



Global Scientific JOURNALS

GSJ: Volume 11, Issue 11 November 2023, Online: ISSN 2320-9186

www.globalscientificjournal.com

**THE IMPACT OF RISK FACTORS ON PROJECT IMPLEMENTATION AND
PERFORMANCE IN SOMALI REGION: A CASE OF GOVERNMENT
FINANCING CONSTRUCTION PROJECTS**

A THESIS RESEARCH

**Submitted to the School of Graduate Studies, Jigjiga University, In Partial
Fulfillment of the Requirements for the Award of a Masters Degree in project
Planning and Management**

By

Mustafe berket muhamed

*Under the esteemed Guidance of
Dr Abenet Yohhanes (PhD)*



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

Jigjiga, Ethiopia

Jun, 2019

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JUN, 2019

JIGJIGA, ETHIOPIA

STATEMENT OF AUTHOR

First, I declare that this thesis is the result of my own work and that all sources or materials used for this thesis have been suitably acknowledged. This thesis is submitted in partial fulfillment of the requirements for Master of Arts in masters of Project Planning & Management (MPPM) at Jigjiga University and to be made available at the University's Library under the rules of the Library. I confidently declare that this thesis has not been submitted to any other institutions for the award of any academic degree, diploma, or certificate.

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This is to certify that the thesis entitled the impact of risk factors on project implementation and performance in Somali regional state: the case of government financing construction project has been developed by **Mustafe Berket Muhumed** submitted in partial fulfillment of the requirements for the degree of **Master's** with specialization in **Project Planning & Management (MPPM)** the graduate program of the **department of accounting and finance** has been carried out by **Mustafe Berket Muhumed** under my supervision. Therefore, I recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the department for defense

Dr Abenet Yohhanes (PhD) at Jigjiga University

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ACKNOWLEDGEMENT

In the path of this work, many people have made useful contributions towards its successful completion. To every one of them, I shall ever remain grateful. I wish to register my profound gratitude to Dr.abinnet yohannes my amiable advisor for his immense support, proper guidance, constructive criticism and immeasurable enthusiasm and who despite his tight schedule as he was my advisor always there to guide me, throughout the period of this study. Dear my honorable advisor your contributions and efforts are not only appreciated, they will remain evergreen in my memory. Once again my gratitude goes to my board friends Dr. shafici, Dr.kasim and Mr.abdilahi M abdi for their guidance, support, concern towards the completion of this study in the best way for their immeasurable contributions, invaluable and scholarly criticisms and guidance towards the completion of this job.

My appreciation also goes to abdikadir abdi for his encouragement and guidance. I lack words to express my gratitude to abdilahi mahamud abdi who has proved to be more than just a colleague. I say thank you for being there, when you were needed most. My big thanks go to my department head, Jigjiga university school of postgraduate studies, abdirashid A (PhD candidate), for his perfects understanding and encouragement. I would like to acknowledge Mr Hasan Ahmed Gadhcase, Mr. Abdilahi Bulbul and Mr. kamal, for their wonderful encouragement. To all those too numerous to mention who have contributed in one way or the other in making this work a success, I say thank you and May ALLAH reward you all abundantly

I will ever remain indebted to Mr. mahamud abdikadir and abdi yahye the initiator of this dream and steadfastly nurtured this dream to fruition. Special thanks are due to my sisters' Hamda Barkhad and Xawa Barkhad for their moral support. Finally my greatest indebtedness is to Somali regional state whom provided sponsored and without their understanding, dedication, concern, sacrifice and inspiration, the realization of this objective would have remained an unfulfilled dream. To you all, I say thank you.

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ABSTRACT

The general objective of this study was to assess the impact of risk factors on project implementation and performance in Somali region: a case of government financing construction projects. The study employed a descriptive survey method. The researcher chose road construction projects and bridge building construction projects as study areas. Similarly, 57% of respondents from public bureau, 33% from contractors and 10% from consultancies were selected using purposive sampling techniques. Also, the study employed questionnaires, interviews and observations as instruments of data collection. Major findings were: the study exposed that majority of construction project staff are dominated by males (94%), as compared to females (6%) and this typifies that gender imbalance exists in construction project participation. Also, the study found the top ten foremost risk factors (RF) that have a pessimistic impact on construction project implementation and performance in highest score with an RII score of 0.522353, with a percent of 100% and lowest score with an RII score of 0.451765 with a percent of 3.80% are Poor safety methods, cause of risk occurrence and unavailability of labour, material and equipment. Lastly, conclusions were drawn from the critical factors derived from the findings of the summary of the study. Recommendations for correcting the impact of risk factors on project implementation and performance were based on conclusions drawn.

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

The arrival of the concept of globalization has shaped growing pressures on governments and its stakeholders around the world to be more reactive to the demands of the Cost and schedule implementation and performance to become primary measures of a project's success. In addition, developing countries are faced with the problem of scarce project financial resources due to the lack of risk assessment and management. although, risk defined as "possibility of loss or injury;" "the chance of loss or the perils to the subject matter of insurance contract" also "the degree of probability of such loss;" and "the chance that an investment (as a stock or commodity) will lose value" (Merriam-Webster, 2006), risk is an inevitable aspect of life. Risks require careful consideration to determine if such risk is acceptable or if it should be avoided. In the corporate world, these risks play a decisive role in determining the continuity of the enterprise. As such, risk management has evolved into a primary aspect of the decision making process for many entities through the application of risk management in the attempt to eliminate or reduce the impact of the inherent perils of risk.

Even though, risk and uncertainty can potentially have damaging consequences for the construction projects (Flanagan, Norman, & Chapman (2006). Therefore, risk analysis and management continue to be a major feature of the project management of construction projects in an attempt to deal effectively with uncertainty and unexpected events and to achieve project success. Project Management Institute defines project risk as an uncertain event or condition and that the occurrence has positive or negative effect on at least one project objective, such as time, cost, scope, or quality (PMI, 2008). In addition to this, a number of studies have been conducted to examine factors impacting on project performance in developing countries. Shortage of skills of manpower, poor supervision and poor site management, poor workmanship; client satisfaction, unsuitable leadership; shortage and breakdown of equipment among others contribute to construction delays (Mohammed 2004).

Although, many researchers in the field point out that construction projects have problem with technique and management as well as limitation of funds and time. The critical problem is inability to complete the projects on schedule, low quality work and cost overrun. In general, most of the construction projects experience time overrun and cost overrun during their execution phase. An examination of the record of more than four thousand construction projects (Morris et al, 1998).

Also, construction projects are always unique and risks raise from a number of the different sources (Oyegoke AS, 2012 & Pheng LS et al, 2006). Construction projects are inherently complex and dynamic, and involving multiple feedback processes (Sterman JD, 2012 & Uher TE, Loosemore M, 2004). A lot of participants, individuals and organisations are actively involved in the construction project, and they interests may be positively or negatively affected as a result of the project execution or project completion (Project Management Institute, 2008). Different participants with different experience and skills usually have different expectations and interests (Dey PK & Ogunlana SO, 2004). This naturally creates problems and confusion for even the most experienced project managers and contractors

In light of the above, Ethiopia as a nation is investing its scarce resources with a view of improving the living standard and socio economic condition of its citizens. Also, construction boom, Infrastructure development and housing projects largely cover the landscape of modern Ethiopia and this enable the rise of the country's economic standards has gone beyond the expectation as opined by many investors from worldwide (IMF 2014).

Apart from its rapid economic growth and the current progress in the country, Ethiopia's construction sector has suffered lot of problems as many scholars portray that the underlying problems of the construction sector in Ethiopia is that the sector is not viewed and planned in an integrated manner, but rather, operates with fragmented, unrelated and often conflicting components. The result is wastage, inefficiency, and inability to plan for total development (Tsegaye, G. 2009).

Same to the above, As Somali Regional was characterize by underdevelopment;

limited infrastructure projects in the previous system ruled in the country and by gratifying this gap, the region has large number of government financing projects aimed multipurpose are ongoing so as to address the needs of the people. Despite many efforts puts for the last years, yet the region`s financing projects still suffer heavily in cost and time overruns. Thus, the purpose of this study were to assess the impact of risk factors on project implementation and performance in Somali region: a case of public construction projects

1.2. Statement of Problem

The impact of risk factors has been one of the major concerns of the governments and donors involved with projects today due to the vast of the project implantation and performance became the critical part of the economic development in third world. Recognizing to this construction sector forms an important aspect in the socio economics directions of the emerging economies and most of the developing countries, construction activities are responsible for about 80% of gross equity assets,10% GDP and 50% of wealth invested fixed assets.(jেকে 2004; Ofori,2006). Cognizant to this, public construction projects in Ethiopia are part of the country`s development initiative and allocated majority of the government`s capital budget which estimated an average of 60% according to MoWUD(2006) and 58% is allocated the government`s capital budget in according to the wubishet (2004).

However, many researches portray many gloomy the construction projects in some developing countries by indicating that the time a construction project is completed change orders or variations result in an 8.3 % cost overrun (Al-Momani, A., 1996). According to Michel Gibeault, (2007), change orders typically average between 2-5 % of construction costs, but can easily soar to more than 10% depending up on the degree of changes., Same to this, Ethiopia's construction sector has suffered lot of problems as many scholars portray that the underlying problems of the construction projects sectors in Ethiopia is not viewed and planned in an integrated manner, but rather, operates with fragmented, unrelated and often conflicting components, the result is wastage, inefficiency, and inability to plan for total development (Tsegaye, G. 2009). In addition, In addition, another study reveals that the reason why many projects become unsuccessful is always lays the capacity of the contractor and its level of project management skillfulness. Also, the study results presented that the success of the project is always depends on level of the knowledge of the contractors in project management in Addis Ababa housing project Hiwot (2012) Again, studies undertake Tekalign (2014) and Hiwot (2012) also states that, the role of a project plan is very high in determining the accomplishment of the project targeted indicators. As well, more

than six billion birr of capital budget allocated in projects loss in Ethiopia for last five years project implemented due to the lack of project management, shortage of skill and other related (ETV, 2019)

Likewise, Somali region was characterize by underdevelopment; limited infrastructure projects and shifting this gaps, has large number of financing projects aimed to address the needs of the people. However, the progress made so far towards the realization of region`s goal is still very far from attaining these goals due to the finance limits, implementation and performance gaps, and consistence gaps are some of the challenges to the booming Somali region`s financing project and this may pose a serious threat to the future of regional economic development where majority of the people are pastoral community lived in isolated rural areas..

Although, Ethiopia investment sector strategy has been guided a view of improving the living standard and socio economic condition of its citizens. yet, the empirical researches articulated above shows that risk and uncertainty can potentially have damaging consequences for the construction projects and as far as researcher`s knowledge concern no studies have been directly carried out in generally Somali regional state and in particularly government financing construction project. Therefore, it would be necessary to have further discussion in order to fill the gap. Thus, the purpose of this study were to assess the impact of risk factors on project implementation and performance in Somali region: a case of government financing construction projects

1.3. RESEARCH QUESTIONS

To this end, the following basic research questions were set:

1. What are the risk factors that typically applied government financing construction projects in Somali Region?
2. To what extent the identified risks factors are impact on project implementation and performance of government financing construction projects in Somali region?
3. What is the risk management techniques applied in government financing construction projects in Somali region?

1.4. RESEARCH OBJECTIVES

1.4.1. GENERAL OBJECTIVE OF THE STUDY

The general of objective of this study were to assess the impact of risk factors on project implementation and performance in government financing construction projects

1.4.2. SPECIFIC OBJECTIVE OF THE STUDY

The specific objectives of this study were:

1. To identify risk factors that typically applied government financing construction projects in Somali region
2. To measure the extent the identified risks factors are impact on project implementation and performance in government financing construction projects in Somali region
3. To explore the risk management techniques applied in government financing construction projects in Somali region

1.5. SIGNIFICANCE OF THE STUDY

The significance of this study were to examine the impact of risk factors on project implementation and performance in government financing construction projects

More specifically, this study were significant to:

- It may give public officers and experts, managers of contractors and consultancies with relevant information to be considering when undertaking supervisory activities in construction projects.
- It may also enable development practitioners and policy makers to have better knowledge as to where and how to intervene risk factors to improve the construction project implementation and performance

- More over the empirical analysis carried out in this research was also expect to contribute better solution towards academic gap of risk factors on construction project implementation and performance
- The findings of this study may help for government and other stakeholders to design effective strategies of construction projects implementation and performance on related policies in risk factors `.
- Furthermore, since this study was focus on to identify the wide gap of knowledge about the impact of risk factors. it helps the different public officers and experts, managers of contractors and consultancies, policy makers and researchers to have more pertinent information regarding construction projects implementation and performance in government financing projects

In addition to that the study was intends to provoke other researchers and policy makers plus government officials to carry out further research.

1.6. SCOPE OF THE STUDY

The scope of this study was delimited to assess the impact of risk factors on project implementation and performance in government financing construction projects. The study specifically covers road construction projects, building construction project and dam construction projects financing government. More specifically, the finding of this study was collect the data 150 respondents form public bureau, contractors, and consultancies

1.7. Limitation of the Study

The limitation of this study was lack of reference in the study area, constraints of budget and time. In addition, the other major problem in this study was that the researcher had constantly seek the responsible persons from the heads and experts who were very busy due to meetings and fieldwork; nevertheless, he accomplished his tasks by having interview schedule with them at the end.

1.8. Organization of the Study

This research study has five chapters. The first chapter deals with the background of the study, objectives of the study statement of the problem, significance of the study, delimitation and limitation of the study. Chapter two presents the review of related literature whereas chapter three deals with research design and methodology. Chapter four presents data analysis and interpretation whereas chapter five deals with the conclusion and recommendations made.

1.9. Definition of terms

Project risk- an uncertain event or condition that, if occurs, has a positive or a negative effect on a project objective (PMI 2000).

Risk – an implication of significant uncertainty, which may be upside and downside (Chapman and Ward 2002).

Risk management – a systematic process of identifying, analysing and responding to project risks (PMI 2000).

Risk identification – a process of determining which risks might affect the project and documenting their characteristics (PMI 2000).

Risk assessment – a process of assessing the impact and likelihood of identified risks (PMI 2000).

Risk response – a process of selection and implementation of measures to modify risk (IEC 2001).

Uncertainty – a lack of certainty, involving variability and ambiguity (Chapman and Ward 2002).

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1. Theoretical Literature

Risk is defined as a threat that has an impact on the success of a project, (Barber, 2005). On the other hand, uncertainty is defined as the chance occurrence of an event where the probability is unknown (Smith et al., 2014). Put simply, uncertainty describes a situation being considered by decision makers that has no previous data with which to identify the probability of its occurrence (Flanagan, 1993).

Risk and uncertainty change the actual outcome of an activity from the planned outcome if it is negative. Both have two directions, either a positive or negative deviation on the time frame or the budget of the construction project. Risk and uncertainty are attached to every construction activity and to the construction parties, such as clients, consultants, contractors, sub-contractors and suppliers. There are differences between risks and uncertainty. The word risk originated from France, and began to be used in insurance transactions around 1830 in England. Risk is classified under three categories, namely; known risks, known unknown, and unknown. Known risks include minor changes to the project, known unknown risks are the predicted event either by their probability or by the likely effect, and unknown risks are those events with unknown probability attached to it and unknown likely effect (Smith et al., 2014).

2.1.1. Classification of risk

From the perspective of the PMI (2008), risk classification is defined as a structure that provides an exhaustive process of systematic risk identification to a constant detailing and which match its contribution to the quality and effectiveness to the risk identification process. Depending on the nature of risk, Researchers through the identification process have found and classified into different types. Such classification includes Contractual/legal,

Construction, Political, Management, Physical, Environmental design, Financial, Natural hazards, Safety and Delay risk (Mustafa, 1991; Akincl et al., 1998; Prasanta Kumar Dey, 2002; Ghosh et al.,2004; Wiguna and Scott, 2005; Enshasi and Mosa, 2008; Wang et al., 2010; Razakhani, 2012; Goh et al., 2013 cited in Renuka et al., 2014).

