MAKERERE UNIVERSITY

MAKERERE UNIVERSITY BUSINESS SCHOOL

ASSESSMENT OF RISK MANAGEMENT PRACTICES IN THE IMPLEMENTATION

OF MBALE-TIRINYI ROAD PROJECT

BY

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PLAN B

DECLARATION

I, **ODHIAMBO VALARIE NANCY AUMA,** hereby declare that this research report is my original work and has never been submitted in any other institution of higher learning for any purpose or academic award.

Signature .... Date...04...MARCH...2022 ,

ODHIAMBO VALARIE NANCY AUMA

2017/HD10/372U

APPROVAL

This is to certify that this research report by **ODHIAMBO VALARIE NANCY AUMA** has been done under my supervision and is ready to be submitted with my approval as a supervisor and my signature has been appended below.

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Supervisor

DEDICATION

This research report is dedicated to the family of Mr. & Mrs. Deden Ouko, you have been an inspiration to me through your hard work, your commitment and wisdom, without you, I would not be what I am.

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LIST OF ACRONYMS

CVI	:	Content Validity Index
MUBS	:	Makerere University Business School
RUSS	:	Road User Satisfaction Survey
UNRA	:	Uganda National Road Authority
URF	:	Uganda Road Fund

ABSTRACT

This study investigated the risk management practices adopted during the implementation of Mbale-Tirinyi road project. The study was guided by three study objectives which examining the risk management practices adopted, challenges that affected the implementation of risk management practices in the Mbale-Tirinyi road project and suggesting appropriate strategies that can improve risk management in road construction projects. The study adopted a cross sectional research design. The approach was both qualitative and quantitative. A self-administered questionnaire and interview guide were used to collect data from the field. The collected data was analyzed using Statistical Package for Social Sciences (SPSS Version.20) and the findings were presented in form of tables with statements, frequencies, percentages, mean, and standard deviation to make meaning of the study findings. The study findings revealed that UNRA adopted some risk management practices which included insuring their operations, monthly risk assessment and analysis, using external auditors to identify, screening out riskier supplies, having approved risk management policies and use of scoring model to predict future risk. However, UNRA encountered challenges which included lack of risk management skills by staff, poor site management, slow decision making, poor communication between parties, inadequate planning and project design and inadequate funding. In order to mitigate the challenges and improve the risk management practices, the study suggested that there is need for employing well-trained and skilled staff and motivating by high pay and other incentives, which can only been done when the government high funding to UNRA to help them increase risk management budget. There is need for putting in place mechanisms to get sufficient information to enable a comprehensive assessment of risks and system for monitoring the conditions of all operations. Furthermore, the top management should periodically review the risk management strategies with benchmarking from other organizations. This will help them know how other organization control similar risks in UNRA. It was also suggested that emphasis is needed to be put on insuring all risky operations.

CHAPTER ONE

INTRODUCTION

1.1   Introduction

In this chapter, the study variable is introduced through the background of the study, the statement of the problem, the purpose of the study, the study objectives, research questions, scope and significance of the study.

1.2   Background to the Study

Risk is an essential part of a firm because they are susceptible to uncertainties on daily basis (Nketekete, Emuze & Smallwood, 2016). Risk is commonly associated with uncertainty, as the event may or may not occur. Risk implies exposure to uncertainty or threat (Thangavel, 2018) and a decision to do nothing explicitly avoids the opportunities that exist and leaving the threats unmanaged (Hillson and Murray-Webster, 2017). However, inadequate risk assessment and inadequate monitoring can easily cause project failure (Sheila, 2011). For a project to be successful there is a need to ensure that all activities are carried out as planned (Farrell, 2015). Thus, organizations should have risks management strategies, policies and procedures to guide implementation (Alshatti, 2015). According to Duncombe and Searcy (2017), risk management is an ongoing process that continues through the life of a project. It includes processes for risk management planning, identification, analysis, monitoring and control. Many of these processes are updated throughout the project lifecycle as new risks can be identified at any time (Ayitey, 2012).

Several institutions across the world mostly those in construction sector have implemented risk management in their business operations because of the understanding

that risk exists as part of an environment in which they operate (Bhattarai, 2016). Wedawatta, Ingirige, Jones and Proverbs (2011) identified construction sector in United Kingdom being one of the most risky ventures and exposed to the vagaries and extremes of climate change. The high risk exposure to adverse weather in the construction sector was attributed to poor risk management strategies. These included negative individual attitudes and informal organizational culture, low levels of technical expertise, poor disaster risk management procedures, poor planning activities, low levels of capital formation to manage recovery efforts and poor linkages with national agencies and technical support institutions (Wedawatta et al., 2011)

In Sub-Saharan Africa, risk management in the construction sector is formless and shapeless compared to the developed countries that have proper risk management frameworks that identifies, monitors and controls risks. The level of adoption of formal risk management practices is in Sub-Saharan Africa is not widely studied either. In Ghana for instance, Boadua, Fianko and Chileshe (2015) observed a limited level of adoption of formal risk management practices among construction oriented firms, with low levels of procedural documentation. Limited information on risk management practice and poor implementation such practices affects project performance success in terms of project cost and quality.

In order to enhance the management of construction risks, the Uganda National Roads Authority (UNRA) implemented risk management practices in all their road construction projects because of the understanding that risk exists as part of an environment in which they operate (UNRA Report, 2017; Bhattarai, 2016). The effective management of risk is

aimed at limiting cases of frauds, embezzlement, environment degradation and prevent all the likelihoods that projects may fail to be completed (Muzaale & Auriacombe, 2018).

UNRA implemented the commencement of the Mbale-Tirinyi Road in 2016 through Dott Services as the main contractors. It employed a consultant to identify and mitigate the risks thereby increase the project success (UNRA Report, 2017). The risk management practices focusing on resource, personnel, control, ligation and insurance were put in place. However, in May 2017, UNRA terminated the 73.3 billion contract awarded to Dott Services in 2015 to rehabilitate the 100 kilometer road because the contractor had failed to comply with the contractual obligations. The project experienced schedule challenges to critical path activities which delayed project completion rate because by the time UNRA terminated the contract, the physical progress on the Mbale-Tirinyi road was 19.09 percent against the planned 94.46 per cent (Uganda Road Fund Report, 2017; Muzaale & Auriacombe, 2018). The road was left in a sorry state with open potholes and water channels. But after going to courts, Dott Services won the case and it was given another contract to reconstruct the road at a high budget of Shs135.3 billion Shillings in a period of 25 months (Uganda Road Fund Report, 2017).

It is worth noting that the risk management practices were based on a well-defined granting practices and procedures supported by the UNRA governance structures. The adoption of risk management practices was demonstrated to yield positive outcomes in a variety of contexts. The risk were classifies and limits/thresholds were set in all project operations. However, Mbale-Tirinyi road project failed to be completed in time with the initial approved budgets regardless having risk management practices in place. Furthermore, details regarding risk management practices at Mbale-Tirinyi road project

remain less documented. This mandated need for this study to explore risk management practices at Mbale-Tirinyi road project.

