9 and those working at Elilta real estate around sarbet behind Adams pavilion building are 17; therefore, across the two projects, the total population of the study is the total number of 26.

In order to meet the research objectives and give proper answer for the research questions, 10 respondents are selected from the two real estate projects using non probability purposive sampling, that are most likely able to offer insights from which an understanding can be built.

Non probability purposive sampling technique is used for this research because it provides a range of alternative techniques to select samples based on the researcher's subjective judgment as the sample size which is required for the research are selected based on its convenience to the research objective. Moreover, Purposive or judgmental sampling enables the researcher to use his/her own judgment to select cases that best answer the research questions. Although the probability of each case being selected from the total population is not known with certainty, the validity, understanding and insights that will be gained from the data will be more to do with the data collection and analysis skills than with the size of the sample (Saunders et al. 2009). As the number of project personnel who have the knowledge and expertise in the area being studied is limited, the researcher employed purposive sampling technique.

According to Patton (2002), in a non-probability sampling there are no rules for deciding on a suitable sample size; rather the logical relationship between the sample selection technique and the purpose and focus of the research is important. Sample size is dependent on the research questions and objectives, what will have credibility and what can be done within available resources; thus justifying the sample size selected in the study.

3.5 Data Analysis Technique

In statistics the next step after the quantitative data is collected to analyse those collected data's. Analysis involves preparing data for analysis, running the analysis, reporting results, and discussing them. After the quantitative data is collected through questioners it will entered into SPSS version 20 and analysed. I used a quantitative descriptive statistics such as tables, charts and percentages with the help of SPSS version 20 to help me analyse the collected quantitative data

3.6 Ethnical considerations

Ethics are the moral principles that govern a person's behaviour. Research ethics may be referred to as doing what is morally and legally right in research. They are actually norms for conduct that distinguish between right and wrong, and acceptable and unacceptable behaviour.

Ethics refers to the appropriateness of the researcher's behaviour in relation to the rights of those who become the subject of the research work, or are affected by it (Saunders et al. 2009).

According to The Research Excellence Framework, 2014, research is "a process of investigation leading to new insights, effectively shared." Research is a multi-stage process. Ethics are central to the research process. Researchers need to take care of various ethical issues at different levels of this process. The reality is there can be ethical concerns at every step of the research process (Bickman&Rog, 2009).

When conducting this research, the privacy of participants were kept discrete, and every participant is not obligated to participate it were done voluntarily. The confidentiality of data and the participants' anonymity will be maintained

CHAPTER FOUR

RESULT, ANALYSIS AND DISCUSSION OF FINDINGS

This chapter of the study presents an in-depth analysis on the sample data gathered on the research topic, "Assessing Risk Management in Construction Companies: case study of real estate companies in Ethiopia". All the questionnaires were distributed to project managers and core project team members among two real estate projects. Results and findings of the analysis are used as a basis for the conclusion and recommendation section of this study.

4.1 Response Rate

In the study, purposive or judgmental sampling is used to select 10 samples out of a total population of 26. To collect the primary data questionnaires are administered to sample respondents. The questionnaire consists of 29 close ended question. 10 questionnaires were distributed to sample respondents from the two real estate projects that are introduced before; out of which 10 of them were properly completed and returned, representing a 100% response rate.

4.2 personal information of respondents

All 10 questionnaires were distributed for project managers and core team members. The professional information of the 10 participants, which responded to the questionnaires, is summarized as follow

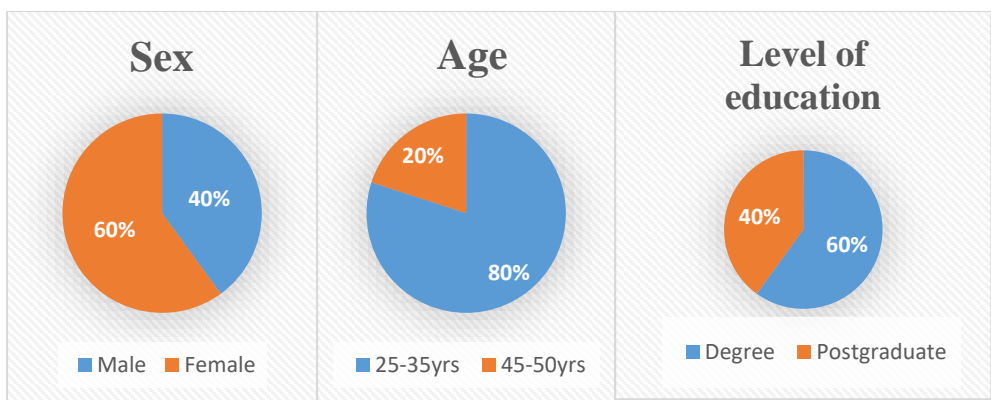


Figure 4. 1 personal information of participants

Table 4. 1personal information of respondents

Year of work experience				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1-2yrs	3	30.0	30.0	30.0
3-5yrs	2	20.0	20.0	50.0
6-10yrs	3	30.0	30.0	80.0
Above 10yrs	2	20.0	20.0	100.0
Total	10	100.0	100.0	

As seen from the table above, 50 % of the respondents have more than 2 years' of work experience (20% have 2-3 years of work experience and 30% have above 3 years of work experience).