Also, Classifying risk can be done in various ways depending on the purpose. For instance, some risks are generally categorized into internal and external risks, while others are classified in more detail as client risk, financial risk, design risk, contractor risk, material risk, etc. (Raftery, 1999) (El-Sayegh, 2008)

2.1.2. Risk Assessment

In the risk management process (RMP) as the basic principle of understanding and managing risks in a project, the main phases: identification, assessment, analysis, and response should not be seen as the only factors to manage risks, Ropel (2012). All steps in RMP should be included when dealing with risks, in order to efficiently implement the process in the project. There are many variations of RMP available in literature, but most commonly described frameworks consist of those mentioned steps. In some models there is one more step added, and the majority of sources identify it as risk monitoring or review. For the purpose of this report the model of RMP described by Michaela (2011) consist the main critiques like risk identification, analysing, risk reviewing and risk responding

2.1.3. Risk management

Risk management process is a crucial field of project management process in the construction industry. It is the process of risk management where the effects and causes of events which might cause havoc are identified and dealt with. A defined and accurate estimation of risk events is the the aim behind such analysis and to some extent makes the decision making of the process to be specific and definite (Estate Management Manual, 2002). The significance of analyzing risk is not far-fetched as it analyze the various outcomes of any decision and captures all feasible options. Clients more often are interested in the likely price of a building project, but however, projects mostly and consistently experience cost overrun, too most often the more important questions of 'what

if are not asked by clients (Flanagan and Norman, 1993).

2.2. Empirical Literature Review

A number of studies have been carried out to determine the impact of risk factors on project implementation and performance in construction projects concluded as below:

Ward and Chapman (2003) argue that, uncertainties can be seen as the centre of project management concerns and to this respect, the entire project risk management should focus on administering uncertainties, since risk is always associated with threats (or opportunities) of uncertain events to the projects.

Ward and Chapman (2003) showed that the traditional forms of dealing with risk tend to concentrate on variability events and little considers the view of existing ambiguities in projects. For them variability refers to the elements of a project that can assume distinct, though uncertain, values, such as deadlines, costs and quality. Ambiguity is already associated to the lack of clarity of the data, the details, and structures among other factors since there is bias in the behavior of those involved, restricted knowledge and unclear situations.

For the U.S. Department of Defense (DOD, 2006) risk is understood as a measure of future uncertainties about what can affect the objectives of the program within the restrictions established by cost, timeframe and performance.

Several articles (PMI, 2008, Keelling, 2006) have presented risk management as a series of interconnected processes involving specific techniques and tools. The PMI (2008) proposed six risk management processes: risk management planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk responses planning and risk monitoring and control.

Shenhar and Dvir (2010) again refer to uncertainty as something unknown and risk as something that can occur. According to these authors much of the risk in projects comes from uncertainty, but there are other factors that contribute to project risk, for example, the timeframes and deadlines, costs, scarcity of resources, inadequate abilities and competencies, among others.

Cretu et al. (2011) undertake a study of analyzing cost on public works projects in

Europe and North America and the study resulted in occurrence and the severity of cost overruns was significantly high. A round 86% of 258 projects experienced cost overrun which resulted in the actual cost being 28% higher than the estimated cost. The major factors responsible in cost overrunning are inappropriate risk analysis. This is where during the early stage of the project, the scope of work was poorly described and identified at the time of the developing the project budget, or affected by political pressure where the project was delayed on purpose to serve political agendas

Geraldine John Kikwasi (2012) carried out a research to assess causes and effects and disruptions in construction projects in Tanzania. Two sampling techniques were used to select respondents namely: purposive and random sampling. Literature review, questionnaires and interviews techniques were used to collect data for the study and findings reveal that the main causes of delay and disruptions are: design changes, delays in payment to contractors, information delays, funding problems, poor project management, compensation issues and disagreement on the valuation of work done. On the other hand, time overrun, cost overrun, negative social impact, idling resources and disputes are the main effects of delays and disruptions.

Ghulam Abbas Niazai and Kassim Gidado (2012) held comprehensive survey to identify the critical factors that cause construction delays in Afghanistan and their findings show that the main critical factors that cause construction delays are: security, corruption, poor qualification of the contractor's technical staff, payment delays by clients and poor site management and supervision by contractor.

Aftab Hameed Memon (2014) did study for identifying the significant factors causing time overrun in Malaysian construction industry. Investigation through survey was carried out in central and southern parts of Malaysia among the respondents from three categories i.e. client, consultant and contractors. The feedback was received from 75 respondents against 300 companies contacted. The feedback was analysed statistically which revealed that cash flow and financial difficulties faced by contractor, poor site management and supervision, incompetent subcontractor, shortage of workers and financial difficulties of the owner are major contributors of time overrun.

He recommends that the problem of time overrun can be controlled through proper planning of work, committed leadership and management, and effective communication system.

K. L. Ravisankar (2014) outlined 50 factors for delay in Indian construction industry. Delay factors are assembled into seventeen groups. He indicated that the most important causes are: Shortage of unskilled & skilled labour, Design changes by owner or his agent during construction, Fluctuation of prices, High waiting time for availability of work teams; Rework due to errors. These are all the top five delay factors which affect construction project.

Altaher Mohamed Eida et Al (2015), seeks to identify the risk factors that affect the performance of construction projects, using appropriate tools and technique and to develop a risk management framework. This study investigates, categorizes and evaluates the risk and develops a risk management policies and guidelines to the company contractor which can be adopted at the construction projects site for better and risk free construction work.

2.3. Conceptual Framework Of This Study

The conceptual frame of the study is presented the assumption of the researcher may think it's the impact risk factors on project implementation and performance in Somali regional state: a case of government financing construction projects in Somali region

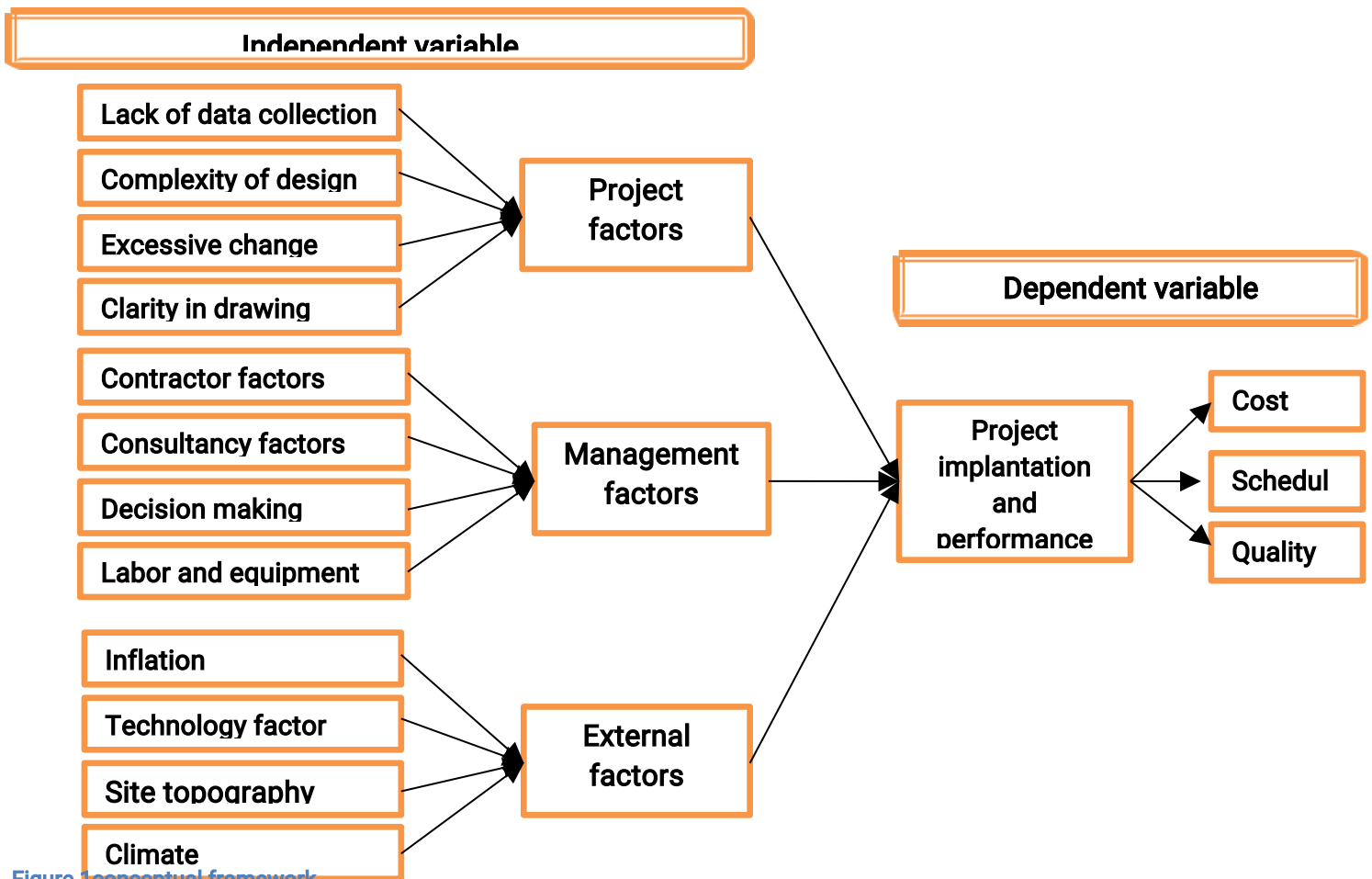


Figure 1 conceptual framework

Source: the conceptual framework of this study is develop by research

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1. Description of the Study Area

3.1.1. Description of the Somali region state

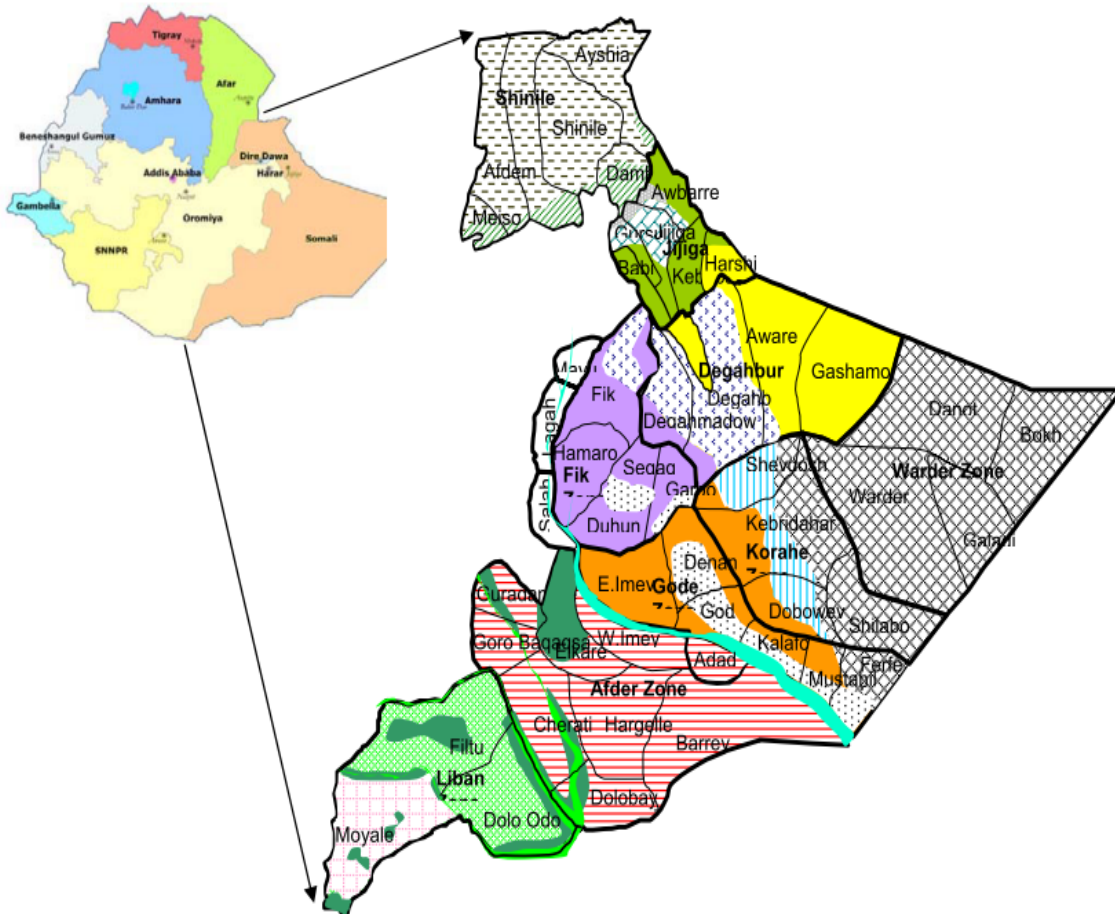


chart 1 map of Somali region

Ethiopia Somali regional state is the second largest in the country after Oromia and covers a total area of 350s,000 km. It is located in the east and south east of the country and lies between 4and11 degrees north latitude and 40 and 48 degrees east longitude. The region has 11 administrative zones consisting of 93 districts, and six city administrations which are further divided into 1224 Kebeles. It shares borders with Somalia to the east and southeast, Kenya to the south and Djibouti to the north. To the northwest and west, it borders with Afar and Oromia regions respectively.

3.1.2. Climate of the region

The climate of the region is arid in most parts of the region and weather is therefore hot in most parts of the year, with mean temperatures ranging 0° from 18 to 45C .Temperatures are cooler in areas of high altitudes like Jigjiga zone and parts of Afder zone (e.g. Elkare) and hotter in areas around the main rivers of the region. Annual rainfall ranges from 150 mm in the low lying areas of the region to 660 mm received in high altitude areas.

3.1.3. Population of the region

The population of the region is estimated at 4.7 million out of which 44 percent are females and the remaining 56 percent are males. The average household size in the region is 6.6. The urban population is estimated to be 14 percent of the total population. Average population density is calculated to be 13 persons per square km, with major variations among the woredas of the region. Population density is highest in historically crop-growing areas like Jigjiga and the revering areas of Godey, Afder and Liban zones.

3.1.4. Livelihood dependence of the population

The vast majority of the population of the region is pastoralists and agro-pastoralists who are dependent on livestock and farming for their survival. The region has 17 rural livelihood zones, generically classified as pastoral, agro-pastoral, reverie and sedentary farming. The major sources of income include livestock and livestock product sales, crop sales, firewood and charcoal sales, petty trade and remittance from western living Diasporas of the region

3.2. Research Design

Actually, the study was concentrate on the impact of risk factors on project implementation and performance in Somali region: a case of government financing construction projects. The study was employing a descriptive survey method. Since, this method was appropriate for generating adequate amount of data from a relatively large number of respondents (Creswell, 2003). Also, in this section were discussed data source, sampling techniques, data gathering tools. In addition to this, it were describe data analysis and interpretation.

3.3. Data Source

The data generated for the study were comprised of primary sources (field survey) and secondary (desk survey)

3.3.1. Primary source

Primary source of data collection involves use of questionnaires and schedules of interviews were apply to obtaining, reinforcing and cross checking obtained data in the report. Primary sources were including respondents from road authority, respondents from design enterprise, respondents from liyuu enterprise, respondents from contractors and consultancy.

3.3.2. Secondary source

Secondary sources of this were collected from the documents of the selected government financing projects.

3.4. Population and sampling technique

The researcher was chosen road construction projects and bridge building construction project as study area. Concerning on sampling technique public bureau, contractors, and consultancies that are directly involved were selected using purposive sampling technique based on geographical sites, level of their capacity and experience in projects involvements. Similarity **57 % respondents from public bureau** (respondents from road authority, respondents from design enterprise and respondents from liyuu enterprise) **33% from contractors** (50 contractors out of 200 were selected from contractors based on number of projects implemented or ongoing projects) and **10% respondents from consultancies** were selected using purposive sampling techniques. Because, their numbers are small and no need selecting one from other and also in reference to their responsibilities to construction projects activities due to their jurisdiction. Since they have direct relationship with the issues and can provide their insight and share experiences

The overall a total number of 150 respondents would participated in the study as

the below table 1 presented

Table 1: sample selected respondents of the study

Table 2 selected sample respondents

Subject	Population	Sample	Percentage	Sampling technique
Public bureau	85	85	57%	Purposively
Big Contractors	50	50	33%	Purposively
Consultancy	15	15	10%	Purposively
Total	150	150	100%	Purposively

3.5. Data gathering tools

The study was employing questionnaires, interview, observation and focus group discussion as instruments of data collection for this study.

3.5.1. Questionnaires

Questionnaires were the main instruments to collect information from different groups (public bureau, regional contractors and regional consultancy). The questionnaires contain mainly close-ended and some open ended items.