1.3 Statement of the Problem

Risk management practices in project implementation are important because various undesirable events have affected the positive outcome of the project expectations. Like any other institution, UNRA has a well-defined risk management framework that the institution follows in managing risks in all road construction projects it under takes (UNRA, 2017). Despite that, the Mbale-Tirinyi road project by Uganda National Roads Authority has exposed and exacerbated latent weaknesses in the risk management especially those due to backlog of maintenance, which lately has depressed network performance indicators and increased road user congestion (UNRA Performance Report for the Financial Year 2017-18). Exaggerated unit cost of infrastructure including roads has caused a hemorrhage of about $3billion per year through under-pricing of utilities and mismanagement of the projects. Not surprisingly, Road User Satisfaction Survey (RUSS) results for 2018 released by Uganda Road Fund (URF) last July revealed a marked decline in satisfaction level, from 51.7 per cent in 2015 to 45 per cent in 2017. Uganda National Roads Authority (UNRA) construction projects continued to experience challenges such as narrow, dusty, accidents, prone congested roads, wastage of project resources, delayed construction and poor quality of work. And this could be attributed to inappropriate risk management practices (Ministry of work and transport report, 2018). Therefore, this study sought to close this gap by investigating the risk management practices adopted during the implementation of Mbale-Tirinyi road project.

1.4   Purpose of the Study

The study investigated the risk management practices adopted during the implementation of Mbale-Tirinyi road project.

1.5   Objectives of the Study

i.   To examine the risk management practices adopted in the Mbale-Tirinyi road project.

ii.   To examine challenges that affected the implementation of risk management practices in the Mbale-Tirinyi road project.

iii.   To suggest appropriate strategies that can improve risk management in road construction projects.

1.6   Research Questions

i.   What were the risk management practices adopted in the Mbale-Tirinyi road project?

ii.   What challenges affected the implementation of risk management practices in the Mbale-Tirinyi road project?

iii.   What strategies can be used to improve risk management in road construction projects?

1.7   Scope of the study

1.7.1   Conceptual scope

The study focused on the risk management practices, challenges and appropriate strategies to improve risk management practices in road construction projects.

1.7.2   Geographical Scope

The study was carried out in Uganda National Roads Authority (UNRA) particularly the Mbale-Tirinyi road construction project.

1.7.3   Time scope

This study covered a period ranging from 2016-2019 because it is within this time that Uganda government release funds for the road construction to commence. And above all, the road was sighted to have been characterized as in sorrow state and cost-ineffectiveness had been awarded in this period.

1.8   Significance of the Study

   i.   The study will contribute to improvements in risk assessment which will help project managers to apply appropriate project risk management practices.

  ii.   The study will reduce the information gap on risk management practices in the road construction projects in Uganda.

 iii.   The study will be of importance to the management of UNRA and Ministry of Works and Transport as this information will be vital in formulating risk management standards.

 iv.   Furthermore, the study will act as point of reference by future researchers in carrying out researches about the variable examined in relation to the field of risk management.

CHAPTER TWO
LITERATURE REVIEW

2.1   Introduction

This section presents reviewed literature that addresses the research questions of the study as discussed by different authors in relations risk management practices.

2.2   Risk

Risks can be known or unknown (Chapman & Ward, 2003). Unknown risks are referred to as uncertainties. Jaafari (2010) defines uncertainty in project contexts as "an unknown probability of effect of a project variable on its objective function". A further extension of Jafaari (2011) postulation is that certain events have a 100% probability chance of occurrence, while totally uncertain events have 0% probability chance of occurrence. Risk has to be understood as the uncertainty that can be measured, while uncertainty is the risk that cannot be measured (Serpella, Ferrada, Howard & Rubio, 2014). In the construction industry, risk is often referred to as the presence of potential or actual treats or opportunities that influence the objectives of a project. Risk is also defined as the exposure to the chance of occurrences of events adversely or favorably affecting project objectives as a consequence of uncertainty.

2.3   Risk management practices

According to Walewski (2003), no standard definitions or procedures exist for what constitutes risk management practices. It is well accepted that risk can be effectively managed to mitigate its adverse effects on project objectives, even if it is inevitable in all project undertakings. The source of risk includes inherent uncertainties and issues related to the company's fluctuating project margin, competitive bidding process, job site

productivity and the political situation, inflation, contractual rights, and market competition (Rezakhani, 2012).

Pejman (2012) revealed that, it is important for the construction companies to face these uncertain risks by assessing their effects on the project objectives because a risk quantitative method allows deciding which of the project is more risky, planning for the potential sources of risks in each project, and managing each source during construction. It is important that risk is distinguished from uncertainty to allow application of risk management practices like risk avoidance or prevention, risk control (loss control or risk mitigation), risk transfer and risk retention as explained below.

2.3.1. Risk avoidance/prevention

According to Mikaela (2011) and Sibomana, (2015), if the risk is classified as bringing negative consequences to the project, it is of importance to review the project's aim. In order words, if the risk has significant effect on the project, the best solution is to avoid it by changing the scope of the project or, worst scenario, cancel it. There are many potential risks that a project can be exposed to, and which can affect project success (Mikaela, 2011).This is why risk management is required in the early stages of a project instead of dealing with the damage after the occurrence of the risk (PMI, 2004; Sibomana, 2015). They further revealed that, avoidance means that by looking at alternatives in the project, many risks can be eliminated. If major changes are required in the project in order to avoid risks, Ropel (2011) further revealed that, applying known and well developed strategies instead of new ones, even if new ones may appear to be more cost efficient. In this way, risks can be avoided and work can proceed smoothly since the strategy is less stressful to the users.

2.3.2. Risk control or reduction/mitigation

Sibomana, (2015) revealed that, by having an overview over the whole project makes it easy to identify problems which may causing damage. In order to reduce the level of risk, the exposed areas should be changed (Michaela, 2011).This is a way of minimizing the potential risks by mitigating their likelihood (Ropel, 2011). Mhetre *et al.,* (2016) revealed that, one way to reduce risks in a project is to add expenditures that can provide benefits in the long term. Some projects need invest in guarantees or hire experts to manage high risk activities. Those experts may find solutions that the project team has not considered. Furthermore, Ropel, (2011) and Sibomana, (2015) revealed that, risks should be reduced and also be shared with parties that have more appropriate resources and knowledge about the consequences. Sharing can also be an alternative, by cooperating with other parties. In this way, one project team can take advantage of another's resources and experience. It is a way to share responsibilities concerning risks in the project (Ropel, 2011; Sibomana, 2015).

2.3.3. Risk transfer

Mhetre *et al.,* (2016) revealed that, if a risk can be managed by another expert who has a greater capability or capacity, the best option is to transfer it. Abiola and Olausi (2014), states that the risk should be transferred to those who know to manage it. Risks can be transferred to the client, contractor, subcontractor, designer etc, depending on the risk's character. As a result, this could lead to higher costs and additional work, usually called risk premium. It must be recognized that the risk is not eliminated; it is only transferred to the party that is best able to manage it (PMI, 2004). Shifting risks and the negative effects also brings an option when the risks are outside project management's control. The situation may also consist of catastrophes that are rare and unpredictable in a certain

environment. Such risks that are beyond the management's control should be transferred through insurance companies (Sibomana, 2015).

2.3.4. Risk Retention/Acceptance

Serpella *el at.,* (2014) argued that when a risk cannot be transferred or avoided, the best solution is to retain the risk. In this case the risk must be controlled, in order to minimize the effect of its occurrence. Retention can also be an option when other solution is uneconomical (Mikaela, 2011; Serpella *el at.,* 2014). It is impossible in reality to take advantage of all opportunities and eliminate all threats to the project, but it is possible to at least be aware of the threats and opportunities through the documentation and identification of them. The usage of this strategy is justified when it is not possible to respond to the risk by the other strategies, or when the grandness of the risk makes a response unreasonable (Mhetre *et al.,* 2016). This risk response approach essentially means taking a conscious risk and to deal with the consequences as they occur.