Table 4. 2personal information of respondents

How many years have you worked in this company				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1-2yrs	6	60.0	60.0	60.0
3-5yrs	3	30.0	30.0	90.0
6-10yrs	1	10.0	10.0	100.0
Total	10	100.0	100.0	

As seen from the table above, 90 % of the respondents worked in their current project for less than 6 years (60% have 1-2 years of project experience and 30% have 3-5 years of project experience).

Table 4. 3personal information of respondents

Are you familiar with the concept of risk management and its process					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	100.0	100.0	100.0

Table 4. 4personal information of respondents

Does your company give you a formal risk management training					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	100.0	100.0	100.0

As show in table 4.3 & 4.4, 100% of the respondents are familiar with the concept of risk management and its process but also sadly 100% of them have denied the fact that their company gives formal risk management training

4.3 Project Risk Management

In the second part of the questionnaire the respondents are asked questions that are directly related to the research's objective. As the purpose of the study is to assess and describe the risk management of real estate projects, the introductory questions are designed to provide general information and insight to the actual risk management practices of such projects. Respondents were asked to answer questions based on a five point Likert scale in which 1 represented 'strongly agree' and 5 represented 'strongly disagree'.

Table 4. 5Project Risk Management

Questions	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
Does your company have a defined risk management process to identify and address risks	1	6	1	1	1	10
	10	60	10	10	10	100%
Is there a guideline that guides you through how to manage unexpected risks	0	5	1	3	1	10
	0	50	10	30	10	100%
Is there a responsible person or department assigned to handle when risk occurs	3	3	3	1	0	10
	30	30	30	10	0	100%
Risk information is consistently communicated and shared across projects and departments within your company	2	3	2	3	0	10
	20	30	20	30	0	100%

As illustrated in the table above on the first question, 10% of the respondents have strongly agreed and 60% of respondents have agreed that their company have a defined risk management process to identify and address risks; whereas 10% of the respondents are uncertain of its existence and the rest 20% of the respondents have disagreed to the existence of a defined risk management process to identify and address risks in their company. This indicated that the majority of respondents (70%) have agreed in the presence of a defined risk management process.

As depicted in the table above on the second question, 50% of the respondents believe that there is a guideline that guides them through how to manage unexpected risk; whereas 10% of the respondents are uncertain of its existence and the rest 40% of respondents have disagreed of its existence. In saying this we can conclude that the majority of the respondents (50%) have agreed that there is a guideline.

As seen from the table above on the third question, 60 % of the respondents (30 % that agreed and 30% that strongly agreed) stated that there is a responsible person assigned to handle occurrence of risks in the project.

The result presented from the table above on the fourth question, 20% have strongly agreed and 30% have agreed that risk information is consistently communicated, however 20% of those respondents are uncertain and the rest 30% have disagreed so in saying this we can conclude that majority of the respondent 50% have agreed in the there is a consistent communication of risk information across projects and departments.

4.4 The Risk Management Process

Responses from sample respondents regarding the elements of the risk management process including risk planning, risk identification, risk analysis, risk monitoring and risk response are discussed under this section

4.4.1 Risk planning

A risk is any uncertain event or condition that might affect your project. Not all risks are negative. Some events or conditions can help your project. When this happens, it's called an opportunity; but it's still handled just like a risk. When projects are planned, risks are still uncertain because they haven't happened yet. But eventually, some of the risks that you plan for do happen, and that's when you have to deal with them.

It is important to plan and decide which way to follow and which approach to take in carrying out risk management activities. The project manager, project teams, key stakeholders and anyone in the project with the responsibility to manage the risk planning activities should hold planning meetings to develop risk management plan (PMBOK 2000).

Table 4. 6Risk Management Planning

The project team conduct a meeting for pre risk management planning to discuss on what risk could occur and how to handle them				
	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	1	10.0	10.0	10.0
Agree	2	20.0	20.0	30.0
Valid Uncertain	3	30.0	30.0	60.0
Disagree	4	40.0	40.0	100.0
Total	10	100.0	100.0	

Looking at the above table, 40% Of the respondents have denied that the project team conduct a meeting for pre risk management planning to discuss on what risk could occur and how to handle them, Whereas 30% of the respondent are uncertain of occurrence of such risk management planning in the project so this shows that the majority of this percentage (40% of the disagreeing and 30% of them being uncertain) leads us into deciding that there is no pre risk management planning in the project.

The respondents were also asked if the project team create a contingency plan in case the first or second plan doesn't work. 80% of the respondents have agreed and 20% of them where uncertain so this leads us to an 80% of conformation rate that the project team creates a contingency plan to help solve unplanned risks. This is shown in the figure below.