Questionnaires were the main instruments to collect information from the selected respondents' form public bureau, regional contractors and regional consultancy. The questionnaire contains mainly closed-ended and open-ended questions. Depending on the type of question items, choices and rating were used in the questionnaire..

3.5.2. Semi-structured interview

Semi-structured interview were utilize to generate information from projects mangers, supervisors, coordinators and Facilitators, The researcher were sought a permit from selected government financing construction projects managers, supervisors, and coordinators in charge of the sites. The sites were personally visited to create rapport with the respondents and set date for the administration of the instruments. The researcher administered the research instruments and collected the response personally

3.5.3. Observation checklist

Observation checklists were also employing to observe how respondents implements as well as to see the overall project performance.

3.6. Method of data analysis

The researcher was employ SPSS software analyzing data. Descriptive statistics such as percentages and means were used to describe the data by the help of tables, and figures. Also, the relative importance Index was also used to assess risk assessment and management on project implementation and performance. It were used to rank the identified risk factors during the project implantation and performance.

Researcher was using SPPs software version 16.0 analyzing data and the importance index (RII) were analyzing to determine the risk factors. The index was computed in adnan et al (2007) as:

$$\text{Importance Index} = \frac{\sum (1n_1 + 2n_2 + 3n_3 + 4n_4 + 5n_5)}{5(n_1 + n_2 + n_3 + n_4 + n_5)}$$

Where:

n1 - number of respondents who answered "very insignificant"

n2 - number of respondents who answered "insignificant"

n3 - number of respondents who answered "neutral"

n4- number of respondents who answered "significant"

n5- number of respondents who answered "very significant"

4. CHAPTER FOUR: DATA ANALYZING AND INTERPRETATION

This chapter presents the findings from data collected through the use of questionnaires for the respondents from engineers, site managers, project managers, heads of organization and deputy head, directors in sampled clients, contracts and consultants. Data were technically analyzed forthwith, summaries recorded in the tables and graphs before the subsequent data was interpreted. The chapter begins by presenting the demographic characteristics of the respondents. This followed by the presentation of the views of the respondents on the impact of risk factors on project implementation and performance in Somali region.

The information gathered has been analyzing using to presented tables, graphs, and charts and discussed as per the objectives and research questions of the study. The analysis was based on the importance index (RII) to determine the impact of risk assessment factors

4.1. DEMOGRAPHIC INFORMATION

This section presents a summary of the respondent's profile that was collected data. The characteristics were included gender, age, marital status, education level and occupation among others.

4.1.1. Gender profile

Respondents were asked to indicate their gender profile and the finding of this study shows the below chart2

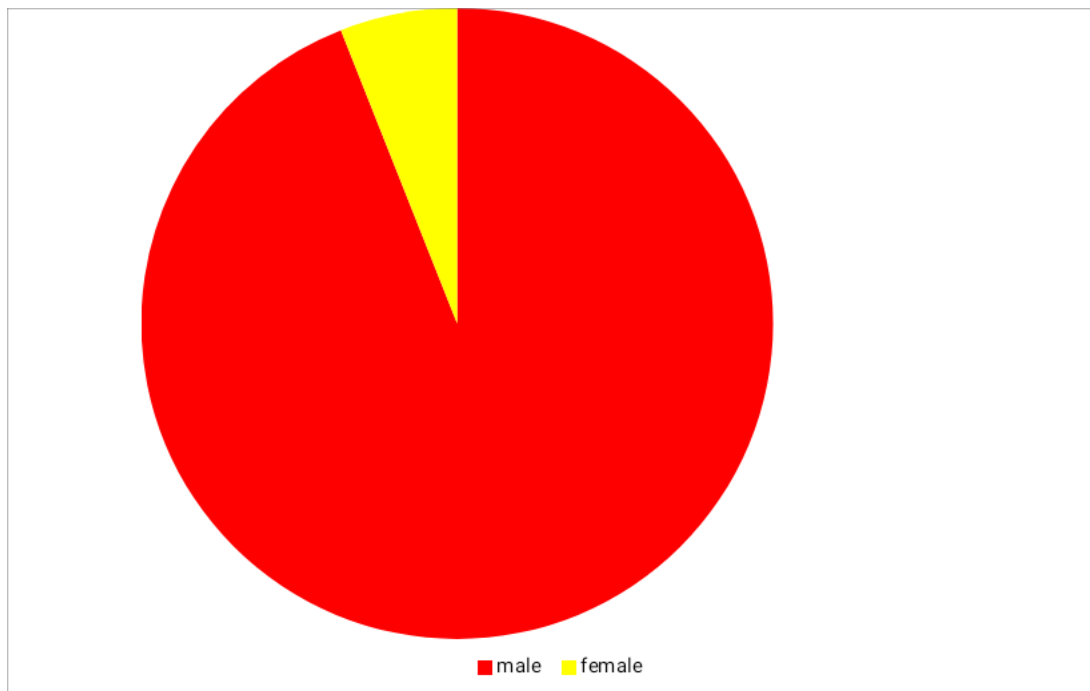


Chart 2 gender respondents

As the above chart2 presented, Participation of both male and female respondents in this study ensured that different views across gender are represented. The researcher included the gender of the respondents' analysis in order to establish the magnitude to which each of the sexes affect the government financing construction projects implementation and performance in Somali region. The finding of this study shows that the majority of the respondents are dominated by male as (94%) , indicating that more males are involved in the construction projects as compared to females (6%). This illustrate that gender imbalance exist in construction projects implementation and performance in Somali region. Thus, the findings of this study suggest that female recruitments must be encourage by means of balancing gender equity in construction

projects

4.1.2. Respondents Age Category

Respondents were asked to indicate age category and their response were present as below chart shows

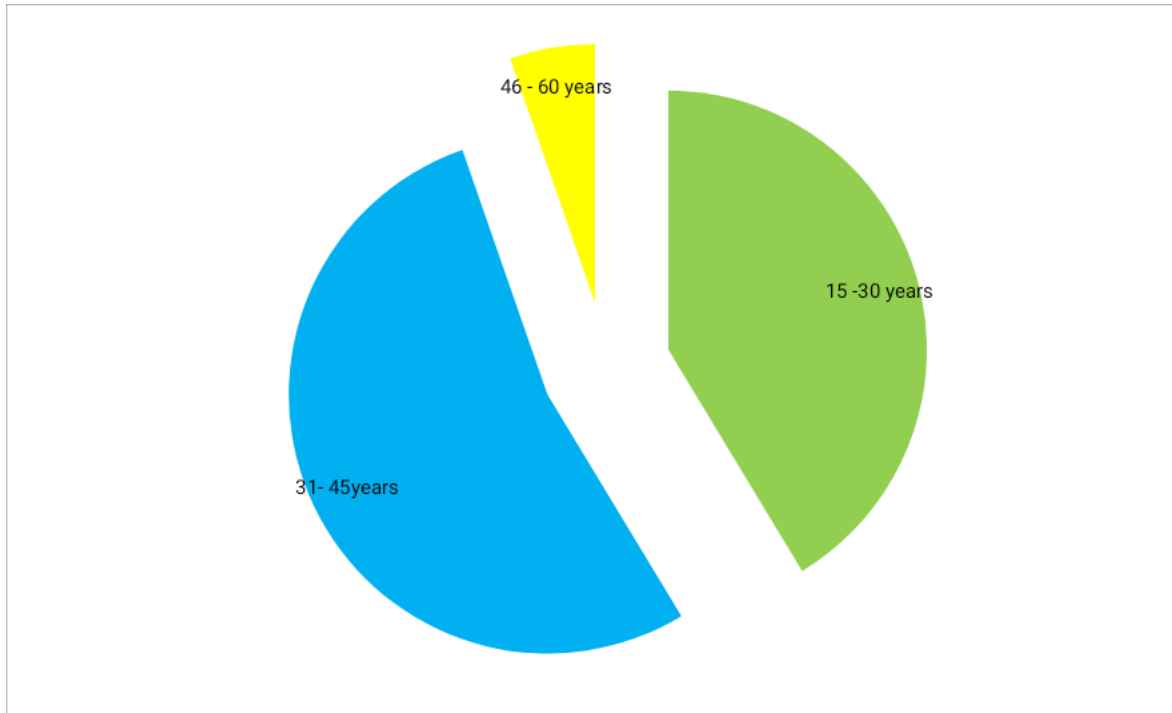


chart 3 age category

As the above charts shows, the respondents' were asked to indicate their age category in accordance with one of the four categories as shown in the above chart, the data obtained from the questionnaire reveals that 62 respondents between 15 to 30 years of age representing 42%, 80 respondents, each between 31-45 years of age representing 50% formed the majority and 8 respondents each between 46-60 years of age representing 8% respectively. The findings of this study shows that majority of the respondents were young and can bring hope to change the future projects in the region and as well as the country if the government give mire focus to improve their skill

4.1.3. Respondents level of education

Respondents were asked to indicate their level of education as the result of the finding of this study shows the below chart

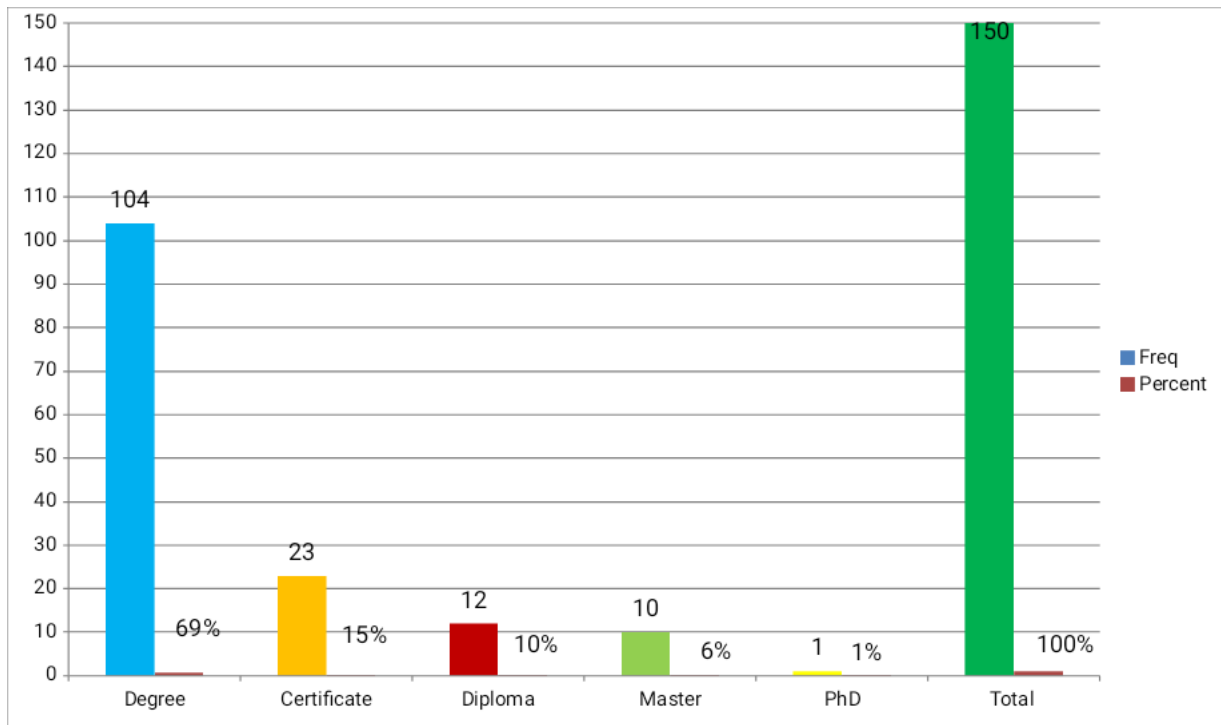


Figure 2 level of education

As the above figure 2 shows, Respondents were asked to indicate their level of education and the findings of this study show that majority 104(69%) of the respondents holds bachelor degree, where 23(15%) and 12(10%) of the respondents are certificate and diploma holder. Hence, 10(6%) and 1(1%) of the respondents are master and PhD holder. The finding of this study shows that there is a professional qualification gap for projects' implementation and performance since majority of them are 52% degree in engineering department and below one year experience, this may affect the objectives of the project implementation and performance. Since project implementation requires different skills and qualification is one of the crucial areas that construction projects can engage and challenge the impact of risk factors on project implementation and performance. To this effect, the finding of the study suggested that

there is a strong requirement for project administration need to recruit different professions in order to improve effectiveness of construction projects implementation and performance.

4.1.4. Respondents Experience

Respondents were asked to indicate level of experience and their response were present as below chart shows

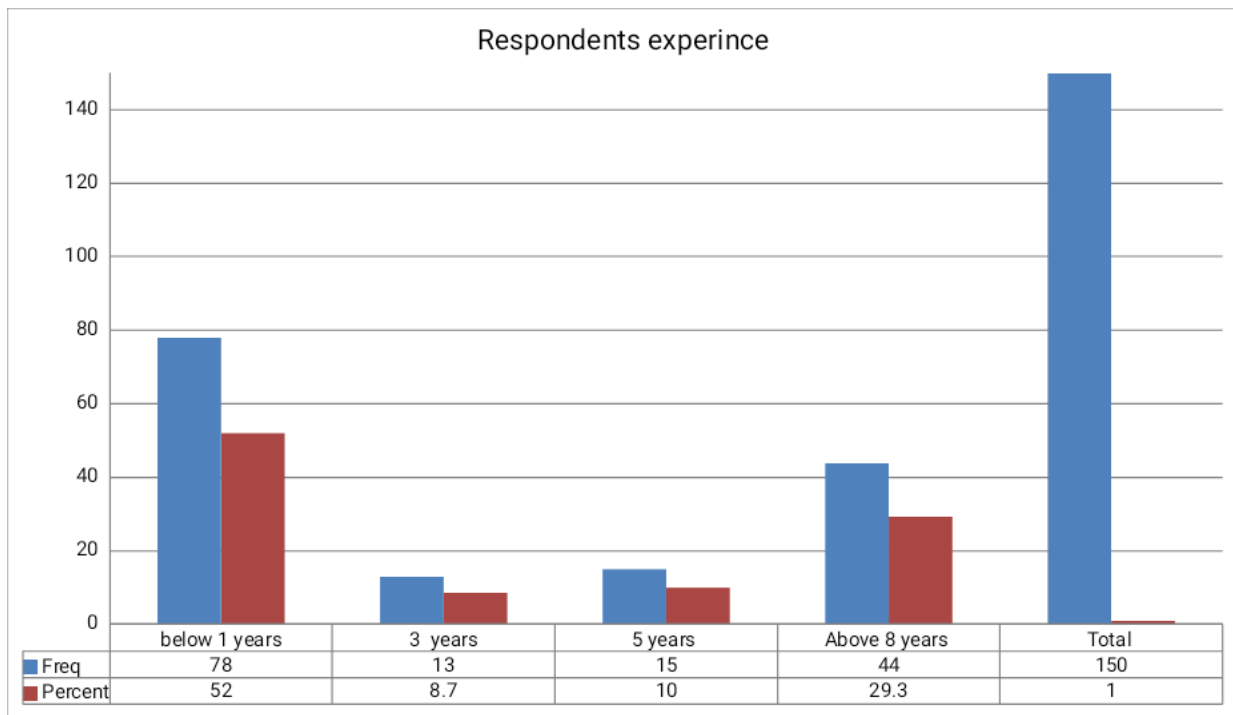


Figure 3 level of experience

In addition, the above figure3 recap the finding of this study shows that the majority of the respondents are dominate by below one year’s experience that represented as a 78(52 %). These were followed eight years experience respondents represented 44(29%).years experience and three and five years experience who formed the least in years of experience as represented 13(8.7) and 15(15%). The findings of this study shows that respondents had experience to explore and one to escalate to a position of leadership and facilitators in the impact of risk factors on project implementation and