2.4   Challenges to risk management practices

According to Fandi and El- Sayegh (2016), a shortage of skilled manpower, poor supervision, poor site management; unsuitable leadership and a shortage of quality equipment are among the factors that contribute to poor risk management, and the subsequent poor performance of construction projects. Otim and Alinaitwe (2013) add that conflict, poor workmanship and incompetent contractors are among the challenges to risk management practices. Otim and Alinaitwe (2013) highlighted such challenges to risk management practices are not limited to road construction projects but affects the whole construction industry.

According to Carmichael and Balatbat (2015), poor risk management in Hong Kong's construction projects has been as a result of poor site management and supervision; unforeseen ground conditions; slow decision-making among, client-initiated variations and other necessary variations of works. Sambasivan and Soon (2017) concluded that the 10 most important poor risk management in construction industry are poor planning by contractors; poor site management by contractors; contractors with inadequate experience; clients with inadequate finance to pay for completed work; problems with subcontractors; shortages in material; labour shortages; unavailability of quality equipment; lack of communication between parties; and mistakes during the construction stage. Varying expectations lead to higher construction costs and delays, while quality is compromised.

Meng (2015) states that problems in the construction industry commence when the correct payment is not received on the right date. Receiving delayed payments could lead to friction between contractors and employers which may result into risks being poor managed. If not dealt with timeously, relationships could dissolve completely hence affecting the project operations. Additionally, Meng (2015) and Ayudhya (2014) revealed that quality fluctuations in materials are also a big challenge to risk management in construction projects. However, fluctuations in labour, including plant costs; construction delays associated with time overruns; inadequate planning; inadequate project design; unforeseen circumstances due to third parties; and variation orders were also found to be challenges to risk management in road construction in Uganda. .

A number of studies have set out to identify challenges to risk management practices in road construction projects. Ondari (2013) revealed that there are many direct challenges

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that range from design, specifications, environment, and other construction-related factors; while the indirect factors are mostly managerial. Enshassi, Najjar and Kumaraswamy (2017) noted that characteristics such as site layout, the experience levels of site staff, consistency of design documents, the contractor's financial power and the availability of construction materials are a big factor in managing risk in construction projects.

2.5   Appropriate strategies that can be implemented to improve on risk management practices

According to Zwikael, (2008) top management support is considered to be among the critical success factors for risk management. A crucial part of a successful risk management process is top management support, the benefit of which is related to improving decision making in order to manage the risks faced. Supportive top-level management responds to business processes and manages risk. Successful mitigation or bearing of risk is contingent upon commitment and support from top management.

Kessy (2015), revealed that giving additional motivation to staff in risk management department can help improve on they handle risks. Risk management should be handled by well-trained staff with skills that can implement organizations strategies in regards to risk management. Such staff should have skills to assess and analyze the organization's operations so as only those operations that are risk free or with minimal risks are considered.

There is need to put in place a system for monitoring the overall composition and quality of the risk management plan. Organizations need to develop and implement comprehensive procedures and information systems to monitor the condition of all

operations in the in firms. Specific individuals should be responsible for monitoring risks and risk management; including ensuring that relevant information is passed on to those responsible for assigning internal risk ratings (Aseyo & Bichanga, 2013). Similarly, Hartmann (2009) on managing risks revealed that institutions should have in place a system for the ongoing monitoring of their various risk-bearing activities. Organizations must have in place a system for monitoring the condition of each item if they are to identify and manage risks.

Dario (2017) urged organizations to establish an efficient risk management, it is of course required to have a systematic methodology but also various knowledge and experience, the latter might be considered even more important in a lot of cases (Serpella *et al.,* 2014; Dario, 2017). Given the potential economic and technical implication of loss of knowledge that is bestowed on organizations and individuals, it is considered crucial that strategies exist that deals with the issue of knowledge preservation to handle the organization risks.

Tetteh (2012) argued that organizations should establish and enforce internal controls and other practices to ensure that exceptions to policies, procedures and limits are reported in a timely manner to appropriate level of management for action. Furthermore, organization must have a system in place for early remedial action on deteriorating operations. Organizations should appreciate the need to identify measure, monitor and control their activities as well as to determine that they hold adequate capital against the risks and that they are adequately compensated for the risks exposed to.

1n another study, Gitonga (2015) examined the use of benchmarking for purposes of continuous improvement and reduction in risk occurrence in the construction industry in Kenya. Benchmarking develops standard best practices in any one business, through comparison with the leading firms in the industry. The findings revealed that benchmarking was not widely used as a formal practice, despite the fact that most firms were aware of the versatility of the technique. Benchmarking was being done on an *adhoc* basis from one construction project to another and also informally among competitors. Substantial performance improvement through risk management was one of the key benefits that emerged as a consequence of benchmarking.

Chen et al. (2014) proposed different risk management strategies for the different risk clusters as a means of enhancing firm performance. Risk management strategies aimed at mitigating the risk of cost overruns included agreeing on contract prices for materials at various stages of the project to hedge against the risk of price volatilities. Chen et al. (2014) also agreed that management factors could be controlled through use of qualified and experienced personnel at all stages of the project life cycle.

The use of insurance has demonstrated positive correlation with the value of a firm and risk control. For instance, Zhan (2007) conducted an empirical investigation on the cross-sectional relationship between firm value, risk control and the deployment of property insurance. The research demonstrated a positive relation between the variables. However, this relationship only applied to firms with above average financial performance and relatively high leverage (measured as long term debt scaled by total assets).

Ondara, (2017) proposed that there should be a higher level of involvement of construction sector professionals charged with offering expert advice and assistance on implementation of risk management strategies. Awareness creation among clients is another front that can optimize the benefits of risk management practice implementation, through increased uptake and compliance. The government should encourage activities that encourage proper risk management and risk sharing cross the entire construction value chain (Ondara, 2017). This would enable firm management make informed choices when assigning resources to maximize on efficiency and effectiveness in the construction firms leading to reduced risks and increased shareholder value.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents a description of the research methodology that was used in conducting this research study. It specifically presents the research design, the study population, the sampling design and sample size, data sources, data collection instruments, validity and reliability of the data collection instruments, data processing and analysis and ethical consideration.

3.2 Research design

This study was carried out using a cross sectional research design. A cross-sectional survey design is a research design that allows data collection from different individuals at a single point while using that collection tool (Kothari, 2014). In line with the study objectives, the cross sectional research design was appropriate for exploring the risk management practices used in the construction of Mbale-Tirinyi road. The tool was used to collect a large amount of data from the field in a highly economical way. The study utilized mixed method approach techniques: quantitative and qualitative data were considered. Quantitative approach allowed soliciting information that is quantifiable, while the qualitative approach allowed information that cannot be quantifiable (Mugenda & Mugenda, 2005). The mixed-method approach was used to allow triangulation by ensuring that the strengths balance the limitations of one type of data. The qualitative data opinions were used to support the quantitative data as a way of allowing the study settings to be non-controversial and with minimal bias.

3.3   Target Population

Target population as described by Borg and Gall (2009) is a universal set of study of all of real or hypothetical set of people, events or objects to which an investigator/researcher wishes to generalize the result. This study targeted 44 people who are the members of risk management department at UNRA and staff members that were part of Mbale-Tirinyi road project (UNRA Report, 2017). The population comprised of 07 members in risk management department and 37 others staff members who were part of Mbale-Tirinyi road project.