Figure 4. 2Contingency Plan in Risk Management planning

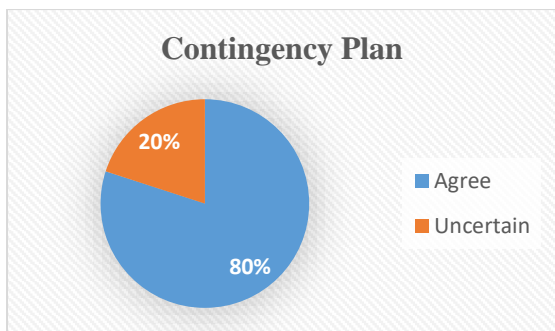


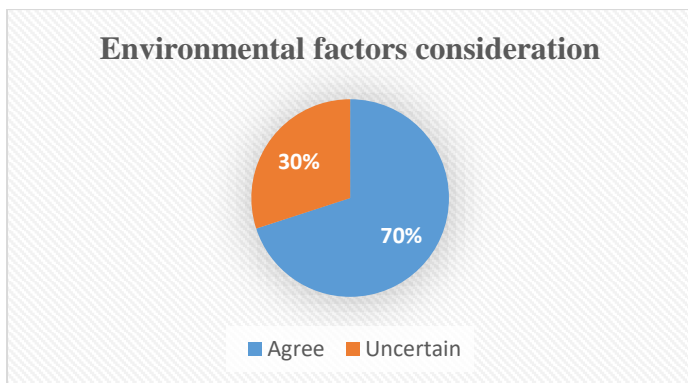
Table 4. 7Risk Management Planning

Every important stakeholders of the project involved in the risk management planning				
	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	1	10.0	10.0	10.0
Agree	7	70.0	70.0	80.0
Valid Uncertain	1	10.0	10.0	90.0
disagree	1	10.0	10.0	100.0
Total	10	100.0	100.0	

According to the illustration of the above table, 80% of the respondents believe that every important stake holders of the project are involved in the risk management planning process. It is vital to communicate with and obtain agreement and support from all key stakeholders to ensure the risk management process is supported and performed effectively over the project life cycle. So in saying this 80% of respondents agreeing to this is a very promising percentage.

The respondents are also asked if environmental factors are considered in the project risk. Their responses show that the projects are doing well in this aspect with 70% of the respondents agreeing that environmental factors are considered during risk planning.

Figure 4. 3 Factors considered in Risk management Planning



Even if you cannot have control over Environmental Factors it is important that you should be aware of them to plan the project accordingly. Because environmental Factors will affect the project. If you don't act in advance, they can slow down the project or affect the outcomes.

4.4.2 Risk identification

According to *Rajman Md Rawi on March 29, 2016*, "All projects have risks. If a potential risk of the project is not identified early, then the project will be at a high risk to complete as per schedule, within budget and to meet the expected quality".

Project Risk identification is the most important process in the Risk Management. An organization should identify risk sources, areas of impact and their causes and potential consequences in an effort to generate a comprehensive list of risks that might influence the achievement of its objectives. However, as recommended by [Donna Ritter], we should not spend too much time in identifying risks. After the list is made, qualitative and quantitative analysis is done to figure out which risks you spend time and/or money on.

Looking into the practice of projects under the study, 60% of the respondents denied that the project team detailed identifies sources of risk, areas of impacts, and their causes and potential impacts also disagreed that after the Risks are identified by the project team are successively integrated/rolled up to construct a comprehensive corporate risk profile the remaining 40% of respondents have agreed. This shows that majority of the respondents (60%) disagreed of the existence of this risk identification practices in the project. This is show in table 4.8 and 4.9 below.

Table 4. 8 Source and Cause in Risk Identification

Your company detailed identifies sources of risk, areas of impacts, and their causes and potential impacts				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	40.0	40.0
	No	6	60.0	100.0
	Total	10	100.0	100.0

Table 4. 9 Risk Identification

Risks identified by the project team are successively integrated/rolled up to construct a comprehensive corporate risk profile				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	4	40.0	40.0
	Disagree	5	50.0	90.0
	strongly disagree	1	10.0	100.0
	Total	10	100.0	100.0

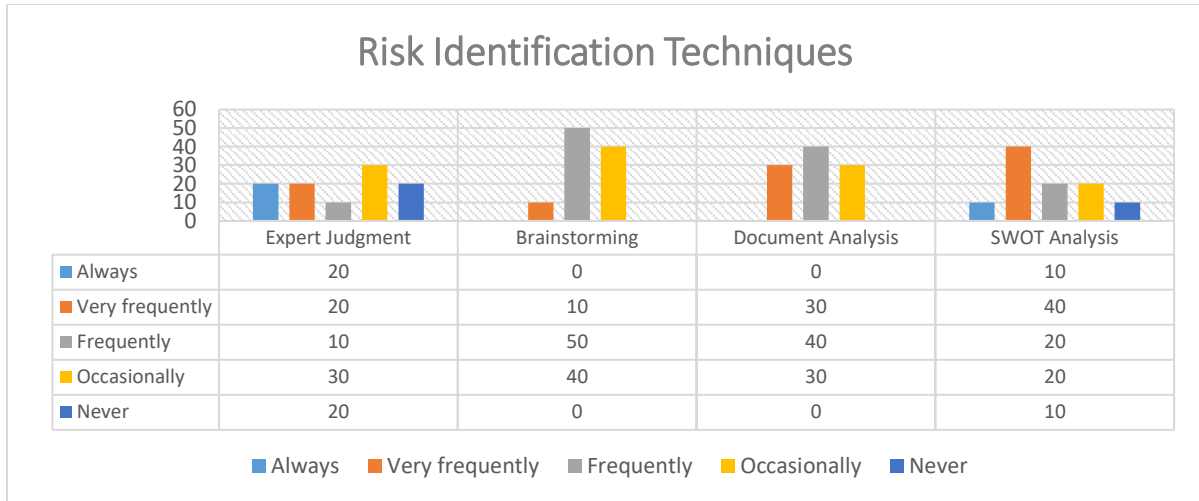
As illustrated in table 4.10 below, 50% of the respondents disagreed Risk registered by the project team are regularly updated whereas, 20% of the respondents are uncertain of its existence and the rest 30% agreed. Therefore, this demonstrates that majority of the respondents (50%) do not believe that there is a regular risk registration update