performance

4.2. Overview study area

4.2.1. Overview of Study organizational profile

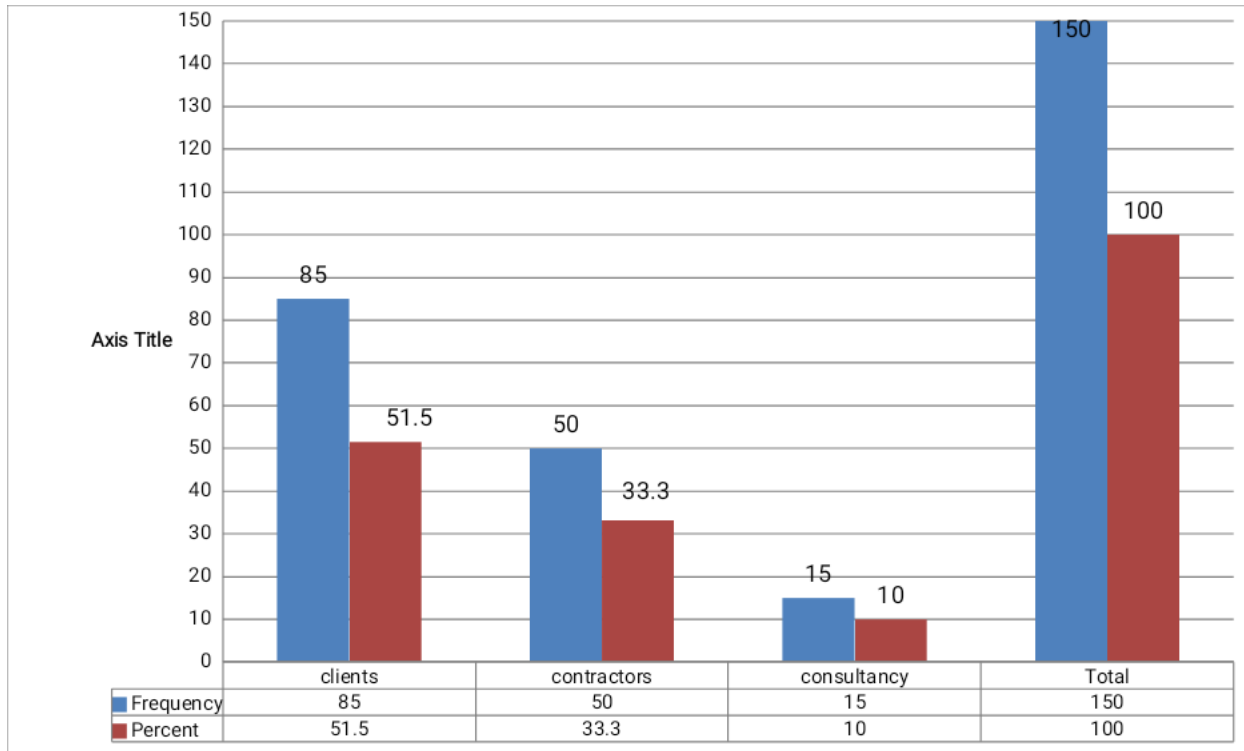


Figure 5 respondents organization

As presented above figure5, the situation of the participation of study classified as the result of the above figure shows are respondents from clients were formed as a majority which presented 85(51.5%) where from contractors respondents are 50(33.3%) hence, from consultants respondents are 15(10%). The finding of this study shows that the total response rate is sufficient and safe to analyze and interpret the data.

4.2.2. Position of the respondents

Respondents were asked to indicate their position and their response were present as below figure 4 shows

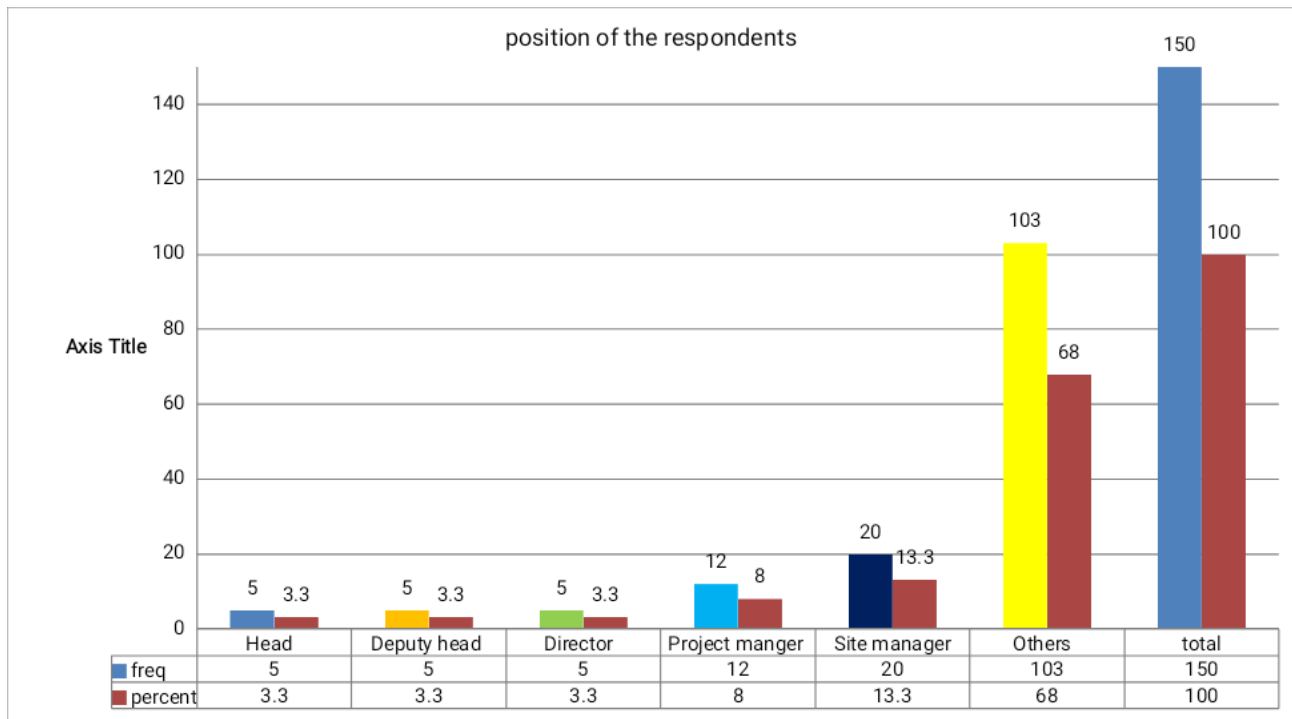


Figure 4 respondents position

As the above figure 4 presented, the various job positions held by the respondents who participated in the questionnaire. The results in the figure reveal that respondents from engineers formed the majority with 103, representing 68% and 20 respondents from the site managers representing 13.3%, while 12 project managers are represent 8%. Also, 5 from heads of organization and deputy heads representing 3.3%, and 3.3%, hence, 5 directors representing 3.3%. These results show that the study were targeted to diagnose various sector and/or position settings which lead to the impact of risk factors on project implementation and performance in Somali region particularly government financing construction projects

4.2.3. Study participants` experience on projects implementation

The study investigates to know highest number of project implemented respondents from clients, contractors and consultants as the below figure 6 presented

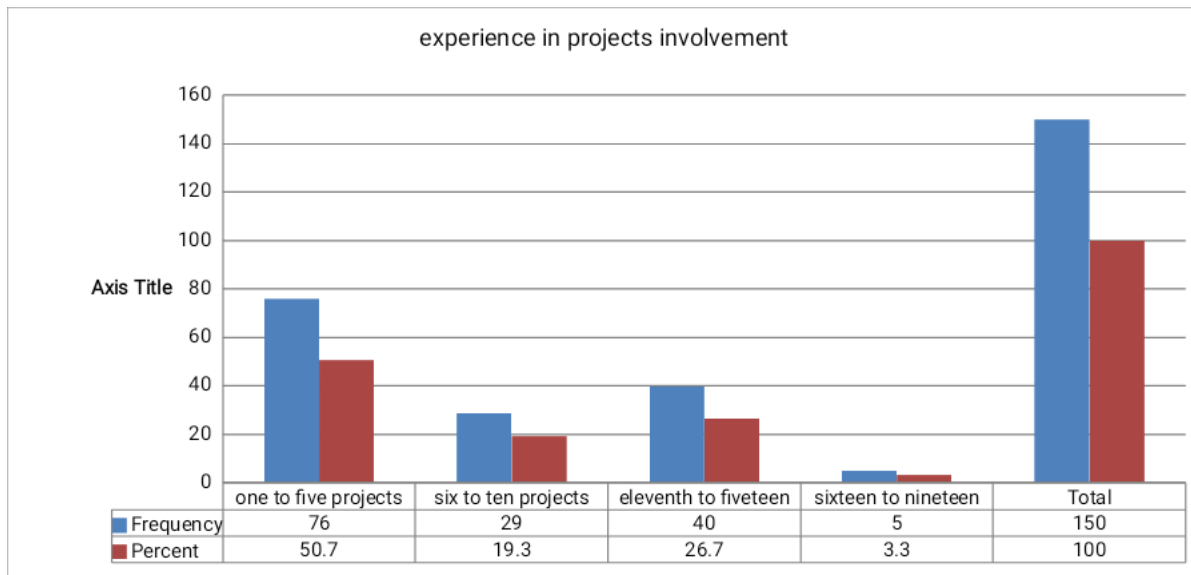


Figure 6 experience in project implementation

The above figure 6 shows that highest number of project implemented by the respondents as the above data revealed and the finding of this study shows that majority of the respondent 76 represents 50% of the respondent have an experience related practical projects implementation one to five projects, while 29 and 19 respondents represents 26.7%and 19.3% of the respondent have an experience related practical implement eleventh to fifteen and six to ten. Hence, 5respondents represents 3.3% of the respondent have an experience related practical projects implementation for more than sixteen to nineteen. To this affect, the findings of this study shows that majority of the respondents have an experience and can gave confidentiality to provide practical experience on risk factors exist on construction projects in Somali regional state specially public construction projects financing governments

4.3. Impact of Risk Factors on Project Implementation and Performance

4.3.1. Identification of Risk factors exist on construction projects

Clients, contractors and consultants were also asked to identify personally risk factors that typically apply government financing construction projects in Somali Region. As it was present below 3 table

Table 3 risk factors identification

Risk factors	CLIENTS			CONTRACTORS			CONSULTANCY		
	Yes	No	percent	Yes	No	percent	Yes	No	percent
poor safety measures cause damage	85		100%	50	0	100%	15		100%
delivering of defective materials	75	10	88%	42	8	84 %	12	3	80%
Lack of labor material and equipment	81	4	.95%	48	2	96%	13	2	87%
Error design	85		100 %	50	0	100%	15		100%
Not coordinated design	81	4	95 %	25	25	50%	14	1	93%
Inaccurate quantities	80	4	94%	46	4	92%	15		100%
Lack of consistency bill and quantity	70	16	82%	25	25	50%	13	2	87%
Rush design	85		100%	50	100	100%	15		100%
Awarding the design to unqualified designers	85		100%	50		100%	15		100%
Lack of manpower	83	3	98%	47	3	94%	14	1	93%
High competition in bids	85		100%	47	3	94%	15		100%
Inaccurate project activity	80	4	94%	25	25	50%	15		100%
Poor communication	81	5	95%	40	10	80%	14	1	93%
Cost allocation	85		100%	50		100%	15		100%

Undefined scope of working	81	5	95%	47	3	94%	14	1	93%
Delayed payment	77	8	90%	50		100%	13	2	87%
Lack of management cash flow	84	1	99%	40	10	80%	13	2	87%
Rush bidding	85		100%	46	4	92%	15		100%
Gaps in Implementation and the specifications	80	5	94%	25	25	50%	13	2	87%
Undocumented change orders	80	3	85%	47	3	94%	13	2	100%
Lower quality of work	85		100%	50		100%	15		100%
Changes in design	85		100%	40	10	80%	15	1	100%
Mismatch actual and executed	80	5	94%	48	2	96%	14	1	93%
Ambiguity planning	81	4	95%	47	3	94%	14	1	93%
Resource management	84		99%	40	10	80%	14	1	93%
Change in administration	85		100%	47	3	94%	15		100%
Information unavailability	83	2	98%	48	2	96%	14	1	93%

As the above table 3 presented, the views of the respondents about personal identification on risk factors that typically applied government financing construction projects, shows that majority 85 respondents from clients representing 100%, 50 respondents from contractors representing 100% and 15 respondents from consultants representing 100% respondents react yes which means that Poor Safety Measures Cause Damage, Error Design, Rush Design, Awarding the Design to Unqualified Designers, High Competition Bids, Cost Allocation, Rush Bidding, Lower Quality of Work, Changes in Design, Change in Management are key identification of personally view on the risk factors that typically applied government financing construction. Hence, respondents from contractors only react yes risk factor related a delayed payment as 100% which indicating that as a individual contractors sees delayed payments as a first class risk factors. While, respondents from the clients and consultancies rated as third class risk factors 90% and 87%, the finding of this study indicate that individual risk factors identification shows Poor Safety Measures Cause

Damage, Error Design, Rush Design, Awarding the Design to Unqualified Designers, High Competition Bids, Cost Allocation, Rush Bidding, Lower Quality of Work, Changes in Design, Change in Management are rated as a first class risk factors that bearing individual risk factors identification during the impact of risk factors on construction project implementation and performance in Somali region

In addition, the findings of this study shows respondents were asked to indicate Yes or No to their personal view on identification of risk factors that typically applied government financing construction projects as the above table shows and the findings revealed that from the clients respondents represent 81 (95%), from the contractors respondents represent 46 (95%) and from the consultants respondents represent 14 (93%) reacts yes which indicates that they rate second class risk factors that typically applied government financing construction projects in Somali region are uncoordinated design, Ambiguity planning, poor communication, lack of management cash flow, Resource management and information availability. The findings of this study shows that individual views on risk factors identification rated as a second class risk factors that typically applied government financing construction projects in Somali region are uncoordinated design, Ambiguity planning, poor communication, lack of management cash flow, Resource management and information availability

In addition, respondents from clients, contractors and consultants in this study were asked personally to identify risk factors and the findings on their personal view on identification of risk factors that typically applied government financing construction projects revealed that from the clients respondents represent 70-80 (82%-94%), from the contractors respondents represent 25-46 (50%-93%) and from the consultants respondents represent 12 (93%) reacts yes which indicates that they rated third class risk factors that typically applied government financing construction projects in Somali region are delivering of defective materials, inaccurate quantities, lack of consistency bill and quantity, delayed payment, gaps in Implementation and the specifications, mismatch actual and executed. The findings of this study shows that individual views

on risk factors identification as a third class risk factors that typically applied government financing construction projects in Somali region are delivering of defective materials, inaccurate quantities, lack of consistency bill and quantity, delayed payment, gaps in Implementation and the specifications, mismatch actual and executed

4.3.2. Effect of Risk factors on construction projects

4.3.2.1. Coding risk factors

The study was examining the impact of risk factors on project implementation and performance in construction projects. To this effect, in order to reach the goal of this study was used to analyse relative important index in twenty seven risk factors which were coded with reference letters to simplify the presentation and reading of the results as the below table 4 shows the coding of the risk factors (RF)

Table 4 coding risk factors

	Code	Risk factors
1	PRF1	Poor safety method cause chance of risk occurrence
2	PRF2	Supplies unspecified materials
3	PRF3	Varied labor and equipment
4	DRF1	Inaccurate design
5	DRF2	uncoordinated design
6	DRF3	Inaccurate quantities
7	DRF4	Ambiguity of bill of quantity and drawing
8	DRF5	Rush design
9	DRF6	Lack of expert designers
10	LRF1	Unavailable labor, materials and equipment
11	LRF2	Unclear scope of the work
12	LRF3	High competition in bids
13	LRF4	Inaccurate project program's activity
14	FRF1	Cost estimation
15	FRF2	Delayed payments on contract
16	FRF3	Financial failure of the contractor
17	FRF4	Unmanaged cash flow
18	CRF1	Rush bidding
19	CRF2	Gap between the Implementation and the specifications in draw
20	CRF3	Undocumented change order
21	CRF4	Low quality of work

22	CRF5	Frequent Changes in design
23	CRF6	Mismatch in actual and executed performance
24	MRF1	Ambiguous planning due to project complexity
25	MRF2	Resource management
26	MRF3	Changes in management ways
27	MRF4	Lack of information

4.3.2.2. Overview of risk factors on construction projects

In this section respondents were asked to rate the extent mitigation the impact of risks factors on project implementation and performance in government financing construction projects in Somali region and measure the impact of risks factors by using RII as it presented the below table