3.4   Sample Size and procedure

The target population had 44 people who were the members of risk management department at UNRA and staff members that were part of Mbale-Tirinyi road project. A census was carried for the study. Census was used because the target population was manageable and therefore data was collected from the whole population (Masuku & Singh, 2014).

3.5   Data Source

The study used primary data. Data was collected using the questionnaires and interview guide designed to capture information that was useful in answering the research questions. The information was obtained through the use of interview guide that was used to interview the members of risk management department of Uganda National Roads Authority. The questionnaires were administered to other staff members that were on Mbale-Tirinyi road construction project.

3.6   Data collection instrument

The questionnaire and interview guide was used to collect information in this study.

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The researcher used pre-coded questions anchored on a five point Likert scale ranging from strongly disagree (1) to strongly agree (5) which were used to collect the data. A self-completion questionnaire was used on members because it's the most cost-effective in collecting data (Kent, 2007). A closed-ended questionnaire was employed to limit the respondents from giving irrelevant information (Mugenda &Mugenda, 2013). This was used on staff members who were part of Mbale-Tirinyi road project because it was presumed that they all had equal information regarding the problem under study.

According to Onen and Oso (2009), the interview guide allows the respondent to give an elaborate response about the phenomenon under inquiry. The interview guide had structured questions that were used to get responses from the members of risk management department of UNRA through a face to face interview. The members in risk management department were interviewed because they had more information to benefit the study that could not be collected using a closed-ended questionnaire.

3.7   Measurement of variables

Risk management practices were measured in terms of risk management planning, risk identification, risk analysis, risk response planning, and risk monitoring and control based on Eskesen et al (2004) in Banaitiene and Banaitis (2012) in their study of risk management practices in construction projects on a five point Likert scale. Similarly, challenges due to risk management and how these challenges could be mitigated were measured on a five point Likert scale where 5 represented "strongly agree" 4 – "agree" 3 - "neutral" 2 – "disagree" and 1 represented "strongly disagree". This revealed how respondents were feeling about the items presented to them.

3.8   Data Quality Control

The study ensured quality results by conducting validity and reliability of data collection instruments (Yin, 2014).

3.8.1 Validity

Validity refers to the degree to which the instrument measures what it is supposed to measure (Amin, 2005). In this study, the questionnaire was discussed with the supervisor thoroughly to minimize ambiguity. The opinions and views from the supervisor were used to modify the questions. In addition, the Content Validity Index (CVI) was calculated. Nunnally (1978) states that a content validity index of 0.7 as threshold was realized for the instrument and were adopted as valid and suitable for data collection which are realized.

Table 3.1: Validity test

Construct	Total Items	Valid Items	CVI
Risk Management Practices	09	08	0.89
Challenges	10	09	0.90
Strategies	13	11	0.85

3.8.2 Reliability

Reliability is the degree to which a set of variables are consistent with what they are intended to measure (Amin, 2005). Cronbach's alpha value was computed to measure the reliability of the items used. The higher the coefficient the better the instrument. The alpha of 0.7 and above for categories indicated that the set of items used to measure these variables was reliable as recommended (Amin, 2005).

Table 3.2: Reliability test of tools

Construct	Item tested	Alpha values
Risk Management Practices	08	.817
Challenges	09	.868
Strategies	11	.797

3.9   Data Collection Procedure

After approval of data collection tools by the supervisor, the researcher obtained an introductory letter from MUBS Research Department. The University introductory letter introduced the researcher to the respondents. The researcher used the University introductory letter to seek permission from the Management of Uganda National Roads Authority to carry out a study in the organization.

3.10   Data Analysis and processing

The researcher used a period of two week to collect the data. Data processing involved translating the answers on a questionnaire into a form that can be used to produce statistics (Hyndman, 2008). After data collection, the quantitative data was checked, sorted, and captured showing the responses of each category of variables using a statistical package for social scientists (SPSS) Version. 20. Descriptive statistics were generated in form of frequencies, percentages, mean, and standard deviation according to the research questions. Qualitative data were analyzed by transcribing the recordings and manually analyzing the data by getting familiar with the data looking for basic observations and Identifying patterns and connections using content analysis. The content analysis approach was the primary method of analyzing the data collected to determine

the adequacy of the information, credibility, usefulness and consistency (Mugenda & Mugenda, 2013). Analyzed data were directly expressed in paraphrased descriptions.

3.11   Ethical Considerations

Confidentiality of the respondents' views and opinions was held. The researcher ensured that all responses provided are filled in questionnaires and used for only academic purposes. During data collection, access to documents was done with formal approval by relevant authorities. The names, particulars and other details that would expose identification of respondents were not sought.

Consent of the respondents was considered ideal and participants were made to understand the study and give their informed consent to participate in the study. Only respondents who gave their informed consent voluntarily were involved in the study.

Throughout literature search, review and citation in the study, the researcher ensured acknowledgement to authors of different materials used. More so, most of the information read was paraphrased to relate it to the current study as well as avoid any traces of plagiarism.

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF STUDY FINDINGS

4.1.1 Introduction

This chapter presents and interpreted the study findings. It presents the descriptive statistics on the respondents' bio-data, descriptive statistics in form of percentages, means, and standard deviations. The study findings are presented and analyzed following the specific research objectives which included examining the risk management practices adopted, examining challenges that affected the implementation of risk management practices in the Mbale-Tirinyi road project and suggest appropriate strategies that can improve risk management in road construction projects.

4.2 Response Rate

The number of respondents that managed to respond back and those who failed to respond back are shown in the figure below.

Figure 4.1: Pie chart showing the response rate
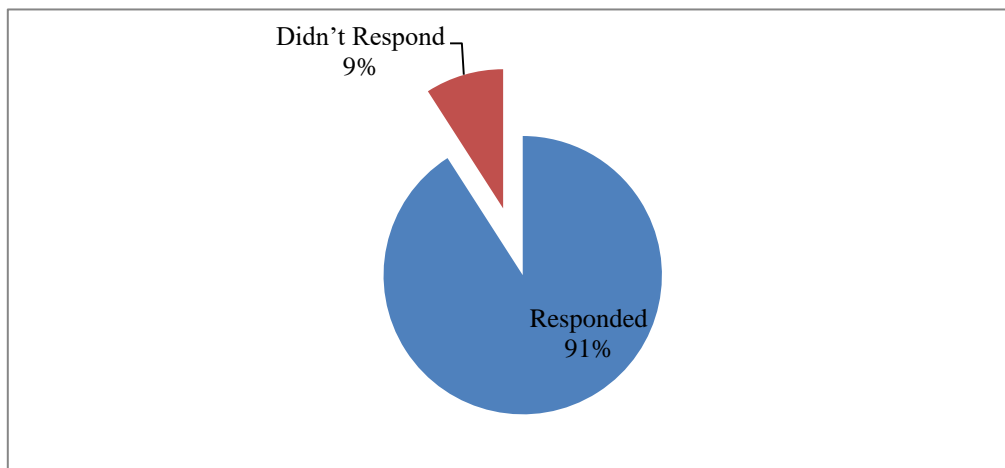
From figure 4.1 above, it is seen that (40) 91% of the respondents responded back while (04) 7% didn't respond back. However, this means that the response rate was well above

the 70% as recommended by the Guttmacher Institute, (2006) who assert that for a study to be considered satisfactory, the response must be above that percentage.