Table 4. 10 Risk Registration in Risk Identification

Risk registered by the project team are regularly updated				
	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	3	30.0	30.0	30.0
Uncertain	2	20.0	20.0	50.0
Valid Disagree	3	30.0	30.0	80.0
strongly disagree	2	20.0	20.0	100.0
Total	10	100.0	100.0	

In the research questionnaire the respondents were asked how often their company uses risk identification techniques such as expert judgment, brainstorming, document analysis, SWOT analysis in saying this the response of the respondents is provided in the figure below.

Figure 4. 4 Risk Identification Techniques



As illustrated on the graph above respondent’s response on use of Risk identification techniques is summarized as follows

- Expert judgment is used 50% frequently, 30% of occasionally and 20% never. This shows that Expert judgment is used 80% of the time.
- Brain storming is used 60% frequently, 40% of occasionally. This shows that Brainstorming is used 100% of the time.
- Document Analysis is used 70% frequently, 30% of occasionally. This shows that Document Analysis is used 100% of the time.
- Strength, weakness, opportunity, threat analysis (SWOT Analysis) is used 70% frequently, 20% of occasionally and 10% never. This shows that SWOT Analysis is used 90% of the time.

Therefore, this shows that Brainstorming and Data Analysis techniques are the once that are more often used in the project.

4.4.3 Risk Analysis

Risk analysis is the next step that occurs after risk identification. Once risks are identified, they have to be formally assessed with respect to their probability of impacting project development and to numerically analyse the possibility of every risk and its effect on project objectives. After this assessments are made the risks are accordingly prioritized.

Risk analysis is distinguished by two clear categories: Qualitative and Quantitative Risk Analysis.

- Qualitative Risk Analysis is the process during which one prioritizes risks for further action by assessing their probability of impacting project development.
- Quantitative Risk Analysis Process aims to numerically analyse the possibility of every risk and its effect on project objectives, as well as the degree of overall project risk. This procedure uses several techniques and methods such as data collection and representational techniques to determine the probability of achieving project objectives, to quantify the exposure to risks and develop a size and cost assessment schedule.

Table 4. 11 Risk Analysis

Questions	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
Risks are formally assessed with respect to their likelihood of occurrence and impact magnitude	3	4	3	0	0	10
	30	40	30	0	0	100%
In your company identified risks are qualitatively analyzed by combining their probability of occurrence and their impacts.	1	4	4	1	0	10
	10	40	40	10	0	100%
Risk exposure of your project is quantified to	0	2	8	0	0	10

determine the size of cost and schedule contingency reserves that may be needed.	0	20	80	0	0	100%
Your company assesses the probability of risk occurrence in the project by ranking the importance of risks based on past experience	1	7	2	0	0	10
	10	70	20	0	0	100%

In the table above on the first question emphasizes that 70% of the respondents which is the majority agreed that risks are formally assessed with respect to their probability of occurrence and impact magnitude.

As illustrated on the table above on the second and third question it shows that 50% of the respondents agreed that their company uses qualitative risk analysis but only 20% of the respondents agreed of the use of quantitative risk analysis the rest 80% are uncertain of the existence of a quantitative risk analysis in their company. This shows even though the respondents agreed in the presence of a formal risk assessment system their response on questions of quantitative risk analysis show that there is a problem in this area of risk management since 80% of the respondents are uncertain with the existence of analysing risks numerically to determine the size of cost and schedule contingency reserves that may be needed if risks occur.

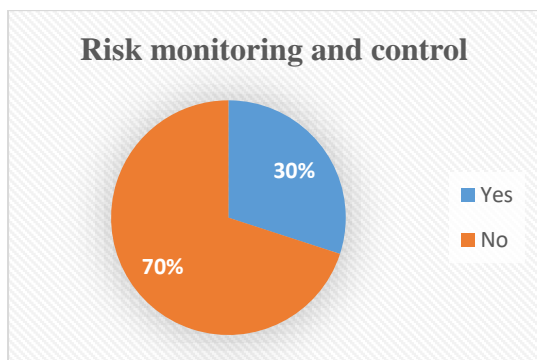
As depicted on the table above on the fourth question 80% of the respondents agreed that their company assesses the probability of risk occurrence in the project by ranking the importance of risks based on past experience. Therefore, we can conclude that risk assessment is done through past experience

4.4.4 Risk Monitoring and Control

Risk monitoring and control refers to the process of continuously identifying risks and establishing the best methods of dealing with those risks. Risk monitoring and control begins at the start of projects when all potential and known risks are identified, and then just as importantly, continues throughout a project as those initial risks are continuously tracked while new risks are also identified as work continues, changes and progress.