Table 5 impact of risk factors

CLIENTS				CONTRACTORS				CONSULTANCY			
ID	RII	Rank	Percent	ID	RII	Rank	Percent	ID	RII	Rank	Percent
1	0.52235 3	1	100.00%	1	0.96	1	96.10%	1	0.99	1	100.00%
9	0.52	2	96.10%	24	0.96	1	96.10%	9	0.97	2	96.10%
14	0.51764 7	3	92.30%	11	0.95	3	92.30%	14	0.96	3	92.30%
4	0.51058 8	4	84.60%	9	0.94	4	88.40%	4	0.95	4	84.60%
18	0.51058 8	4	84.60%	14	0.93	5	84.60%	18	0.95	4	84.60%
22	0.50823 5	6	76.90%	4	0.92	6	65.30%	22	0.93	6	76.90%
26	0.50823 5	6	76.90%	18	0.92	6	65.30%	26	0.93	6	76.90%

12	0.49647 1	8	69.20%	20	0.92	6	65.30%	12	0.92	8	73.00%
27	0.49647 1	8	69.20%	22	0.92	6	65.30%	8	0.91	9	69.20%
10	0.49411 8	10	61.50%	26	0.92	6	65.30%	10	0.89	10	61.50%
21	0.49411 8	10	61.50%	8	0.91	11	57.60%	23	0.89	10	61.50%
6	0.49176 5	12	50.00%	12	0.91	11	57.60%	20	0.88	12	50.00%
8	0.49176 5	12	50.00%	15	0.90	13	50.00%	24	0.88	12	50.00%
24	0.49176 5	12	50.00%	16	0.90	13	50.00%	25	0.88	12	50.00%
11	0.48941 2	15	46.10%	17	0.90	15	46.10%	7	0.87	15	42.30%
3	0.48235 3	16	34.60%	7	0.89	16	34.60%	13	0.87	15	42.30%
17	0.48235 3	16	34.60%	13	0.89	16	34.60%	5	0.84	17	38.40%
20	0.48235 3	16	34.60%	25	0.89	16	34.60%	11	0.81	18	34.60%
23	0.47764 7	19	30.70%	21	0.85	19	30.70%	3	0.76	19	23.00%
15	0.47058 8	20	26.90%	3	0.83	20	26.90%	15	0.76	19	23.00%
13	0.46352 9	21	19.20%	2	0.81	21	23.00%	21	0.76	19	23.00%

19	0.46352 9	21	19.20%	23	0.79	22	19.20%	16	0.75	22	19.20%
2	0.45647 1	23	11.50%	10	0.78	23	15.30%	17	0.73	23	15.30%
25	0.45647 1	23	11.50%	19	0.76	24	11.50%	6	0.69	24	11.50%
5	0.45411 8	25	7.60%	27	0.73	25	7.60%	2	0.65	25	7.60%
7	0.45176 5	26	3.80%	6	0.56	26	3.80%	27	0.56	26	3.80%
16	0.41647 1	27	0.00%	5	0.34	27	0.00%	19	0.48	27	0.00%

As the above table 5 presented, the respondents were asked to rate the extent risk factors that impact on project implementation and performance and the views of the respondents were utilized to analysis relative important index based on hieghst and lowest impact of risk factors that typically applied government financing construction projects and their findings of shows that the highest risk factor from clients respondents with an RII score of 0.522353%, with percent 100% and lowest score with an RII score of 0.451765 with percent 3.80% are **PRF1**: Poor safety method cause chance of risk occurrence and **DRF4**:Lack of consistency between bill of quantities, drawings also from the contractors respondents 0.96% with an RII score of 0.96 with percent 96.10% and lowest score with an RII score of 0.56 with percent 3.80% are **PRF1**: Poor safety method cause chance of risk occurrence, **MRF1**:Ambiguous planning due to project complexity and **DRF3**:Inaccurate quantities where respondents from the consultancies with an RII score of 0.99% with percent 100% and lowest score with an RII score of 0.56 with percent 3.80%, are **PRF1**: Poor safety method cause chance of risk occurrence and **MRF4**: Information unavailability as a below charts shows

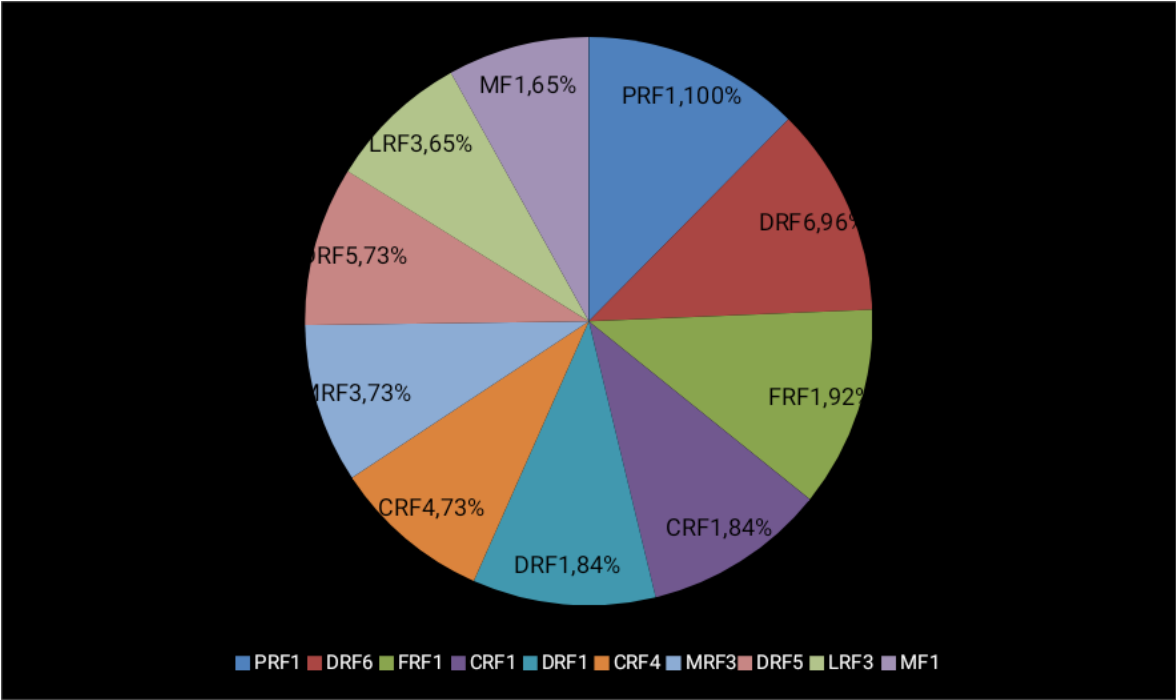


Chart 4 top ten risk factors

4.3.2.3. The impact of risk factors on construction projects

The finding of this study shows that the top ten foremost risk factors (RF) that have a pessimistic impact on construction projects implementation and performance in Somali region as below figure show:

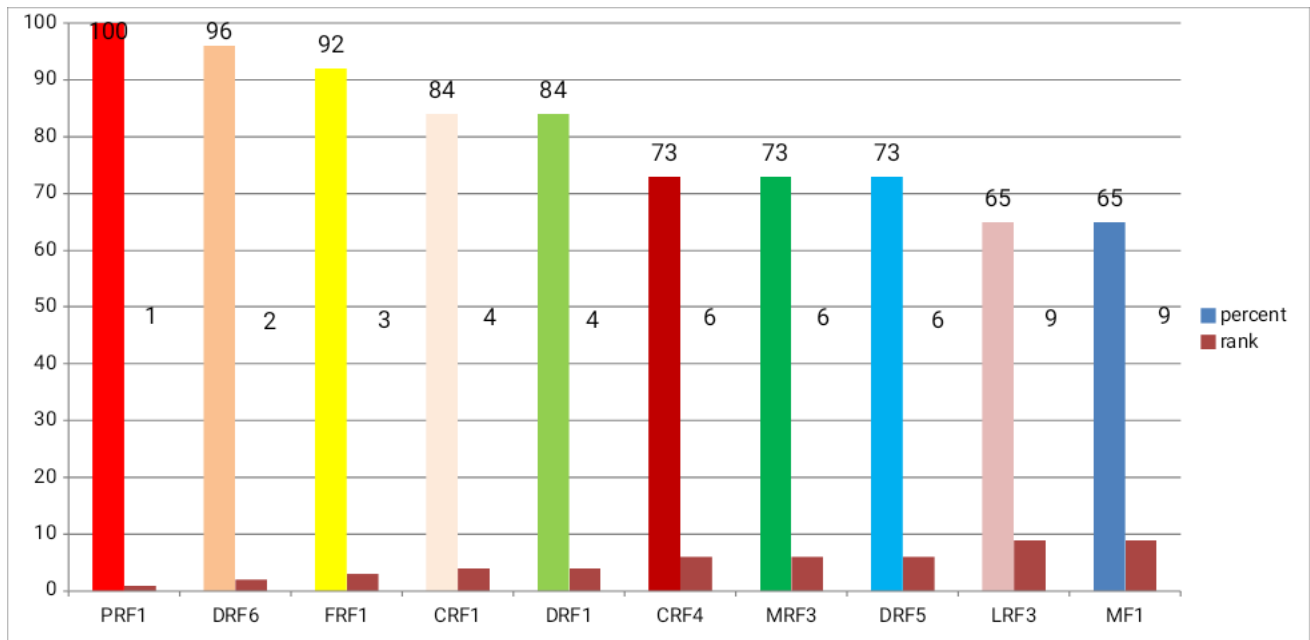


Figure 7: the impact of top ten risk factors on project

PRF1: Poor safety method cause chance of risk occurrence,

DRF6: Lack of expert designers,

FRF1: Cost estimation

CRF1: Rush bidding

DRF1: Inaccurate design

CRF4: Frequent Changes in design

MRF3: Changes in management ways

DRF5: Rush design

LRF3: High competition in bids

MF1: lack of information

LRF1: unavailable labor, materials and equipment

As the above figure 7 shows the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 100%, from the contractors reacts majority 96% and consultants respondents 100% reveals that they strongly agree the negative impact of poor safety method cause chance of risk occurrence related on physical risk factors on, during construction project by rating, the score of RII between 0.522353 from clients, 0.96 from contractors and from consultants 0.99. The findings of this study shows that the highest score indicates a highest negative impact on construction project implementation and performance the findings of this study concluded that poor safety method cause chance of risk occurrence that has highest negative impact on construction project implementation and performance in government financing projects in Somali region

As the above figure 7 shows the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 96%, from the and consultants respondents 97% reveals that they strongly agree the negative impact of Lack of expert designers related design risk factor on construction project implementation and performance are rating the score of RII between 0.52 from clients representing 96% and 0.97 from consultants represents 96.10% ranked the second risk factor the has negative impact on project implementation and performance. The findings of this study shows that Lack of expert designers related design risk factor are the second highest score rated which indicates it's the second highest risk factor that has negative impact on construction project implementation and performance in government financing construction projects in Somali region

As the above figure 7 shows the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 96%, and consultants respondents 97% reveals that they strongly agree the negative impact of project cost estimation related financial risk factors on project success are rating the score of RII between 0.517647 from clients representing 92.30% and 0.96 from consultants represents 92.30% ranked the third risk factor the has negative impact on project implementation and performance. The findings of this study shows that project

cost estimation related financial risk factor are the third highest score rated which indicates it's the third highest risk factor that has negative impact on construction project implementation and performance in government financing construction projects in Somali region

As the above figure 7 shows the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 84.60% and from consultants respondents 93% reveals that they strongly agree the negative impact of project cost estimation related financial risk factors on project success are rating the score of RII between 0.510588 from clients representing 84.60% and 0.95 from consultants represents 84.60% ranked the third risk factor the has negative impact on project implementation and performance. The findings of this study shows that Inaccurate design related on design risk factor and rush bidding related on construction risk factor are the fourth highest score rated which indicates it's the fourth highest risk factor that has negative impact on project implementation and performance in government financing construction projects in Somali region

As the above figure 7 shows the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 84.60% and from consultants respondents 93% reveals that they strongly agree the negative impact of Changes in management ways related management risk factor and frequent Changes in design related on construction risk factor are rating the score of RII between 0.508235 from clients representing 76.90% and 0.93 from consultants represents 76.90% ranked the six risk factor that has negative impact on project implementation and performance. The findings of this study show that Changes in management ways related management risk factor and frequent Changes in design related on construction risk factor are the six highest score rated which indicates it's the fourth highest risk factor that has negative impact on project implementation and performance in government financing construction projects in Somali region

As the above figure 7 shows the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 67.60%

and from consultants respondents 93% reveals that they strongly agree the negative impact lack of information related management risk factor and high bids related on logistic risk factor are rating the score of RII between 0.496471 from clients representing 69.20% and 0.92 from consultants represents 73% ranked the eight risk factor that has negative impact on project implementation and performance. The findings of these study shows that lack of information related management risk factor and high bids related on logistic risk factor are the eight highest score rated which indicates its highest risk factor that has negative impact on project implementation and performance in government financing construction projects in Somali region

As the above figure 7 shows the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 61.50% and from consultants respondents 61.50% reveals that they strongly agree the negative impact of unavailable labor, materials and equipment related on logistic risk factor are rating the score of RII between 0.494118 from clients representing 61.50% and 0.89 from consultants represents 61.50% and ranked the tent risk factor that has negative impact on project implementation and performance. The findings of these study shows that unavailable labor, materials and equipment related on logistic risk factor are number ten of the leading top ten leading factors that has highest score rated which indicates its risk factor number ten highest risk factor that has negative impact on project implementation and performance in government financing construction projects in Somali region

4.4. Risk management technique applied and practice on construction projects

4.4.1. Prevention method

In this section respondents were asked to rate the extent preventing methods in risk management technique applied and practice on construction projects as it presented the below table 6

Table 6 preventing method

Preventing method	Scale	strongly disagree	disagree	neutral	Agree	strongly agree	Total
Use quantitative risk analysis technique for accurate time	Freq	15	5	10	51	69	150
	percent	10%	3%	7%	34%	46%	100%
Depend on subjective judgment to produce a proper program	Freq	51	39	10	25	25	150
	percent	34%	26%	7%	17%	17%	100%
Produce a proper schedule by getting updated project information	Freq	55	30	10	25	30	150
	percent	37%	20%	7%	17%	20%	100%
Plan alternative methods as stand-by preventive	Freq	54	41	5	25	25	150
	percent	36%	27%	3%	17%	17%	100%
Transfer or share risk to/with other parties	Freq	90	25	7	18	10	150
	percent	60%	17%	5%	12%	6%	100%

As the above table 6 presented the risk management technique applied and practice on construction projects shows that majority of the respondents views about preventing method on project performance shows that majorities 46% and 34% of the respondents react strongly agree and agree that use quantitative risk analysis technique for accurate time on project success. While, 7% of the respondents react neutral that use quantitative risk analysis technique for accurate time on project success .Hence 10% and 3% of the respondents react strongly disagree and disagree that use quantitative risk analysis

technique for accurate time on project success. The findings of the related risk management technique applied and practice on construction projects shows that majority of the respondents views about preventing method on project performance shows that majorities 46% and 34% of the respondents react strongly agree and agree that they use quantitative risk analysis technique for accurate time on project success so as to maximize opportunities and minimize consequences of a risk event.

As the above table 6 presented the risk management technique applied and practice on construction projects in preventing method on project implementation and performance shows that majorities 34% and 26% of the respondents react strongly disagree and disagree depend on subjective judgment to produce a proper program on project success. While, 7% of the respondents react neutral that use depend on subjective judgment to produce a proper program on project success. .Hence 17% and 17% of the respondents react strongly agree and agree to depend on subjective judgment to produce a proper program on project success. The findings of the related risk management technique applied and practice on construction projects shows that majorities 48% and 39% of the respondents react strongly disagree and disagree that they apply and practice preventing risk management method by depend on subjective judgment to achieve successfulness of construction project implementation and performance in Somali region and this may hinder project objective due to that clients, contractors and consultants do not gave focus on subjective judgments which related qualitative assessment which provide perception and attitude of the area

In addition, as the table 6 above presenting he risk management technique applied and practice on construction projects in preventing method on project implementation and performance illustrate that majorities 37% and 20% of the respondents react strongly disagree and disagree that they produce a proper schedule by getting updated project information for prevented method for the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that they produce a proper schedule by getting updated project information for prevented method for the impact of the risk factors on project implementation and performance. Hence

20% and 17% of the respondents react strongly agree and agree they apply and practice to produce a proper schedule by getting updated project information for prevented method for the impact of the risk factors on project implementation and performance. The findings of this study revealed 37% and 20% of the respondents react strongly disagree and disagree that they produce a proper schedule by getting updated project information for prevented method for the impact of the risk factors and this may put risk and hinder to achieve successful project implementation and performance due to that it has negative impact of project calendar

As the data above table 6 on views about preventing method on project performance shows that majorities 27% and 37% of the respondents react strongly agree and agree that they plan alternative methods as stand-by preventive method for the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that that they plan alternative methods as stand-by preventive method for the impact of the risk factors on project implementation and performance. Hence 17% and 17% of the respondents react strongly agree and agree that that they plan alternative methods as stand-by preventive method for the impact of the risk factors on project implementation and performance.. The findings of this study revealed majorities 27% and 37% of the respondents react strongly disagree and disagree that they plan alternative methods as stand-by preventive method for the impact of risk factors on project implementation and performance and this may effect project sustainability due to that any risk occur occasionally may hinder project implementation and performance.