4.3   Bio-data of respondents

The bio-data information of respondents that participated in the study was established to ascertain the nature of respondents in relation to their; age, gender, education and length spent working with UNRA. The findings are presented in form of frequencies and percentages as shown in the tables below.

Table 4.1: Gender of respondents

Item	Category	Frequency	Percentage
Gender	Female	31	77.5
	Male	9	22.5
	Total	**40**	**100.0**
Age of respondent	18-29	1	2.5
	30-39	19	47.5
	40-49	17	42.5
	50 +	3	7.5
	Total	**40**	**100.0**
Level of education	Primary	-	-
	Secondary	-	-
	Diploma	1	2.5
	Degree	28	70.0
	Masters	11	27.5
	Total	**40**	**100.0**
Number of years spent with UNRA	Less than a year	1	2.5
	1-4 years	13	32.5
	4-8 years	19	47.5
	Above8 years	7	17.5
	Total	**40**	**100.0**

Source: Primary data 2021

4.3.1 Gender of respondents

From table 4.1 above, majority 77.5% of the respondents were male while 22.5% were female. This implies that there were more men than women on the Mbale-Tirinyi road project. Although the majority of the respondents were male, the views of female respondents at 22.5 were good enough to capture the gender perspective.

4.3.2 Age bracket of respondents

Results in table 4.1 above indicated that majority of the respondents 97.5% were above the age of 30 years as compared to only 2.5% who were below 30 years. The results implied that majority of the respondents were mature enough with enough time experience to understand the under study and were in good position to give reliable information.

4.3.3 Level of education attained by respondents

In Table 4.1 above, it is seen that majority 70.0% of the respondents had attained Bachelor degree, it was followed by 27.5% who had attained Masters degree and lastly 2.5% had attained diplomas. This implies that respondents were largely educated to understand questions asked and they were in good position to give reliable answers.

4.3.4 Time spent working with UNRA

Results in the table 4.1 above, majority 65.0% of respondents had spent over 4 years at working with UNRA. Only 35.0% has spent less than 4 years working UNRA. This signifies that the majority of respondents had been working with UNRA a good time. Therefore, they were in a good position to give reliable information regarding the study objectives.

4.4   Descriptive Statistics basing on the study objectives

4.4.1   The risk management practices adopted

The first study objectives examined the risk management practices adopted in the Mbale-Tirinyi road project. All respondents were instructed to rank their responses on a scale of 1-5 (1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly agree). The responses percentages, means, and standard deviations were used to interpret the results.

Table 4.2: The risk management practices adopted

Statement	*Percentages (%)*					*Mean*	*S.Dev.*
	SD	**D**	**N**	**A**	**SA**		
All operations were insured	2.5	5.0	25.0	37.5	30.0	**3.87**	**.992**
Periodic evaluation reports were regularly prepared	-	2.5	2.5	75.0	20.0	**4.12**	**.563**
Riskier supplies were always screened out	-	12.5	35.0	40.0	12.5	**3.53**	**.877**
Monthly internal risk assessment were always carried out	-	5.0	10.0	70.0	15.0	**3.95**	**.677**
External audits were usually hired to identify risks	2.5	10.0	2.5	60.0	25.0	**3.95**	**.959**
We had formally approved risk management policies	-	-	42.5	50.0	7.5	**3.65**	**.622**
Monthly comprehensive risk analysis was carried out	2.5	15.0	2.5	60.0	20.0	**3.80**	**1.018**
A scoring model was used to predict risk	2.5	12.5	20.0	52.5	12.5	**3.60**	**.955**

Source: Field data, 2021

From table 4.2 above, majority of the respondents 67.5% revealed that all operations were insured. This was supported by a higher mean value of (Mean = 3.87) and there was consistency in responses since the standard deviation was below one (Std. Dev =.992). This means that majority of the respondents agree that majority of operations during the construction of Mbale-Tirinyi road were insured. On the issue of periodic evaluation reports being regularly prepared, majority of the respondents 95.0% revealed that reports

were regularly prepared. This was supported by a higher mean value of (Mean = 4.12) and standard deviation below one (Std. Dev =.563), which means there were consistency their responses.

Still from table 4.1 above, that majority of the respondents 52.5% concurred that riskier supplies were always screened out during the construction of Mbale-Tirinyi road. This was supported by a higher mean value of (Mean = 3.53). Though some disagreements were registered, there was consistency in responses since the standard deviation was below (Std. Dev =.877), which means majority of the agreed that most risky supplies were screened out. Furthermore, majority of the respondents 85.0% concurred that monthly internal risk assessment were always carried out. This was supported by a higher mean value of (Mean = 3.95) and standard deviation was below one (Std. Dev =.677) which means that respondents consistently pointed out that monthly internal risk assessment were carried out during the project.

Still from table 4.2 above, majority of the respondents 85.0% concurred that external audits were usually hired to identify risks. This was supported by a higher mean value of (Mean = 3.95) and standard deviation was below one (Std. Dev =.959) which means that respondents consistently pointed out that external audits were usually hired to identify risks. Furthermore, majority of the respondents 57.5% revealed that there were formally approved risk management policies. These findings were supported by a higher mean value of (Mean = 3.65) and standard deviation was below one (Std. Dev =.622) which means that respondents consistently pointed out that there was formally approved risk management policies during the construction of Mbale-Tirinyi Road.

Still from table 4.2, majority of the respondents 80.0% revealed that monthly comprehensive risk analysis was carried out. This was supported by a higher mean value of (Mean = 3.80). However, the standard deviation was above one (Std. Dev =1.018), which means that not all respondents were not consistent in giving their responses. Therefore, section of respondents revealed that monthly comprehensive risk analysis was not carried out. Lastly, majority of the respondents 65.0% revealed that a scoring model was used to predict credit risk. This was supported by a higher mean value of (Mean = 3.60) and standard deviation was below one (Std. Dev =.955) which means that respondents consistently pointed out that a scoring model was used to predict credit risk during the construction of Mbale-Tirinyi Road.

A follow-up interview on the risk management practices adopted in the Mbale-Tirinyi road project was conducted and interview findings are presented Text Box 4.1 below.

Text box 4.1: Opinions on risk management practices adopted

Related to information presented in the questionnaires, information in interviews revealed that…… *we regularly hold project management meetings to discuss the risks in our operations. Adding on, was …..we have risk management and assessment teams that help in identification of the risks.* Relatedly, interviewees revealed, *….sometimes we have engagement meetings will all stakeholders such as consultants, employees, suppliers and project beneficiaries to discuss on project related risks …..* It was also revealed that; *….though some operations are insured, the UNRA management set some rules, regulations, guidelines and policies to ensure that risks during project implementation is minimized. ….these policies are revised on a monthly basis.*

Some interviewees revealed that; *….we encourage maintenance of sites on daily basis to monitor the exaction of daily project activities in relation to the program and the project site condition.* That said, it was also revealed that; *….UNRA has a risk management framework that help in identification and risk evaluation….., which helps the workers to take quicker actions to the risks identified and other riskier identified areas or operations.*

4.4.2   The challenges that affected the implementation of risk management practices

The second study objectives examined the challenges that affected the implementation of risk management practices in the Mbale-Tirinyi road project. Like objective one, all respondents were instructed to rank their responses on a scale of 1-5 (1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly agree). The responses percentages, means, and standard deviations were used to interpret the results.