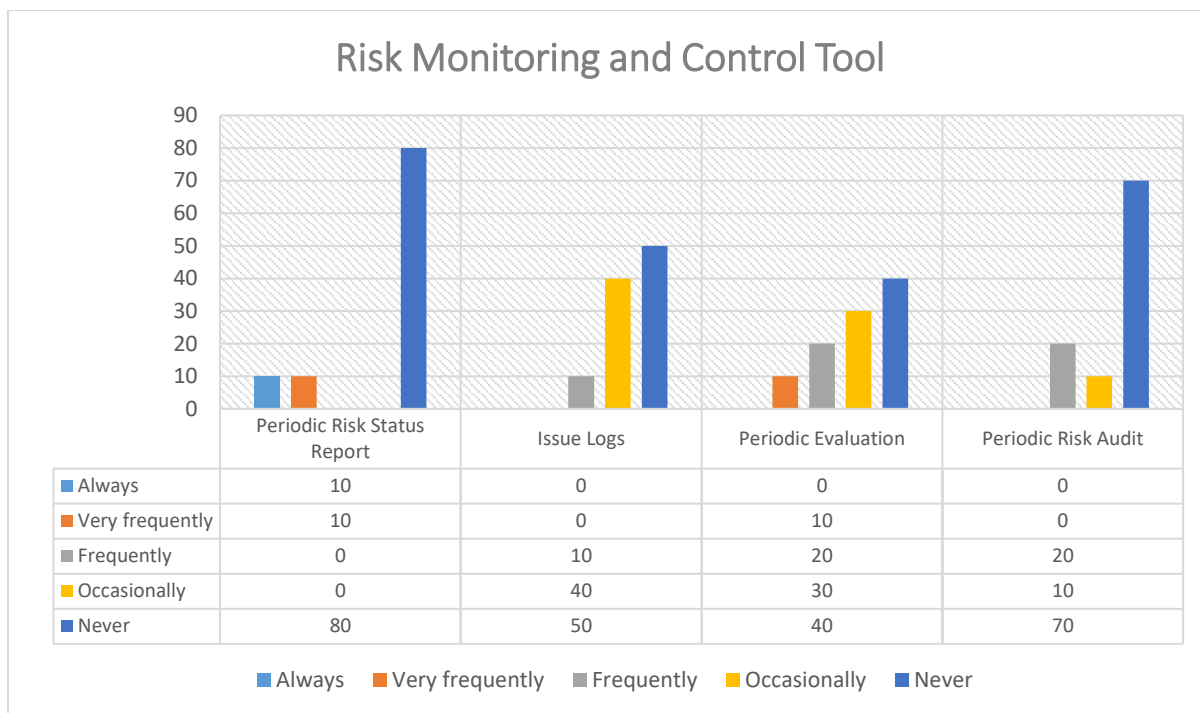
Concerning such practice, majority of the respondents (70%) disagreed that the Risk management process and activities are regularly monitored to determine their efficiency and effectiveness; it can be drawn from the 30% respondents' only agreeing that the practice needs improvement. This is shown in the figure below.

Figure 4. 5Risk Monitoring and Control



In the research questionnaire the respondents were also asked how often their company uses tools to monitor and review risk management effectiveness. Tools such as periodic risk status reports and trends, issue logs, periodic evaluation, periodic risk audits. The response of the respondents is summarized in the graph below.

Figure 4. 6 Risk Monitoring and Evaluation



As illustrated on the graph above respondent’s response on use of tools to monitor and review risk management effectiveness is summarized as follows

- Periodic Risk Status Report is used 20% frequently and 80% never. This shows that Periodic Risk Status Report is used only 20% of the time
- Issue Logs is used 10% frequently, 40% occasionally and never 50%. This shows that Issue Logs is used 50% of the time
- Periodic Evaluation is used 30% frequently, 30% of occasionally and 40% never. This shows that is Periodic Evaluation used 60% of the time
- Periodic Risk Audit is used 20% frequently, 10% of occasionally and 70% never. This that Periodic Risk Audit is used only 30% of the time

Therefore, this shows that periodic evaluation is the one that is used more often in the project