As the data above table on views about preventing method on project performance shows that majorities 60% and 17% of the respondents react strongly disagree and disagree that they apply and practice risk transfer or share risk to/with other parties as a preventive management method to overcome the impact of the risk factors on project implementation and performance. While, 5% of the respondents react neutral that that they apply and practice risk transfer or share risk to/with other parties as a preventive management method to overcome the impact of the risk factors on project implementation and performance. Hence 12% and 6% of the respondents react strongly

agree and agree that that they apply and practice risk transfer or share risk to/with other parties as a preventive management method to overcome the impact of the risk factors on project implementation and performance. The findings of this study revealed majorities 27% and 37% of the respondents react strongly disagree and disagree that they apply and practice risk transfer or share risk to/with other parties as a preventive management method to overcome the impact of the risk factors on project success and this may hinder project objective and target due to the risk is uncertainty and foreseen

4.4.2. Mitigation method

In this section respondents were asked to rate the extent mitigation methods in risk management technique applied and practice on construction projects as it presented the below table 7

Table 7 mitigation method

Mitigation method	Scale	strongly disagree	disagree	neutral	agree	strongly agree	Total
Increase manpower and/or equipment	Freq	15	5	10	51	69	150
	percent	10%	3%	7%	34%	46%	100%
increase the working hours	Freq	51	39	10	25	25	150
	percent	34%	26%	7%	17%	17%	100%
Change the sequence of work by overlapping activities	Freq	55	30	10	25	30	150
	percent	37%	20%	7%	17%	20%	100%
Coordinate closely with subcontractor	Freq	54	41	5	25	25	150
	percent	36%	27%	3%	17%	17%	100%
lose supervision to subordinates	Freq	90	25	7	18	10	150

for minimizing abortive work	percent	60%	17%	5%	12%	6%	100%
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As the above table 7 presented the risk management technique applied and practice on construction projects shows that majority of the respondents views about mitigating method on project performance shows that majorities 46% and 34% of the respondents react strongly agree and agree that applying and practicing increase manpower and/or equipment can overcome the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that applying and practicing increase manpower and/or equipment can overcome the impact of the risk factors on project implementation and performance .Hence 10% and 3% of the respondents react strongly disagree and disagree that applying and practicing increase manpower and/or equipment can overcome the impact of the risk factors on project implementation and performance. The findings of the related risk management technique applied and practice on construction projects shows that majority of the respondents views about mitigating method on project performance shows that majorities 46% and 34% of the respondents react strongly agree and agree that applying and practicing increase manpower and/or equipment can overcome the impact of the risk factors on project implementation and performance and this may lead chance for project success.

As the above table7 presented the risk management technique applied and practice on construction projects in mitigating method on project performance shows that majorities 34% and 26% of the respondents react strongly disagree and disagree that to apply and practice increase the working hours. While, 7% of the respondents reacts neutral that to apply and practice increase the working hours. Hence 17% and 17% of the respondents react strongly agree and agree that applying and practicing increase the working hours. The findings of the related risk management technique applied and practice on construction projects shows that majorities 48% and 39% of the respondents react strongly disagree and disagree that they apply that applying and practicing increase the working hours and this may hinder to mitigate the impact of risk

factors on project implementation and performance.

As the data above table 7 on views about preventing method on project performance shows that majorities 37% and 20% of the respondents react strongly disagree and disagree to apply and practice change the sequence of work by overlapping activities for mitigating method the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that to apply and practice change the sequence of work by overlapping activities for mitigating method the impact of the risk factors on project implementation and performance. Hence 20% and 17% of the respondents react strongly agree and agree that to apply and practice change the sequence of work by overlapping activities for mitigating method the impact of the risk factors on project implementation and performance. The findings of this study revealed 37% and 20% of the respondents react strongly disagree and disagree that to apply and practice change the sequence of work by overlapping activities for mitigating method the impact of the risk factors on project implementation and performance by the fact that this strategy may increase employee turnover and this may lead to miss skilled manpower

As the data above table 7 on views about preventing method on project performance shows that majorities 27% and 37% of the respondents react strongly agree and agree that to apply and practice coordinating subcontractors for mitigating method the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that to apply and practice coordinating subcontractors for mitigating method the impact of the risk factors on project implementation and performance Hence 17% and 17% of the respondents react strongly agree and agree that to apply and practice coordinating subcontractors for mitigating method the impact of the risk factors on project implementation and performance.. The findings of this study revealed majorities 27% and 37% of the respondents react strongly disagree and disagree to apply and practice coordinating subcontractors for mitigating method the impact of the risk factors on project implementation and performance due to that it leads to fail the targeted time and cost allocated to complete the project

As the data above table 7 on views about mitigating method on project performance shows that majorities 60% and 17% of the respondents react strongly disagree and disagree to apply and practice lose supervision to subordinates for minimizing abortive work as a mitigating method to achieve project success. While, 5% of the respondents react neutral to apply and practice lose supervision to subordinates for minimizing abortive work as a mitigating method to achieve project success. Hence 12% and 6% of the respondents react strongly agree and agree to apply and practice lose supervision to subordinates for minimizing abortive work as a mitigating method to achieve project success. The findings of this study revealed majorities 27% and 37% of the respondents react strongly disagree and disagree to apply and practice lose supervision to subordinates for minimizing abortive work as a mitigating method to achieve project success by the fact that supervisor person required to have both technical skill, domain knowledge and conceptual knowledge

4.4.3. Risk analysis method

In this section respondents were asked to rate the extent risk analysis method in risk management technique applied and practice on construction projects as it presented the below table

Table 8 risk analysis

Risk analysis method	Scale	strongly disagree	disagree	neutral	agree	strongly agree	Total
Expert Systems such as software packages decision based risk analysis techniques	Freq	15	5	10	51	69	150
	Percent	10%	3%	7%	34%	46%	100%
Probability analysis (analyze of historical data)	Freq	26	24	1	51	48	150
	Percent	17%	16%	1%	34%	32%	100%
Sensitivity analysis	Freq	69	51	10	15	5	150
	Percent	46%	34%	7%	10%	3%	100%
Simulation analysis using	Freq	54	41	5	25	25	150

simulator computer packages	Percent	36%	27%	3%	17%	17%	100%
Direct judgment using experience and personal skills	Freq	10	18	7	90	25	150
	Percent	6%	12%	5%	60%	17%	100%
Comparing analysis with similar projects	Freq	25	25	10	51	39	150
	Percent	17%	17%	7%	34%	26%	100%

As the above table8 presented the risk management technique applied and practice on construction projects shows that majority 46% and 34% of the respondents react strongly agree and agree that they apply and practice expert Systems such as software packages decision based risk analysis method on project implementation and performance.. While, 7% of the respondents react neutral that they apply and practice expert Systems such as software packages decision based risk analysis method on project implementation and performance .Hence 10% and 3% of the respondents react strongly disagree and disagree that they apply and practice expert Systems such as software packages decision based risk analysis method on project implementation and performance. The findings of this study reveal that majority 46% and 34% of the respondents react strongly agree and agree that they apply and practice expert Systems such as software packages decision based risk analysis method on project implementation and performance and this may help project success by maximize opportunities and minimize consequences of a risk event.

As the above table 8 presented the risk management technique applied and practice on construction projects in risk analysis method on project implementation and performance shows that majorities 34% and 32% of the respondents react strongly agree and agree they apply and practice probability analysis (analyze of historical data) for risk analysis method. While, 7% of the respondents react neutral they apply and practice probability analysis (analyze of historical data) for risk analysis method. Hence 17% and 16% of the respondents react strongly disagree and disagree they apply and practice probability analysis (analyze of historical data) for risk analysis method. The

findings of the related risk management technique applied and practice on construction projects shows that majorities 34% and 32% of the respondents react strongly agree and agree that they apply and practice probability analysis (analyze of historical data) for risk analysis method and this may gave one step of hope to achieve success of construction project and predict the impact of risk factors that obstacle on project implementation and performance.

As the data above table 8 reveal the risk analysis method on project implementation and performance shows that majorities 46% and 34% of the respondents react strongly disagree and disagree that they apply and practice sensitivity analysis in construction projects. While, 7% of the respondents react neutral that apply and practice sensitivity analysis in construction projects. Hence 10% and 3% of the respondents react strongly agree and agree that apply and practice sensitivity analysis in construction projects. The findings of this study revealed majority 46% and 34% of the respondents react strongly disagree and disagree that apply and practice sensitivity analysis in construction projects for the impact of the risk factors on project implementation and performance and the findings of this study shows that there is uncertainty for the project implementation and performance due that knowledge gap related on utilization of sensitivity analysis

As the data above table 8 on views about risk analysis on project implementation and performance shows that majorities 36% and 27% of the respondents react strongly disagree and disagree that they apply and practice risk Simulation analysis using simulator computer packages as a risk analysis to overcome the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that that they apply and practice risk Simulation analysis using simulator computer packages as a risk analysis to overcome the impact of the risk factors on project implementation and performance. Hence 17% and 17% of the respondents react strongly agree and agree that they apply and practice risk Simulation analysis using simulator computer packages as a risk analysis to overcome the impact of the risk

factors on project implementation and performance. The findings of this study revealed majorities 36% and 27% of the respondents react strongly disagree and disagree that they apply and practice risk Simulation analysis using simulator computer packages as a risk analysis to overcome the impact of the risk factors on project implementation and performance

As the data above table 8 on views about risk analysis on project performance shows that majorities 60% and 17% of the respondents react strongly disagree and disagree that they apply and practice direct judgment using experience and personal skills as a risk analysis method to overcome the impact of the risk factors on project implementation and performance. While, 5% of the respondents react neutral that they apply and practice Direct judgment using experience and personal skills as a risk analysis method to overcome the impact of the risk factors on project implementation and performance. Hence 12% and 6% of the respondents react strongly agree and agree that they apply and practice direct judgment using experience and personal skills as a risk analysis method to overcome the impact of the risk factors on project implementation and performance. The findings of this study revealed majorities 60% and 17% of the respondents react strongly disagree and disagree that they apply and practice they apply and practice direct judgment using experience and personal skills as a risk analysis method to overcome the impact of the risk factors on projects and this may put danger to achieve the objective of the project implementation and performance in construction projects which is necessary the experts to have feature experience the location and the subject matter of the area

Again, as the above table 8 presented respondents response the risk analysis on project implementation and performance shows that majority 34% and 26% of the respondents react strongly agree and agree that they apply and practice Comparing analysis with similar projects as a risk analysis method to measure the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that they apply and practice Comparing analysis with similar projects as a risk analysis

method to measure the impact of the risk factors on project implementation and performance. Hence 17% and 17% of the respondents react strongly disagree and disagree that they apply and practice Comparing analysis with similar projects as a risk analysis method to measure the impact of the risk factors on project implementation and performance. The findings of this study revealed majorities 34% and 26% of the respondents react strongly agree and agree that they apply and practice apply and practice Comparing analysis with similar projects as a risk analysis method to measure the impact of the risk factors on project implementation and performance as a risk analysis method to overcome the impact of the risk factors on project implementation and performance

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary

The general objective of this study was to assess the impact of risk factors on project implementation and performance in Somali region: a case of government financing construction projects. The study employed a descriptive survey method. The researcher chose road construction projects and bridge building construction project as study area. Concerning sampling technique public bureau, contractors, and consultancies that are directly involved were selected using purposive sampling technique based on geographical sites, level of their capacity and experience in projects involvements. Similarly 57 % respondents from public bureau (respondents from road authority, respondents from design enterprise and respondents from liyuu enterprise) 33% from contractors (50 contractors out of 200 were selected from contractors based on number of projects implemented or ongoing projects) and 10% respondents from consultancies were selected using purposive sampling techniques. Also, the study employed questionnaires, interview, observation and focus group discussion as instruments of data collection for this study.

The researcher employed SPSS software analyzing data. Descriptive statistics such as percentages and means were used to describe the data by the help of tables, and figures. Also, the importance Index was also used to assess risk assessment and management on project implementation and performance. It was used to rank the identified risk factors during the project implantation and performance. Researcher was using SPPs software version 16.0 analyzing data and the importance index (RII) were analyzing to determine the risk factors

Characteristics of gender respondents

Participation of both male and female respondents in this study ensured that different views across gender are represented. The researcher included the gender of the respondents' analysis in order to establish the magnitude to which each of the sexes affect the government financing construction projects implementation

and performance in Somali region. The finding of this study shows that the majority of the respondents are dominated by male as (94%), indicating that more males are involved in the construction projects as compared to females (6%). This illustrates that gender imbalance exists in construction projects implementation and performance in Somali region. Thus, the findings of this study suggest that female recruitments must be encouraged by means of balancing gender equity in construction projects.

Also, the age of respondents reveals that 62 respondents between 15 to 30 years of age representing 42%, 80 respondents, each between 31-45 years of age representing 50% formed the majority and 8 respondents each between 46-60 years of age representing 8% respectively. The findings of this study show that majority of the respondents were young and can bring hope to change the future projects in the region and as well as the country if the government gives more focus to improve their skill.

Again, in level of education, majority 104(69%) of the respondents holds bachelor degree, where 23(15%) and 12(10%) of the respondents are certificate and diploma holder. Hence, 10(6%) and 1(1%) of the respondents are master and PhD holder. The finding of this study shows that there is a professional qualification gap for projects' implementation and performance since majority of them are 52% degree in engineering department and below one year experience, this may affect the objectives of the project implementation and performance. Since project implementation requires different skills and qualification is one of the crucial areas that construction projects can engage and challenge for the impact of risk factors on project implementation and performance. To this effect, the finding of the study suggested that there is a strong requirement for project administration need to recruit different professions in order to improve effectiveness of construction projects implementation and performance. As well, majority of the respondents are dominated by below one year's experience that represented as a 78(52 %). These were followed eight years experience respondents represented 44(29%).years

experience and three and five years experience who formed the least in years of experience as represented 13(8.7) and 15(15%). The findings of this study shows that respondents had experience to explore and one to escalate to a position of leadership and facilitators in the impact of risk factors on project implementation and performance

Considering the overview of organizational participation

The Overview of organizational participation of study result shows that respondents from clients were formed as a majority which presented 85(51.5 %) where from contractors respondents are 50(33.3%) hence, from consultants respondents are 15(10%). The finding of this study shows that the total response rate is sufficient and safe to analyze and interpret the data.