Table 4.3: The challenges that affected the implementation of risk management practices

Statement	Percentages (%)					Mean	S.Dev.
	SD	D	N	A	SA		
Lack of risk management skills by staff	2.5	25.0	15.0	47.5	10.0	**3.38**	**1.055**
Poor supervision	2.5	50.0	22.5	15.0	10.0	**2.80**	**1.067**
Shortage of high quality equipment	7.5	40.0	25.0	25.0	2.5	**2.75**	**1.006**
Poor workmanship and incompetent contractors	-	45.0	25.0	25.0	5.0	**2.90**	**.955**
Poor site management	-	32.5	27.5	32.5	7.5	**3.15**	**.975**
Slow decision making	-	32.5	20.0	40.0	7.5	**3.22**	**1.001**
Poor communication between parties	7.5	17.5	42.5	27.5	5.0	**3.00**	**.986**
Inadequate planning and project design	-	27.5	17.5	42.5	12.5	**3.40**	**1.033**
Inadequate funding	2.5	32.5	22.5	25.0	17.5	**3.22**	**1.165**

Source: Field data, 2021

From table 4.3 above, majority of the respondents 57.5% revealed that some staff members lacked of risk management skills. This was supported by a higher mean value of (Mean = 3.38). However, there was variations in the responses since the standard deviation was above one (Std. Dev =1.055), which means that not all staff members lacked risk management skills. Then, on the issue poor supervision, majority of the respondents 52.5% disagreed with the statement. This was supported by a lower mean

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value of (Mean = 2.80). However, there was variations in the responses since the standard deviation was above one (Std. Dev =1.067), which means that cases of poor supervision were reported.

Furthermore, from table 4.3 above, that majority of the respondents 47.5% revealed that shortage of high quality equipment was not a big challenge. This was supported by a lower mean value of (Mean = 2.75). However, there was variations in the responses since the standard deviation was above one (Std. Dev =1.006), which that cases of shortage of high quality equipment were reported. On the issue of poor workmanship and incompetent contractors, majority of the respondents 45.0% opposed the statement. This was supported by a lower mean value of (Mean = 2.90) and standard deviation was below one (Std. Dev =.955) which means that respondents consistently pointed out that poor workmanship and incompetent contractors was not a challenge during the construction of Mbale-Tirinyi Road.

Still from table 4.3 above, that majority of the respondents 40.0% concurred that poor site management was a challenge during the construction of Mbale-Tirinyi Road. This was supported by a higher mean value of (Mean = 3.15) and standard deviation was below one (Std. Dev =.975) which means that respondents consistently pointed out that poor site management was a challenge during the construction. Then on the issue of slow decision making, majority of the respondents 47.5% concurred with statement. This was supported by a higher mean value of (Mean = 3.22). However, there was variations in the responses since the standard deviation was above one (Std. Dev =1.001), which means that not all respondents concurred with the statement. That said, majority 42.5% of respondents remained neutral of poor communication between parties. This was supported by a mean

value of (Mean=3.00) and there was no variation in the responses since the standard deviation was below one (Std. Dev =.986).

Furthermore, on the issue of inadequate planning and project design, majority of the respondents 65.0% concurred with the statement. This was supported by a higher mean value of (Mean = 3.40). Though some respondents did not consistently point it out because the standard deviation was above one (Std. Dev =1.033). Lastly, majority of the respondents 42.5% revealed that inadequate funding was a challenge during the construction of Mbale-Tirinyi Road. This was supported by a higher mean value of (Mean = 3.22). However, some divergent were registered since the standard deviation was above one (Std. Dev =1.165), which means not all respondents consistently said that they faced a challenges of inadequate funding.

In a follow-up interview on the challenges that affected the implementation of risk management practices in the Mbale-Tirinyi road project, interview findings were related to the information in the questionnaire and findings are presented Text Box 4.2 below.

Text box 4.2: Opinions on the challenges that affected the implementation of risk management practices

The information from the interviews revealed that…… *as an institution we mostly encounter the challenge of inadequate funding to support risk management. …workers are not well paid which sometimes demotivates the. ….also some materials required in risk management are not place because of lack of enough funds. …risk management experts are also expensive to hire hence making UNRA mostly rely on their internal staff.* The results also revealed that *…..there is slow decision making because of the bureaucratic tendencies in government institutions. This also affects how operations are conducted… this also slows down communication between UNRA and contractors and some contractors sometimes fill frustrated and threaten abandon the some projects.* Not with standing, it was also revealed that; *some workers lack enough risk*

4.4.3 The strategies that can improve risk management in road construction projects

The third study objectives examined the strategies that can improve risk management in road construction projects. Like objective one and two, all respondents under this third objective were instructed to rank their responses on a scale of 1-5 (1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly agree). The responses percentages, means, and standard deviations were used to interpret the results.

Table 4.4: The strategies that can improve risk management in road construction projects

Statement	Percentages (%)					Mean	S.Dev.
	SD	D	N	A	SA		
Employing well-trained and skilled staff	-	-	5.1	71.8	23.1	**4.18**	**.506**
Giving additional motivation to the staff in risk management department	-	15.4	25.6	48.7	10.3	**3.54**	**.884**
Putting in place strong internal control systems	-	-	5.1	69.2	25.6	**4.21**	**.522**
Increasing the budget for risk management	-	-	10.3	53.8	35.9	**4.26**	**.637**
Putting in place mechanisms to get sufficient information to enable a comprehensive assessment of risks	-	-	12.8	71.8	15.4	**4.03**	**.537**
Putting in place a system for monitoring the conditions of all operations	-	-	7.7	61.5	30.8	**4.23**	**.583**
Developing and utilizing an internal risk rating system	-	-	15.4	53.8	30.8	**4.15**	**.670**
The top management should periodically review the risk management strategies	-	-	12.8	38.5	48.7	**4.36**	**.707**
Benchmarking from other institutions on how they control risks	-	-	15.4	38.5	46.2	**4.31**	**.731**
Agreeing with supplies on contract prices for materials at various stages of the project to hedge against the risk of price volatilities	-	12.8	32.3	41.0	12.8	**3.54**	**.884**
Insuring risky operations	-	2.6	20.5	15.4	61.5	**4.36**	**.903**

Source: Field data, 2021

From table 4.4 above, majority of the respondents 94.9% revealed that employing well-trained and skilled staff will improve risk management in road construction projects. This was supported by a higher mean value of (Mean = 4.18) and standard deviation that was below one (Std. Dev =.506) which means that respondents consistently pointed out that employing well-trained and skilled staff improves road construction projects. Similarly, on the issue of giving additional motivation to the staff in risk management department, majority of the respondents 60.9% concurred with the statement. This was supported by a higher mean value of (Mean = 3.54) and standard deviation that was below one (Std. Dev =.884) which means that respondents consistently pointed out that there need for giving additional motivation to the staff in risk management department.

Furthermore, majority of the respondents 94.9% revealed that putting in place strong internal control systems can improve the risk management. This was supported by a higher mean value of (Mean = 4.21) and standard deviation that was below one (Std. Dev =.522) which means that respondents consistently pointed out that there need for place strong internal control systems as a way of improving the risk management in road construction. Then, on the issue of increasing the budget for risk management, majority of the respondents 89.7% concurred with it. This means that more funds are needed if risk management is to be fully handled well. This was supported by a higher mean value of (Mean = 4.26) and standard deviation that was below one (Std. Dev =.637) which means that risk management was under funded.