4.4.5 Risk Response

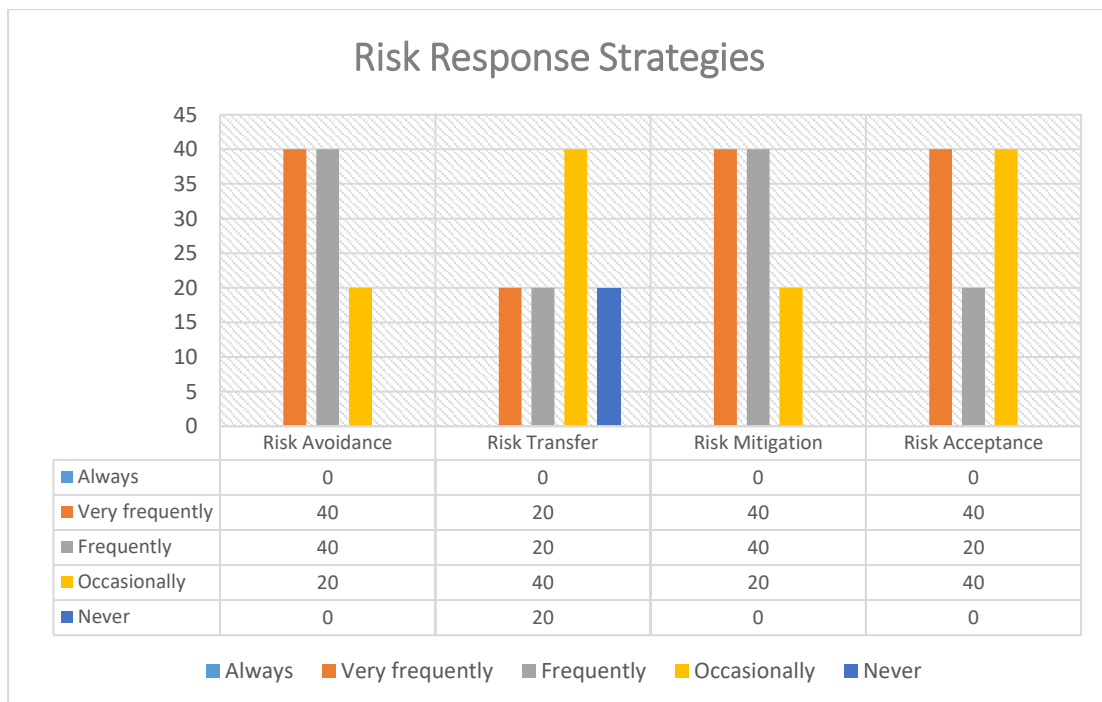
After risks are identified and analysed, procedures and techniques are developed to enhance opportunities and reduce threats to the project’s objectives. Planning a response to risk involves understanding the project and impacts of various corrective actions midstream. In saying this respondents' attitude towards the projects risk response practice is 50% of the respondents believe that their company has a well-structured risk response strategy to deal with risks that

occur within the project, 30% of them are uncertain and the rest 20% disagree of the existence. This is shown on table 4.12 below.

Table 4. 12 Risk Response

Your company has a well-structured risk response strategy to deal with risks that occur within the project				
	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	2	20.0	20.0	20.0
Agree	3	30.0	30.0	50.0
Valid Uncertain	3	30.0	30.0	80.0
Disagree	2	20.0	20.0	100.0
Total	10	100.0	100.0	

Figure 4. 7 Risk Response



As illustrated on the graph above respondent's response on use of risk response strategies is summarized as follows

- Risk Avoidance is used 80% frequently and 20% occasionally. This shows that Risk Avoidance is used only 100% of the time
- Risk Transfer is used 40% frequently, 40% occasionally and never 20%. This shows that Risk Transfer is used 80% of the time
- Risk Mitigation is used 80% frequently, 20% of occasionally. This shows that is Risk Mitigation used 100% of the time
- Risk Acceptance is used 60% frequently, 40% of occasionally. This that Risk Acceptance is used only 100% of the time

Therefore, this shows that risk avoidance, risk mitigation and risk acceptance are the one that are used more often in the project

4.4.6 Risk Awareness and Perception

Risk awareness is raising an understanding about risks existence, their potential impacts, and how they are managed in shorts its knowledge of risk management. In saying this building a risk management culture is very important because such culture develops open discussion about uncertainties and opportunities, encourages staff to express concerns, and maintains processes to elevate concerns to appropriate levels which later on lead to a Successful management of project risk.

In an effort to investigate awareness and perception of project team members about risk management, a number of survey questions relating to risk management training and team members' understanding of the concept of risk were included in the questionnaire. The result on table 4.13 below shows that the majority of the respondents (70%) believe that risk represents both opportunities and threats relate risk with negative events and only 30% believe that risk represents it threats or in other words a negative event. And for the question asked if their company arranges different trainings and meetings to raise employees awareness towards risk on table 4.14 below 70% of the respondents which is a majority disagreed on and the rest 30% are uncertain

Therefore, this shows that even though employees are have a little understanding in their own perspective about risks but there is no effective training system to further raise their awareness towards risk

Table 4. 13 Risk Awareness and Perception

What is risk in your perspective				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Threat	3	30.0	30.0	30.0
Both	7	70.0	70.0	100.0
Total	10	100.0	100.0	

Table 4. 14 Risk Awareness and Perception

Your company arranges different trainings and meetings to raise employees awareness towards risk				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Uncertain	3	30.0	30.0	30.0
Disagree	4	40.0	40.0	70.0
strongly disagree	3	30.0	30.0	100.0
Total	10	100.0	100.0	

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

This section is an essential part of the research paper. It is the last impression the researcher leaves in the mind of the reader. In this chapter research findings, conclusion derived from the data analysis and recommendations suggested based on the research result to help improve the risk management practice of real estate companies will be provided.