Also, in relation to the job position the study reveal that respondents from engineers formed the majority with 103; representing 68% and 20 respondents from the site managers representing 13.3%, while 12 project managers are represent 8%. Also, 5 from heads of organization and deputy heads representing 3.3%, and 3.3%, hence, 5 directors representing 3.3%. These results show that the study were targeted to diagnose various sector and/or position settings which lead to the impact of risk factors on project implementation and performance in Somali region particularly government financing construction project. In addition, the finding related experience in project implementation the finding of this study shows that majority of the respondent 76 represents 50% of the respondent have an experience related practical projects implementation one to five projects, while 29 and 19 respondents represents 26.7%and 19.3% of the respondent have an experience related practical implement eleventh to fifteen and six to ten. Hence, 5respondents represents 3.3% of the respondent have an experience related practical projects implementation for more than sixteen to nineteen. To this affect, the findings of this study shows that majority of the respondents have an experience and can gave confidentiality to provide practical experience on risk factors exist on construction projects in Somali regional state specially public construction projects financing governments

Impact of Risk Factors on Project Implementation and Performance

Identification of Risk factors exist on construction projects

the views of the respondents about personal identification on risk factors that typically applied government financing construction projects, shows that majority 85 respondents from clients representing 100%, 50 respondents from contractors representing 100% and 15 respondents from consultants representing 100% respondents react yes which means that Poor Safety Measures Cause Damage, Error Design, Rush Design, Awarding the Design to Unqualified Designers, High Competition Bids, Cost Allocation, Rush Bidding, Lower Quality of Work, Changes in Design, Change in Management are key identification of personally view on the risk factors that typically applied government financing construction. Hence, respondents from contractors only react yes risk factor related a delayed payment as 100% which indicating that as a individual contractors sees delayed payments as a first class risk factors. While, respondents from the clients and consultancies rated as third class risk factors 90% and 87%, the finding of this study indicate that individual risk factors identification shows Poor Safety Measures Cause Damage, Error Design, Rush Design, Awarding the Design to Unqualified Designers, High Competition Bids, Cost Allocation, Rush Bidding, Lower Quality of Work, Changes in Design, Change in Management are rated as a first class risk factors that bearing individual risk factors identification during the impact of risk factors on construction project implementation and performance in Somali region

In addition, the findings of this study shows respondents were asked to indicate Yes or No to their personal view on identification of risk factors that typically applied government financing construction projects as the above table shows and the findings revealed that from the clients respondents represent 81 (95%), from the contractors respondents represent 46 (95%) and from the consultants respondents represent 14 (93%) reacts yes which indicates that they rate second class risk factors that typically applied government financing construction projects in Somali region are uncoordinated design, Ambiguity planning, poor communication, lack of management cash flow, Resource management and information availability. The findings of this study shows

that individual views on risk factors identification rated as a second class risk factors that typically applied government financing construction projects in Somali region are uncoordinated design, Ambiguity planning, poor communication, lack of management cash flow, Resource management and information availability

In addition, respondents from clients, contractors and consultants in this study were asked personally to identify risk factors and the findings on their personal view on identification of risk factors that typically applied government financing construction projects revealed that from the clients respondents represent 70-80 (82%-94%), from the contractors respondents represent 25-46 (50%-93%) and from the consultants respondents represent 12 (93%) reacts yes which indicates that they rated third class risk factors that typically applied government financing construction projects in Somali region are delivering of defective materials, inaccurate quantities, lack of consistency bill and quantity, delayed payment, gaps in Implementation and the specifications, mismatch actual and executed. The findings of this study shows that individual views on risk factors identification as a third class risk factors that typically applied government financing construction projects in Somali region are delivering of defective materials, inaccurate quantities, lack of consistency bill and quantity, delayed payment, gaps in Implementation and the specifications, mismatch actual and executed

Effect of Risk factors on construction projects

As the study findings presents the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 100%, from the contractors reacts majority 96% and consultants respondents 100% reveals that they strongly agree the negative impact of poor safety method cause chance of risk occurrence related on physical risk factors on, during construction project by rating, the score of RII between 0.522353 from clients, 0.96 from contractors and from consultants 0.99. The findings of this study shows that the highest score indicates a highest negative impact on construction project implementation and performance the findings of this study concluded that poor safety method cause chance of risk occurrence that has highest negative impact on construction project implementation

and performance in government financing projects in Somali region

Also the study shows that the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 96%, from the and consultants respondents 97% reveals that they strongly agree the negative impact of Lack of expert designers related design risk factor on construction project implementation and performance are rating the score of RII between 0.52 from clients representing 96% and 0.97 from consultants represents 96.10% ranked the second risk factor the has negative impact on project implementation and performance. The findings of this study shows that Lack of expert designers related design risk factor are the second highest score rated which indicates it's the second highest risk factor that has negative impact on construction project implementation and performance in government financing construction projects in Somali region

As the above figure 7 shows the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 96%, and consultants respondents 97% reveals that they strongly agree the negative impact of project cost estimation related financial risk factors on project success are rating the score of RII between 0.517647 from clients representing 92.30% and 0.96 from consultants represents 92.30% ranked the third risk factor the has negative impact on project implementation and performance. The findings of this study shows that project cost estimation related financial risk factor are the third highest score rated which indicates it's the third highest risk factor that has negative impact on construction project implementation and performance in government financing construction projects in Somali region

The result reveal that the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 84.60% and from consultants respondents 93% reveals that they strongly agree the negative impact of project cost estimation related financial risk factors on project success are rating the score of RII between 0.510588 from clients representing 84.60% and 0.95 from consultants represents 84.60% ranked the third risk factor the has negative impact on

project implementation and performance. The findings of this study shows that Inaccurate design related on design risk factor and rush bidding related on construction risk factor are the fourth highest score rated which indicates it's the fourth highest risk factor that has negative impact on project implementation and performance in government financing construction projects in Somali region

As the above figure 7 shows the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 84.60% and from consultants respondents 93% reveals that they strongly agree the negative impact of Changes in management ways related management risk factor and frequent Changes in design related on construction risk factor are rating the score of RII between 0.508235 from clients representing 76.90% and 0.93 from consultants represents 76.90% ranked the six risk factor that has negative impact on project implementation and performance. The findings of this study show that Changes in management ways related management risk factor and frequent Changes in design related on construction risk factor are the six highest score rated which indicates it's the fourth highest risk factor that has negative impact on project implementation and performance in government financing construction projects in Somali region

As the above figure 7 shows the impact of risk factors on project implementation, the findings of this study revealed that from the clients' respondents reveal majority 67.60% and from consultants respondents 93% reveals that they strongly agree the negative impact lack of information related management risk factor and high bids related on logistic risk factor are rating the score of RII between 0.496471 from clients representing 69.20% and 0.92 from consultants represents 73% ranked the eight risk factor that has negative impact on project implementation and performance. The findings of these study shows that lack of information related management risk factor and high bids related on logistic risk factor are the eight highest score rated which indicates its highest risk factor that has negative impact on project implementation and performance in government financing construction projects in Somali region

As the above figure 7 shows the impact of risk factors on project implementation, the

findings of this study revealed that from the clients' respondents reveal majority 61.50% and from consultants respondents 61.50% reveals that they strongly agree the negative impact of unavailable labor, materials and equipment related on logistic risk factor are rating the score of RII between 0.494118 from clients representing 61.50% and 0.89 from consultants represents 61.50% and ranked the tenth risk factor that has negative impact on project implementation and performance. The findings of these study shows that unavailable labor, materials and equipment related on logistic risk factor are number ten of the leading top ten leading factors that has highest score rated which indicates its risk factor number ten highest risk factor that has negative impact on project implementation and performance in government financing construction projects in Somali region

Risk management technique applied and practice on construction projects

Prevention method

The findings related on the risk management technique applied and practice on construction projects shows that majority of the respondents views about preventing method on project performance shows that majorities 46% and 34% of the respondents react strongly agree and agree that use quantitative risk analysis technique for accurate time on project success. While, 7% of the respondents react neutral that use quantitative risk analysis technique for accurate time on project success .Hence 10% and 3% of the respondents react strongly disagree and disagree that use quantitative risk analysis technique for accurate time on project success. The findings of the related risk management technique applied and practice on construction projects shows that majority of the respondents views about preventing method on project performance shows that majorities 46% and 34% of the respondents react strongly agree and agree that they use quantitative risk analysis technique for accurate time on project success so as to maximize opportunities and minimize consequences of a risk event.

Also, the findings shows that majorities 34% and 26% of the respondents react strongly disagree and disagree depend on subjective judgment to produce a proper program on project success. While, 7% of the respondents react neutral that use depend on subjective judgment to produce a proper program on project success. .Hence 17% and

17% of the respondents react strongly agree and agree to depend on subjective judgment to produce a proper program on project success. The findings of the related risk management technique applied and practice on construction projects shows that majorities 48% and 39% of the respondents react strongly disagree and disagree that they apply and practice preventing risk management method by depend on subjective judgment to achieve successfulness of construction project implementation and performance in Somali region and this may hinder project objective due to that clients, contractors and consultants do not gave focus on subjective judgments which related qualitative assessment which provide perception and attitude of the area

In addition, the risk management technique applied and practice on construction projects in preventing method on project implementation and performance illustrate that majorities 37% and 20% of the respondents react strongly disagree and disagree that they produce a proper schedule by getting updated project information for prevented method for the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that they produce a proper schedule by getting updated project information for prevented method for the impact of the risk factors on project implementation and performance. Hence 20% and 17% of the respondents react strongly agree and agree they apply and practice to produce a proper schedule by getting updated project information for prevented method for the impact of the risk factors on project implementation and performance. The findings of this study revealed 37% and 20% of the respondents react strongly disagree and disagree that they produce a proper schedule by getting updated project information for prevented method for the impact of the risk factors and this may put risk and hinder to achieve successful project implementation and performance due to that it has negative impact of project calendar

Again, the views about preventing method on project performance shows that majorities 27% and 37% of the respondents react strongly agree and agree that they plan alternative methods as stand-by preventive method for the impact of the risk factors on project implementation and performance. While, 7% of the respondents react

neutral that that they plan alternative methods as stand-by preventive method for the impact of the risk factors on project implementation and performance. Hence 17% and 17% of the respondents react strongly agree and agree that that they plan alternative methods as stand-by preventive method for the impact of the risk factors on project implementation and performance.. The findings of this study revealed majorities 27% and 37% of the respondents react strongly disagree and disagree that they plan alternative methods as stand-by preventive method for the impact of risk factors on project implementation and performance and this may effect project sustainability due to that any risk occur occasionally may hinder project implementation and performance. The result of this study shows that majorities 60% and 17% of the respondents react strongly disagree and disagree that they apply and practice risk transfer or share risk to/with other parties as a preventive management method to overcome the impact of the risk factors on project implementation and performance. While, 5% of the respondents react neutral that that they apply and practice risk transfer or share risk to/with other parties as a preventive management method to overcome the impact of the risk factors on project implementation and performance. Hence 12% and 6% of the respondents react strongly agree and agree that that they apply and practice risk transfer or share risk to/with other parties as a preventive management method to overcome the impact of the risk factors on project implementation and performance. The findings of this study revealed majorities 27% and 37% of the respondents react strongly disagree and disagree that they apply and practice risk transfer or share risk to/with other parties as a preventive management method to overcome the impact of the risk factors on project success and this may hinder project objective and target due to the risk is uncertainty and foreseen

Mitigation method

The finding of this study revealed that risk management technique applied and practice on construction projects shows that majority of the respondents views about mitigating method on project performance shows that majorities 46% and 34% of the respondents react strongly agree and agree that applying and practicing increase manpower and/or

equipment can overcome the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that applying and practicing increase manpower and/or equipment can overcome the impact of the risk factors on project implementation and performance .Hence 10% and 3% of the respondents react strongly disagree and disagree that applying and practicing increase manpower and/or equipment can overcome the impact of the risk factors on project implementation and performance. The findings of the related risk management technique applied and practice on construction projects shows that majority of the respondents views about mitigating method on project performance shows that majorities 46% and 34% of the respondents react strongly agree and agree that applying and practicing increase manpower and/or equipment can overcome the impact of the risk factors on project implementation and performance and this may lead chance for project success.

Also, the findings shows that majorities 34% and 26% of the respondents react strongly disagree and disagree that to apply and practice increase the working hours. While, 7% of the respondents reacts neutral that to apply and practice increase the working hours. Hence 17% and 17% of the respondents react strongly agree and agree that applying and practicing increase the working hours. The findings of the related risk management technique applied and practice on construction projects shows that majorities 48% and 39% of the respondents react strongly disagree and disagree that they apply that applying and practicing increase the working hours and this may hinder to mitigate the impact of risk factors on project implementation and performance.

In addition to this the results shows that majority 37% and 20% of the respondents react strongly disagree and disagree to apply and practice change the sequence of work by overlapping activities for mitigating method the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that to apply and practice change the sequence of work by overlapping activities for mitigating method the impact of the risk factors on project implementation and performance. Hence 20% and 17% of the respondents react strongly agree and agree that to apply and practice change the sequence of work by overlapping activities for mitigating method

the impact of the risk factors on project implementation and performance. The findings of this study revealed 37% and 20% of the respondents react strongly disagree and disagree that to apply and practice change the sequence of work by overlapping activities for mitigating method the impact of the risk factors on project implementation and performance by the fact that this strategy may increase employee turnover and this may lead to miss skilled manpower

Again the findings of this study on mitigating method on project performance shows that majorities 27% and 37% of the respondents react strongly agree and agree that to apply and practice coordinating subcontractors for mitigating method the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that to apply and practice coordinating subcontractors for mitigating method the impact of the risk factors on project implementation and performance Hence 17% and 17% of the respondents react strongly agree and agree that to apply and practice coordinating subcontractors for mitigating method the impact of the risk factors on project implementation and performance.. The findings of this study revealed majorities 27% and 37% of the respondents react strongly disagree and disagree to apply and practice coordinating subcontractors for mitigating method the impact of the risk factors on project implementation and performance due to that it leads to fail the targeted time and cost allocated to complete the project

Also, the study reveal that majority 60% and 17% of the respondents react strongly disagree and disagree to apply and practice lose supervision to subordinates for minimizing abortive work as a mitigating method to achieve project success. While, 5% of the respondents react neutral to apply and practice lose supervision to subordinates for minimizing abortive work as a mitigating method to achieve project success. Hence 12% and 6% of the respondents react strongly agree and agree to apply and practice lose supervision to subordinates for minimizing abortive work as a mitigating method to achieve project success. The findings of this study revealed majorities 27% and 37% of the respondents react strongly disagree and disagree to apply and practice lose supervision to subordinates for minimizing abortive work as a mitigating method to

achieve project success by the fact that supervisor person required to have both technical skill, domain knowledge and conceptual knowledge

Risk analysis method

Focusing on the risk management technique applied and practice on construction projects shows that majority of the respondents' views about risk analysis method on project implementation and performance shows that majority 46% and 34% of the respondents react strongly agree and agree that they applied and practice Expert Systems such as software packages decision based risk analysis techniques. While, 7% of the respondents react neutral that they applied and practice Expert Systems such as software packages decision based risk analysis techniques. Hence 10% and 3% of the respondents react strongly disagree and disagree that they applied and practice Expert Systems such as software packages decision based risk analysis techniques. The findings of the related risk management technique applied and practice on construction projects shows that majority of the respondents views about preventing method on project performance shows that majorities 46% and 34% of the respondents react strongly agree and agree that they applied and practice Expert Systems such as software packages decision based risk analysis techniques and may help project success by maximize opportunities and minimize consequences of a risk event.

Also, the findings related on risk management technique applied and practice on construction projects in risk analysis method on project implementation and performance shows that majorities 34% and 32% of the respondents react strongly agree and agree to probability analysis (analyze of historical data) for risk analysis. While, 7% of the respondents react neutral to probability analysis (analyze of historical data) for risk analysis .Hence 17% and 16% of the respondents react strongly disagree and disagree to probability analysis (analyze of historical data) for risk analysis. The findings of the related risk management technique applied and practice on construction projects shows that majorities 34% and 32% of the respondents react strongly agree and agree that to apply and practice risk analysis method by analysis (analyze of historical data) to achieve successfulness of construction project and predict that risk

factors that obstacle on project implementation and performance.