Still from table 4.4 above, that majority of the respondents 87.2% revealed that there is need for putting in place mechanisms to get sufficient information to enable a comprehensive assessment of risks. This was supported by a higher mean value of (Mean

= 4.03) and standard deviation that was below one (Std. Dev =.537) which means that information to enable a comprehensive risk assessment was a bit lacking. Furthermore, majority of the respondents 92.3% revealed that there is need for putting in place a system for monitoring the conditions of all operations. This was supported by a higher mean value of (Mean = 4.23) and standard deviation that was below one (Std. Dev =.583), which means that system for monitoring was a bit lacking.

Furthermore, majority of the respondents 84.6% revealed that there is need for developing and utilizing an internal risk rating system in managing risks. This was supported by a higher mean value of (Mean = 4.15) and standard deviation that was below one (Std. Dev =.670) which means that respondents consistently pointed out that the need for developing and utilizing an internal risk rating system as a way of improving risk management. Majority of the respondents 87.2% also revealed that there is need for the top management to periodically review the risk management strategies. This was supported by a higher mean value of (Mean = 4.36) and standard deviation that was below one (Std. Dev =.707) which means that top management could not have been regularly reviewing the risk management strategies of UNRA.

Still from table 4.4 above, that majority of the respondents 84.6% revealed that there is need for benchmarking from other institutions on how they control risks. This was supported by a higher mean value of (Mean = 4.31) and standard deviation that was below one (Std. Dev =.731) which means that majority concurred that benchmarking on risk control from other institutions may help. Furthermore, majority of the respondents 53.8% revealed that there is need for agreeing with supplies on contract prices for materials at various stages of the project to hedge against the risk of price volatilities.

This was supported by a higher mean value of (Mean = 3.54) and standard deviation that was below one (Std. Dev =.884), which means if prices for materials hedge against the risk of price volatilities, risk management would improve.

Lastly, majority of the respondents 76.9% revealed that there is need for insuring all risky operations in the road constructions. This was supported by a higher mean value of (Mean = 4.36) and standard deviation that was below one (Std. Dev =.903), which means if all risky operations are insured, damages insured will be recovered hence improving risk management and controlling of losses.

In a follow-up interview on strategies that can improve risk management in road construction projects, interview findings were related to questionnaire and findings are presented Text Box 4.3 below.

Text box 4.3: Opinions on strategies that can improve risk management

From interviews, a number of strategies were proposed; …*there is need for detailed engagement with all stakeholders related to the project….., its important, in that there is sharing of views on how risks can be identified and managed.* That said ...*there is need to develop a comprehensive risk management plan and make sure that all involved stakeholders adhere to it.* Furthermore, it was revealed ….*detailed routine review and audit of project inputs and related outputs need to be done to determine early any area which is unjustified and seem to be riskier.*

The interview findings also revealed that …*there is need for government to increase funding, ….it will not only help in increasing salaries of staff as a way of motivating them but also facilitate hiring of more risk management consultants to shade more like on how to management construction related risks.* Additionally, …*the funds will facilitate the training to staff members as a way of equipping them with more skills in risk management.* That said, …..*UNRA need to make risk management a top priority in all its operations.*

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussions, conclusions and recommendations of the findings in relation to the study. It is divided into four Sections; discussions of findings, conclusions, recommendations and areas for further studies. These sections were guided by the study objectives with focused on examining the risk management practices adopted, examining challenges that affected the implementation of risk management practices in the Mbale-Tirinyi road project and suggest appropriate strategies that can improve risk management in road construction projects.

5.2 Discussion of findings

5.2.1 The risk management practices adopted in the Mbale-Tirinyi road project

The results of the study revealed that UNRA has tried its level best to adopt some risk management practices. It is clear that the institution has put in place some risk avoidance practices such as having approved risk management policies aiming at avoiding the risks and screening out the riskier supplies all in efforts of making sure. This is done to minimize the potential for by mitigating their likelihood (Ropel, 2011). Furthermore, some risks are avoided by means of insuring as a way of sharing the risk burden with another entity. Risks are shared with parties that have more appropriate resources and knowledge about the consequences. The findings concurred with Ropel (2011) and Sibomana (2015) who pointed out that one project team can take advantage of another's resources and experience. It is a way to share responsibilities concerning risks in the project. Similarly, Mhetre *et al.,* (2016) revealed that, if a risk can be managed by another expert who has a greater capability or capacity, the best option is to transfer it.

The results of the study further showed that some risks are retained and controlled by UNRA. Some of the practices in places used to identify and manage such risks included periodic evaluation reports which are regularly prepared on a monthly basis show risk assessment results and supported by the external audits done by experts to identify the risks that could have not been identified by the internal team. These help by using a scoring model to predict the magnitude of the risks and forge way of how they can be controlled or managed. These findings concurred with Serpella *el at.,* (2014) and Mhetre *et al.,* (2016) who argued that when a risk cannot be transferred or avoided, the best solution is to retain the risk. It is impossible in reality to take advantage of all opportunities and eliminate all threats/risks to the project, but it is possible to at least be aware of the threats and opportunities through the documentation and identification of them to help in forging ways of handling them. The usage of this strategy is justified when it is not possible to respond to the risk by the other strategies, or when the grandness of the risk makes a response unreasonable. Therefore, the organization has to face those threats/risks by itself.

5.2.2 The challenges that affected the implementation of risk management practices in the Mbale-Tirinyi road project

The study results obtained revealed that despite some respondents disagreeing with some challenges, most statements posed them were indicated to the key challenges that affected the implementation of risk management practices in the Mbale-Tirinyi road project. Results for instance showed that some staff members lacked enough risk management skills which resulted into poor site management as a result of inadequate planning and project design. These finding agreed with Fandi and El- Sayegh (2016) who revealed that

a shortage of skilled manpower, poor site management and unsuitable leadership contribute to poor risk management, and the subsequent poor performance of construction projects. Poor risk management in construction industry are poor planning by contractors; poor site management by contractors; contractors with inadequate experience breed more mistakes during the construction stage hence poor performance of the construction project.

Furthermore, the study revealed that the bureaucratic tendencies in UNRA slowed decision making which distorted the chances of arresting some risks in their early stages. The management of UNRA took much time before making final decision how to release funds. That said, the funds that were released a bit late were also not adequate enough to facilitate all risk management operations. These findings correlated with Meng (2015) who stated that problems in the construction industry commence when the correct payment is not received on the right date. Receiving inadequate and delayed funds due slow decision making process could lead to friction between contractors and employers which may result into risks being poor managed.

However, findings showed that poor supervision was not a challenge and workmanship and contractors were competent. Besides that, the contractors had high quality equipment to use in road construction. This implied that the challenges that affected the implementation of risk management practices had nothing to do with quality of contractors and their equipment. Those these challenges have been highly stated to be affecting the risk management, the study findings opposed Sambasivan and Soon (2017) who concluded that poor risk management in construction industry are due to contractors with inadequate experience, unavailability of quality equipment and poor supervision.

5.2.3 The Appropriate strategies that can improve risk management in road construction projects

The results revealed that UNRA should employ well-trained and skilled staff that has the capacity to develop strong internal control systems and risk rating system to monitor all the operations. They should be in position put into place counter check measures so that they so that any emerging risks is detected and immediately ironed out. These findings are in line with Kessy (2015) who revealed that risk management should be handled by well-trained staff with skills that can implement organizations strategies in regards to risk management. Such staff should have skills to assess and analyze the organization's operations so as only those operations that are risk free or with minimal risks are considered. Aseyo & Bichanga, (2013), the management and staff should be position put in place a system for monitoring the overall composition and quality of the risk management plan. Organizations need to develop and implement comprehensive procedures and information systems to monitor the condition of all operations. Specific individuals should be responsible for monitoring risks and risk management; including ensuring that relevant information is passed on to those responsible for assigning internal risk ratings.