5.1 Summary of major findings

Based on chapter four (data analysis) and in accordance with the research question the following findings are summarized.

Based on general question asked about project risk management

- Respondents are familiar with the concept of risk management but their company does not provide any form of training regarding how to manage risk.
- There is a defined risk management process to identify and address risk, there is a guideline that proposes how to handle uncertainties that the projects may encounter.
- There is a responsible person or department assigned to handle when risk occurs and also Risk information is consistently communicated and shared across projects and departments.

1. Risk management practices in the real estate projects

- Data analysis on Risk planning: - the data gathered shows that the project team do not conduct a meeting for pre risk management planning to discuss on what risk could occur and how to handle them but even though they do not have a pre risk management planning the project team creates a contingency plan to help solve unplanned risks that occur during the construction of the project. The finding of the research also shows that every important stakeholders of the project are involved in the risk management planning process, also it's found out that environmental factors are considered.
- Data analysis on risk identification: - it's found out that there is an absence in identifying sources of risk, areas of impacts, and their causes and potential impacts, also risks identified and registered by the project team are not successively integrated to construct a comprehensive corporate risk profile and are not regularly updated. The majority of the respondents agreed that brainstorming and document analysis risk

identification techniques are the ones that are more often used to identify risks that could occur.

- Data analysis on risk analysis: - shows that risks are formally assessed with respect to their probability of occurrence and their impact (qualitative analysis). But the findings on quantitative risk analysis show that there is a problem in this area of risk management because majority of the respondents are uncertain of risks being numerically determined to the size of cost and schedule contingency reserves that may be needed if risks occur. Moreover the result shows that, risk assessment is done by ranking the importance of risks based on past experience.
 - Data analysis on risk monitoring and controlling: - implies that the project is not doing that well in terms of keeping track of risk management process and activities to determine their efficiency and effectiveness. The respondents response on risk monitoring tools shows that periodic evaluation is more often used to monitor and review risk management effectiveness.
 - Data analysis on risk response: - shows that there is a well-structured risk response strategy to deal with risks. And risk avoidance, risk mitigation and risk acceptance are the strategies that are often used.
2. Level of awareness and perception to risk and its management among real estate projects
- Data analysis on risk Awareness and Perception: - shows that the majority of the respondents believe that risk represents both opportunities and threats. Also based on the respondents' response it's found that there is no any sort of trainings and meetings to raise employees' awareness towards risk. Therefore, this shows that even though employees are have a little understanding in their own perspective about risks there is no effective training system to further raise their awareness towards risk.

5.2 Conclusion

The objective of this study is assessing risk management in real estate companies by conducting a survey on two companies with the specific objectives of:

- To examine risk management practices of selected real estate projects.
- To investigate the level of awareness and perception to risk and its management among real estate projects.

Keeping in mind of the above objectives, the conclusions drawn are present as follows:

As explained in the introduction and literature review part of this research paper risk is a very risky if not managed properly. Knowing this the finding of this study shows that risk management practice exists but it's not that much properly practiced in the projects which can be shown through the points described below.

From the data analysis result, it can be concluded that there is a defined risk management process to identify and address risk, there is a guideline that proposes how to handle uncertainties that the projects may encounter and there is a responsible person or department assigned to handle when risk occurs and also Risk information is consistently communicated and shared across projects and departments.

Similarly from the data gathered, it can be conclude there is no pre risk management planning even though contingency plan are created to help solve unplanned risks that occur during the construction of the project and every important stakeholders are involved in the risk management planning process, also environmental factors are considered. In addition, there is an absence in identifying risks and risks are not numerically analysed even though there is an existence of qualitative risk analysis to identify the probability of risk occurrence. And also the results of the survey shows that risk monitoring and controlling in the projects is not doing that well in terms of keeping track of risk management process and activities to determine their efficiency and effectiveness. Therefore it can be concluded that there is a major problem in risk planning, identification, analysis, monitoring and controlling of the risk management process and it needs to be improved.

The results of the data analysis revealed that there is a well-structured risk response strategy to deal with risks. But regarding risk awareness and perception even though the project team members have a little understanding in their own perspective about risks there is no effective training system to further raise their awareness towards risk.

5.3 Recommendation

Based on the summary and conclusion of this research, the following recommendations are made. Believing that these recommendations will take the real estate companies a step forward in respect to risk management practice.

1. Risk management practices in the real estate projects

In order to improve the risk management practice of the real estate projects, it is suggested that the real estate companies should take risk management as a very important and critical part of their project as it's a means helps them achieve their objectives.

- Risk planning: As Benjamin Franklin said 'if you fail to plan, you are planning to fail', so it is important to contemplate risk management planning in the project. Real estate companies should do risk planning before the project is officially started to discuss on what risk could occur and how to handle them.
- Risk identification: the company needs to identify sources of risk, areas of impacts, and their causes and potential impacts, also risks identified and registered by the project team should be successively integrated to construct a comprehensive corporate risk profile and also the risks registered should be regularly updated
- Risk analysis: quantitative risk analysis should also be considered to numerically determine the size of cost and schedule contingency reserves that may be needed if risks occur.
- Risk monitoring and controlling: the project should keep track of risk management process and activities to determine their efficiency and effectiveness.