Again, risk analysis method on project implementation and performance shows that majorities 46% and 34% of the respondents react strongly disagree and disagree that they apply and practice sensitivity analysis in construction projects. While, 7% of the respondents react neutral that apply and practice sensitivity analysis in construction projects. Hence 10% and 3% of the respondents react strongly agree and agree that apply and practice sensitivity analysis in construction projects. The findings of this study revealed majority 46% and 34% of the respondents react strongly disagree and disagree that apply and practice sensitivity analysis in construction projects for the impact of the risk factors on project implementation and performance and the findings of this study shows that there is uncertainty for the project implementation and performance due that knowledge gap related on utilization of sensitivity analysis

In addition, the views about risk analysis on project implementation and performance shows that majorities 36% and 27% of the respondents react strongly disagree and disagree that they apply and practice risk Simulation analysis using simulator computer packages as a risk analysis to overcome the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that that they apply and practice risk Simulation analysis using simulator computer packages as a risk analysis to overcome the impact of the risk factors on project implementation and performance. Hence 17% and 17% of the respondents react strongly agree and agree that they apply and practice risk Simulation analysis using simulator computer packages as a risk analysis to overcome the impact of the risk factors on project implementation and performance. The findings of this study revealed majorities 36% and 27% of the respondents react strongly disagree and disagree that they apply and practice risk Simulation analysis using simulator computer packages as a risk analysis to overcome the impact of the risk factors on project implementation and performance. Finally study revealed that majority 60% and 17% of the respondents react strongly disagree and disagree that they apply and practice direct judgment using experience and personal skills as a risk analysis method to overcome the impact of the risk factors

on project implementation and performance. While, 5% of the respondents react neutral that they apply and practice Direct judgment using experience and personal skills as a risk analysis method to overcome the impact of the risk factors on project implementation and performance. Hence 12% and 6% of the respondents react strongly agree and agree that they apply and practice direct judgment using experience and personal skills as a risk analysis method to overcome the impact of the risk factors on project implementation and performance. The findings of this study revealed majorities 60% and 17% of the respondents react strongly disagree and disagree that they apply and practice they apply and practice direct judgment using experience and personal skills as a risk analysis method to overcome the impact of the risk factors on projects and this may put danger to achieve the objective of the project implementation and performance in construction projects which is necessary the experts to have feature experience the location and the subject matter of the area consequently, the findings of this study shows that majority 34% and 26% of the respondents react strongly agree and agree that they apply and practice Comparing analysis with similar projects as a risk analysis method to measure the impact of the risk factors on project implementation and performance. While, 7% of the respondents react neutral that they apply and practice Comparing analysis with similar projects as a risk analysis method to measure the impact of the risk factors on project implementation and performance. Hence 17% and 17% of the respondents react strongly disagree and disagree that they apply and practice Comparing analysis with similar projects as a risk analysis method to measure the impact of the risk factors on project implementation and performance. The findings of this study revealed majorities 34% and 26% of the respondents react strongly agree and agree that they apply and practice apply and practice Comparing analysis with similar projects as a risk analysis method to measure the impact of the risk factors on project implementation and performance as a risk analysis method to overcome the impact of the risk factors on project implementation and performance

5.2. Conclusion

The study has established conclusions concerning the impact of risk factors on project implementation and performance in Somali region: a case of government financing construction projects. Conclusions were drawn from the critical factors derived from the findings of the summary of the study. Recommendations for correcting in impact of risk factors on project implementation and performance are based on conclusions drawn.

- The finding of this study exposed that gender imbalance exist in construction projects participation in Somali region and this may hinder promotion of gender equity in job creation
- Study portray that majority of the project engagers are young and degree holders, yet they hold below one year experience , to this effect this may put utter the success of the project implementation and performance
- The finding of this study concluded the top ten foremost risk factors (RF) that have a pessimistic impact on construction projects are poor safety method cause chance of risk occurrence, lack of expert designers, cost estimation, rush bidding, inaccurate design, frequent Changes in design, changes in management ways, rush design, high competition in bids and Unavailability of labour, material and equipment.
- The findings of this study concluded design risk factors related on Inadequate of expert of project designer and inaccurate design often cause lack of good analytical apply, providing low technical advice, guidance and support for the client and contractors which cause to fail the project implementation and performance in Somali region.
- Finding of the study concluded finance risk factors are uttered negative impact on risk factors concern cost estimation of a variety of project activity

and financial claim often comes from overestimation and underestimation or inflation from price fluctuation and price escalation which lead to cost overrun and time over run the project

- The findings of this study concluded risk factors related managerial, logistic and construction are uttered negative impact on risk factors related in rush bidding, high competition biding and management changes which caused insufficient data during the project planning and executing, frequent changes in scope and revision of drawings, also other factors that promote risk occurred the project are biased judgmental, nepotism, tribalism and favoritism on selection contractors and designers often escort negative risk factors that impact public construction project implementation and performance in Somali region.
- The findings of this study reveal that quantitative risk analysis technique for accurate time, subjective judgment, produce a proper schedule by getting updated project information, alternative methods as stand-by preventive, practice risk transfer or share risk to/with other parties of preventing risk management method are not applying and practicing and this may put negative impact in project calendar and to achieve success of the project.
- This study concluded that limited in risk management practice and application of identifying risk factors that affect risk management technique in early by using computer software and sensitivity analysis often challenge to indentify different risk factors that hinder the successful implementation and performance in construction projects of Somali region

5.3. Recommendation

Based on the findings of the study and the objective of measuring the impact of risk factors on construction project implementation and performance, the study makes the following recommendations

- The finding of this study exposed that gender imbalance exist in construction projects participation in Somali region and this may hinder promotion of gender equity. Thus, the findings of this study suggest road authority, design enterprise, liyuu enterprise, contractors and other stakeholder must be encourage and prioritizing female recruitments by the means of balancing gender equity in project employments
- Study portray that majority of the project engagers are young and degree holders, yet they hold below one year experience, to this effect this may put utter the success of the project implementation and performance. To this effect, Somali regional state government and other stakeholders must provide training and coaching for young employee too improve their skill and knowledge so as to succeed target of the project
- the study forward clients, contractors and consultants the top ten foremost risk factors (RF) that have a pessimistic impact on construction projects which are poor safety method cause chance of risk occurrence, lack of expert designers, cost estimation, rush bidding, inaccurate design, frequent Changes in design, changes in management ways, rush design, high competition in bids and Unavailability of labour, material and equipment to avoid the impact of negative risk factors on project implementation and performance in Somali region
- The findings of this study concluded design risk factors related on Inadequate of expert of project designer and inaccurate design often cause lack of good analytical apply, providing low technical advice, guidance and support for the client and contractors to fail the project implementation and performance in

Somali region.. Thus, The findings of this study portray clients, contractors and consultants must give attention recruiting and trained the professional staffs engaged in appraising the project to overcome negative effect of risk factors related on design risk factors that impact on project implementation and performance

- The study forwarded to clients and consultants needs to be alert on financial risk management factors to overcome the impact of negative risk factors from cost overestimation and underestimation or effect inflation from price fluctuation for the project implementation and performance in Somali region
- The study recommends clients and consultant to undertake a feasibility study which is precondition for preparation sounded project and avoid biased judgmental, nepotism, tribalism and favoritism for selecting contractors and designers to succeed construction project implementation and performance in Somali region
- The study suggest that clients and consultants must apply and practice preventive risk management technique like quantitative risk analysis technique for accurate time subjective judgment, produce a proper schedule by getting updated project information, alternative methods as stand-by preventive, practice risk transfer or share risk to/with other parties that secure as risk management technique to maximize opportunities and minimize consequences of a project calendar and to achieve success of the project implementation and performance as per the cost and time allocated
- the finding of this study recommend clients, contractors and consultants to analyze risk factors from the perspectives of the stakeholders presented insight - client, contractor and consultant should work cooperatively during the feasibility phase onwards to address potential risks factors effectively and in time; contractors and subcontractors with robust construction and

management knowledge must be employed early to make sound preparation for carrying out successful project implementation and performance

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Appendix B: questionnaire

JIGJIGA UNIVESITY
SCHOOL OF GRADUATE STUDIES
COLLEGE OF BUSINESS, ECONOMICS AND MANGEMENT
DEPARTMENT OF ACCOUNTING AND FINANCE
MASTER OF PROJECT PLANING AND MANAGEMENT
REQUEST FOR COLLECTION OF RESEARCH DATA

Dear sir/ madam

I am a Master of project planning and management student at the University of Jigjiga. As part of the requirement for the award of the degree of master, I am expected to undertake a research study. I am requesting for your participation in a study that assess the impact of risk factors on project implementation and performance in Somali regional state: the case of government financing construction project. Please fill in the questionnaires. The research results were used for academic purposes only and information you provided were treated with confidentiality. Your cooperation were appreciated.

Yours sincerely,

By mustafe berket Muhumed

Instructions: Please respond to the items given as honestly and accurately as possible. Please read each statement carefully and tick (✓) against the appropriate answer. Fill in the blank spaces with correct information.

Part A: Background Information

1. What is your gender?

Male Female

2. Your origination

Clients

Contractor

Consultancy

Other _____

3. Your position?

Head office Deputy director Project Site manger

Director Project manager Other _____

4. Your highest level of education

Certificate Diploma Degree

Master PhD Other _____

If yes which department

Project planning and management

Management

Accounting and finance

Economics

Other _____

5. What is your highest number of project implemented?

1-5 Projects

6-10 projects

11-15 projects

16-20 projects

more than 21 projects

6. Your experience

Less than 1 year (), 1- 3 year (), 4-5 year (), more than 5 year ()

Part Two; The impact of risk factors on project implementation and performance

1. Please mark tick (√) the risk factors that you think typically applied government financing construction projects in Somali Region as below table shows

	Physical risk factors	Yes	No
1	Poor safety procedures resulting into accident occurrence	<input type="radio"/>	<input type="radio"/>
2	Supplies of defective materials	<input type="radio"/>	<input type="radio"/>
3	Varied labour and equipment	<input type="radio"/>	<input type="radio"/>
	Design Risk factors	Yes	No
4	Inaccurate design	<input type="radio"/>	<input type="radio"/>
5	uncoordinated design	<input type="radio"/>	<input type="radio"/>
6	Inaccurate quantities	<input type="radio"/>	<input type="radio"/>
7	Ambiguity of bill of quantity and drawing	<input type="radio"/>	<input type="radio"/>
8	fake design	<input type="radio"/>	<input type="radio"/>
8	Lack of expert designers	<input type="radio"/>	<input type="radio"/>
	Logistics risk factors	Yes	No
1 0	Unavailable labour, materials and equipment	<input type="radio"/>	<input type="radio"/>
1 1	Unclear scope of the work	<input type="radio"/>	<input type="radio"/>
1 2	High competition in bids	<input type="radio"/>	<input type="radio"/>
1 3	Inaccurate project program`s activity	<input type="radio"/>	<input type="radio"/>
	Financial management Risk factors	Yes	No
1 5	Inflation	<input type="radio"/>	<input type="radio"/>
1	Delayed payments on contract	<input type="radio"/>	<input type="radio"/>

6			
1 7	Financial failure of the contractor	<input type="radio"/>	<input type="radio"/>
1 8	Unmanaged cash flow	<input type="radio"/>	<input type="radio"/>
	Construction risk factors	Yes	No
1 9	Rush bidding	<input type="radio"/>	<input type="radio"/>
2 0	Gap between the Implementation and the specifications in draw	<input type="radio"/>	<input type="radio"/>
2 1	Undocumented change order	<input type="radio"/>	<input type="radio"/>
2 2	Low quality of work	<input type="radio"/>	<input type="radio"/>
2 3	Frequent Changes in design	<input type="radio"/>	<input type="radio"/>
2 4	Mismatch in actual and executed performance	<input type="radio"/>	<input type="radio"/>
	Management risk factors	Yes	No
2 8	Ambiguous planning due to project complexity	<input type="radio"/>	<input type="radio"/>
2 9	Resource management	<input type="radio"/>	<input type="radio"/>
3 0	Changes in management ways	<input type="radio"/>	<input type="radio"/>
3 1	Information unavailability (include uncertainty	<input type="radio"/>	<input type="radio"/>
3	Poor communication between parties	<input type="radio"/>	<input type="radio"/>

2	Involved		
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2. Please rate the extent the identified risks factors are impact on project implementation and performance of government financing projects in Somali region?

	Physical risk factors	1	2	3	4	5
1	Poor safety procedures resulting into accident occurrence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Supplies of defective materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Varied labour and equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Design Risk factors	1	2	3	4	5
4	Defective design (incorrect)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Not coordinated design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Inaccurate quantities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	Lack of consistency between bill of quantities, drawings and	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	Rush design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Awarding the design to unqualified designers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Logistics risk factors	1	2	3	4	5
10	Unavailable labour, materials and equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	Undefined scope of working	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	High competition in bids	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Inaccurate project program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	Poor communications between the home and field offices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Financial management Risk factors	1	2	3	4	5
15	cost allocation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16	Delayed payments on contract	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	Financial failure of the contractor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	Unmanaged cash flow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Construction risk factors	1	2	3	4	5
19	Rush bidding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	Gaps between the Implementation and the specifications due to misunderstanding of drawings and	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21	Undocumented change orders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22	Lower quality of work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23	Changes in design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24	Difference in actual and contract executed quantities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Political risk factors	1	2	3	4	5
25	Change of government	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26	Change of government policy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27	New governmental acts or legislations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Management risk factors	1	2	3	4	5
28	Ambiguous planning due to project complexity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29	Resource management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30	Changes in management ways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31	Information unavailability (include uncertainty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32	Poor communication between parties Involved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Determine the risk management techniques applied in government financing

construction projects in Somali region?

s/n	Preventing method	Strongly disagree	disagree	neutral	Agree	Strongly agree
1	Use quantitative risk analysis technique for accurate time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Depend on subjective judgment to produce a proper program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Produce a proper schedule by getting updated project information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Plan alternative methods as stand-by	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Transfer or share risk to/with other parties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Determine the mitigation of risk management techniques applied in government financing construction projects in Somali region?

s/n	Mitigation method	Strongly disagree	disagree	neutral	Agree	Strongly agree
1	Increase manpower and/or equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	increase the working hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3	Change the sequence of work by overlapping activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Coordinate closely with subcontractor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	lose supervision to subordinates for minimizing abortive work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Determine the mitigation of risk management techniques applied in government financing construction projects in Somali region?

s/n	Risk analysis method	Strongly disagree	disagree	neutral	Agree	Strongly agree
1	Expert Systems (including software packages, decision support systems, computer-based analysis techniques such as Risk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Probability analysis (analyze historical data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Sensitivity analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Simulation analysis using simulator computer packages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Direct judgment using experience and personal skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Comparing analysis with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	similar projects					
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Appendix C: impact of risk factors on construction project in Somali region

CLIENTS				CONTRACTORS				CONSULTANCY			
ID	RII	Rank	Percent	ID	RII	Rank	Percent	ID	RII	Rank	Percent
1	0.52235 3	1	100.00%	1	0.96	1	96.10%	1	0.99	1	100.00%
9	0.52	2	96.10%	24	0.96	1	96.10%	9	0.97	2	96.10%
14	0.51764 7	3	92.30%	11	0.95	3	92.30%	14	0.96	3	92.30%
4	0.51058 8	4	84.60%	9	0.94	4	88.40%	4	0.95	4	84.60%
18	0.51058 8	4	84.60%	14	0.93	5	84.60%	18	0.95	4	84.60%
22	0.50823 5	6	76.90%	4	0.92	6	65.30%	22	0.93	6	76.90%
26	0.50823 5	6	76.90%	18	0.92	6	65.30%	26	0.93	6	76.90%
12	0.49647 1	8	69.20%	20	0.92	6	65.30%	12	0.92	8	73.00%
27	0.49647 1	8	69.20%	22	0.92	6	65.30%	8	0.91	9	69.20%
10	0.49411 8	10	61.50%	26	0.92	6	65.30%	10	0.89	10	61.50%
21	0.49411 8	10	61.50%	8	0.91	11	57.60%	23	0.89	10	61.50%
6	0.49176 5	12	50.00%	12	0.91	11	57.60%	20	0.88	12	50.00%

8	0.49176 5	12	50.00%	15	0.90	13	50.00%	24	0.88	12	50.00%
24	0.49176 5	12	50.00%	16	0.90	13	50.00%	25	0.88	12	50.00%
11	0.48941 2	15	46.10%	17	0.90	15	46.10%	7	0.87	15	42.30%
3	0.48235 3	16	34.60%	7	0.89	16	34.60%	13	0.87	15	42.30%
17	0.48235 3	16	34.60%	13	0.89	16	34.60%	5	0.84	17	38.40%
20	0.48235 3	16	34.60%	25	0.89	16	34.60%	11	0.81	18	34.60%
23	0.47764 7	19	30.70%	21	0.85	19	30.70%	3	0.76	19	23.00%
15	0.47058 8	20	26.90%	3	0.83	20	26.90%	15	0.76	19	23.00%
13	0.46352 9	21	19.20%	2	0.81	21	23.00%	21	0.76	19	23.00%
19	0.46352 9	21	19.20%	23	0.79	22	19.20%	16	0.75	22	19.20%
2	0.45647 1	23	11.50%	10	0.78	23	15.30%	17	0.73	23	15.30%
25	0.45647 1	23	11.50%	19	0.76	24	11.50%	6	0.69	24	11.50%
5	0.45411 8	25	7.60%	27	0.73	25	7.60%	2	0.65	25	7.60%
7	0.45176 5	26	3.80%	6	0.56	26	3.80%	27	0.56	26	3.80%

16	0.41647 1	27	0.00%	5	0.34	27	0.00%	19	0.48	27	0.00%
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