Furthermore, the UNRA funding should be increased to allow the authority increase on the budget of risk management. This help in motivating the staff members in the risk management department and offer them further trainings to equip their staff members with necessary skills to respond to emerging risks in time and well committed to do their work. These findings agreed with Kessy (2015) who revealed that there is need for giving additional motivation to staff in risk management department for them to handle risks properly. Therefore, this is a call for increase funding at allow salary increase and

facilitations for further studies and training as a way of equipping the workers with the required skills to deal with risks.

Further still, results opined to the top management should periodically review the risk management strategies with benchmarking from other organizations. This will help them know how other organization control similar risks in UNRA. That side, emphasis is needed to be put on insuring all risky operations as a way of transferring the risks and sharing the costs in case of losses. These findings are in line with Gitonga (2015) who examined the use of benchmarking for purposes of continuous improvement and reduction in risk occurrence in the construction industry Benchmarking develops standard best practices in any one business, through comparison with the leading firms in the industry. Ondara, (2017), the government should encourage activities that encourage proper risk management and risk sharing cross the entire construction value chain and to other organizations that well handle such risks such as insurance companies.

5.3   Conclusions

The study concluded that that the risk management practices adopted by UNRA during the construction of Mbale-Tirinyi road comprised of insuring of all construction operations to recover the costs in case of any loss and riskier supplies were always screened out. That said, the study also concluded that regular monthly risk assessment and analysis were always carried out in collaboration of internal and external auditors to prepare regular monthly reports to help the management of UNRA and contractors to use a scoring modeling predicting future risks as a way of them to develop management policies to encounter any risk that will come out in future.

Opinions and ideas from employees, management of UNRA showed that risk management practices in the construction Mbale-Tirinyi road exposed the institution to a number of challenges. The study concluded that some staff on the project lacked enough risk management skills which resulted into poor site management, inadequate planning & project design and poor communication between the parties. Furthermore, the study concluded that there was slow decision making and inadequate funding which resulted into failure to detect and control some risks at their early stages.

Finally, the study concluded that there were a number of strategies that could have been employed to improve risk management in road construction projects. The study pointed out some of these areas and concluded that they included employing well-trained and skilled staff, motivating the staff in risk management department, putting in place strong internal control systems and risk rating system to monitor all the operations and increasing the budget for risk management. The study also concluded that the top management should periodically review the risk management strategies with benchmarking from other organizations on how to control risks and also emphasizing insuring all risky operations.

5.4   Recommendations

Basing on the study findings, the study makes the following recommendations to improve credit risk management practices at UNRA.

There is need for management of UNRA to enhance the skills and training of staff particularly in risk analysis. This will enable detection of early warning signs of poor performance and other risky related areas.

For purposes of attaining a sustainable risk management practices, there is need to have and to adhere to stringent supplier selection conditions, terms and procedures which screen out the most risky related supplies. This is likely to reduce the association of UNRA with riskier companies and their risky related materials and operations.

There is need for management to avail resources to motivate and facilitate staff for an extensive follow up of all the operations. By doing so, the staff will feel as the own a stake in the institute and they will not tolerate in risky operation to take place in UNRA.

5.5   Limitations of the Study

(i) The researcher experienced delays in submitting back the answered questionnaires by respondents. This was due to busy schedules of respondents. This somehow delayed the data collection process but the delay was minimized through phone call reminders.

(ii) Some respondents were hesitant to disclose some information as they considered such information confidential for the institution. However, the researcher emphasized that the information shared was purely for academic purposes.

(iii) The fear of getting infected with COVID-19 since data collection was conducted at the time of high COVID-19 community transmission and this was during the time of 2nd wave community transmission. The researcher thrived through by making phone contacts of various respondents mostly telephone interview and also followed the recommended Ministry of Health SOPs.

5.6   Areas for further research

Since this study has examined risk management practices at UNRA which is a public institution and mostly dealing with construction of roads, the researcher recommends further research on risk management practices be examined in other sectors such as financial institutions and manufacturing companies since they are also exposed to many risks.

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APPENDICES
APPENDIX I: QUESTIONNAIRE

Dear Respondent,

I'm Odhiambo Auma Nancy Odhiambo, a student undertaking a Masters Degree in Business Administration at Makerere University Business School. Am conducting a study on assessing risk management practices on the implementation of Mbale-Tirinyi road project. I'm kindly requesting you to fill in and tick the most appropriate answer for questions presented below. The study is purely academic; therefore all the responses received will be treated with utmost confidentiality and will in no way be linked to you.

Section A: Bio-data

Please put a tick mark (√) in the option boxes provided or fill in the spaces provided.

1. Age of respondent

   18-29 ☐

   30-39 ☐

   40-49 ☐

   50+ ☐

2. Gender

   Male ☐

   Female ☐

3. Highest level of education attained

   Primary ☐

   Secondary ☐

   Diploma ☐

   Degree ☐

   Masters ☐

   Others:...

4. For how long have you been working with UNRA?

   Less than 1 ☐

   1-4 years ☐

   5 – 8 years ☐

   8 years and above ☐

49

For questions in Section B, C and D Please respond to the statements given below basing on the ranking scale.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly Agree

SECTION B: Risk management practices

Code	Item	Ranking				
		1	2	3	4	5
B1	All operations were insured					
B2	Periodic evaluation reports were regularly prepared					
B3	Riskier supplies were always screened out					
B4	Monthly internal risk assessment were always carried out					
B5	External audits were usually hired to identify risks					
B6	We had formally approved risk management policies					
B7	Monthly comprehensive risk analysis was carried out					
B8	A scoring model was used to predict credit risk					

SECTION C: Challenges to risk management practices

Code	Item	Ranking				
		1	2	3	4	5
C1	Lack of risk management skills by staff					
C2	Poor supervision					
C3	Shortage of high quality equipment					
C4	Poor workmanship and incompetent contractors					
C5	Poor site management					
C6	Slow decision making					
C7	Poor communication between parties					
C8	Inadequate planning and project design					
C9	Inadequate funding					

SECTION D: Strategies to improve risk management practices

Code	Item	Ranking				
		1	2	3	4	5
D1	Employing well-trained and skilled staff					
D2	Giving additional motivation to the staff in risk management department					
D3	Putting in place strong internal control systems					
D4	Increasing the budget for risk management					
D5	Putting in place mechanisms to get sufficient information to enable a comprehensive assessment of risks					
D6	Putting in place a system for monitoring the conditions of all operations					
D7	Developing and utilizing an internal risk rating system					
D8	The top management should periodically review the risk management strategies					
D9	Benchmarking from other institutions on how they control risks					
D10	Agreeing with supplies on contract prices for materials at various stages of the project to hedge against the risk of price volatilities					
D11	Insuring risky operations					

END

THANK YOU

APPENDIX II: INTERVIEW GUIDE FOR STAFF IN THE RISK MANAGEMENT DEPARTMENT

Self-Introductions: Researcher and Respondent

Questions

1) What are the processes involved in assessing the risks?

2) Under what criteria do suppliers and contractors become eligible to work with UNRA?

3) Do you have a formal procedure of handling risks?

4) Which risk management practices do you in place?

5) Are risk management related policies and procedures constantly reviewed? Usually on what basis?

6) What challenges do you face in regards to risk management practices?

7) What strategies can be undertaken to improve risk management practices?

End