2. Level of awareness and perception to risk and its management among real estate projects:

- Real estate companies should be invested in providing a good risk management awareness among the project team members to further raise their awareness towards risk. And this can be achieved by providing a training program and sharing experience about risk and risk management practices.

5.4 Limitations of the Study and Areas of Future Research

This research is focused on risk management practices on real estate projects. But as the scope of the research is limited to only two real estate companies, it is difficult to judge this to every other real estate companies in Ethiopia; therefore for a better understanding of this area it needs a more detailed study.

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Appendices

Survey Questionnaire

St. Mary's University College

Department of Project Management

Questionnaire on Risk Management in Construction Companies: case study of real estate companies in Ethiopia

Company Name_____

Your position in this company_____

This questionnaire is prepared by Fikir Asaminew (St. Mary's University College prospective graduate researcher) so as to assess risk management in real estate companies. It is an important element in my post graduate research. All the information's provided will be kept confidentially. However, the outcome of the research can be made available to you if you desire.

I thank you in advance for taking the time to complete the questionnaire.

Contact info: 0911087989

Email: fikirasaminew0879@gmail.com

Part one: personal information

Instruction: circle the letter in the choice to indicate your response

1. Sex:
A. Male B. Female

2. Age:
A. 25-35 yrs. B. 36-40 yrs. C. 41-50 yrs. D. Above 50

3. Level of education
A. Diploma B. Degree C. Postgraduate D. Other

4. Year of work experience
A. 1-2 yrs. B. 3-5 yrs. C. 6-10 yrs. D. Above 10 yrs.

5. How many years have you worked in this company
A. 1-2 yrs. B. 3-5 yrs. C. 6-10 yrs. D. Above 10 yrs.

6. Are you familiar with the concept of risk management and the Risk Management Process?
A. Yes B. No

7. Does your company give you a formal risk management training
A. Yes B. No

Part Two: Mark the box that is corresponds to your choice						
Question on project risk management						
		1.Strongly Agree	2.Agree	3.uncertain	4.Disagree	5.Strongly Disagree
8	Does your company have a defined risk management process to identify and address risks?					
9	Is there a guideline that guides you through how to manage unexpected risks					
10	Is there a responsible person or department assigned to handle when risk occurs					
11	Risk information is consistently communicated and shared across projects and departments within your company					
Question on risk planning						
		1.Strongly Agree	2.Agree	3.uncertain	4.Disagree	5.Strongly Disagree

12	The project team conduct a meeting for pre risk management planning to discuss on what risk could occur and how to handle them					
13	The project team creates contingency plans in case the first or second plan does not work					
14	Every important stakeholders of the project involved in the risk management planning					
15	Occurrence of risks due to environmental factors are taken into consideration during the risk planning process					
Risk identification						
		1.Yes	2.No			
16	Your company detailed identifies sources of risk, areas of impacts, and their causes and potential impacts					
		1.Strongly Agree	2.Agree	3.uncertain	4.Disagree	5.Strongly Disagree

17	Risks identified by the project team are successively integrated/rolled up to construct a comprehensive corporate risk profile					
18	Risk registered by the project team are regularly updated					
19	How often does your company uses the following risk identification techniques	1.Always	2.Very frequently	3.Frequently	4.Occasionally	5.Never
	→ Expert judgment					
	→ Brain storming					
	→ Document analysis					
	→ Strength, Weakness, Opportunity, Threat analysis					
Question on risk analysis						
		1.Strongly Agree	2.Agree	3.uncertain	4.Disagree	5.Strongly Disagree
20	Risks are formally assessed with respect to their likelihood of occurrence and impact magnitude					

21	In your company identified risks are qualitatively analyzed by combining their probability of occurrence and their impacts.					
22	Your company assesses the probability of risk occurrence in the project by ranking the importance of risks based on past experience					
23	Risk exposure of your project is quantified to determine the size of cost and schedule contingency reserves that may be needed.					
Questions on risk monitoring and control						
		1.Yes	2.No			
24	Risk management process and activities are regularly monitored to determine their efficiency and effectiveness					
25	How often does your company uses the following tools to monitor and review risk management effectiveness	1.Always	2.Very frequently	3.Frequently	4.Occasionally	5.Never

	→ Periodic risk status reports and trends					
	→ Issue logs					
	→ Periodic evaluations					
	→ Periodic risk audits					
Questions on risk response						
		1.Strongly Agree	2.Agree	3.uncertain	4.Disagree	5.Strongly Disagree
26	Your company has a well-structured risk response strategy to deal with risks that occur with in the project					
27	How often does your company uses the following risk response strategies	1.Always	2.Very frequently	3.Frequently	4.Occasionally	5.Never
	→ Avoidance					
	→ Transfer					
	→ mitigation					
	→ acceptance					
Questions on risk awareness and perception						
		1.opportunity	2.threat	3.both		
28	What is risk in your perspective					

		1.Strongly Agree	2.Agree	3.uncertain	4.Disagree	5.Strongly Disagree
29	Your company arranges different trainings and meetings to raise employees awareness towards risk					