INFLUENCE OF RISK MANAGEMENT STRATEGIES ON PROJECT PERFOMANCE: A SURVEY OF SELECTED INTERNATIONAL DEVELOPMENT ORGANIZATIONS BASED IN NAIROBI CITY, KENYA

By

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2015

Declaration

I declare that this research project report is my original work and has not been presented for any award in any other university.

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Dedication

This work of research is dedicated to my wife Felicia and my daughters Vanessa Annabel and Kylie Natasha.

Acknowledgement

I wish to acknowledge my Supervisor, Prof. Christopher Gakuu for ably guiding me, encouragement and his timely support during the preparation of this report.

The University of Nairobi for providing an enabling environment to pursue the course and in particular all the teaching faculty at the Department of Extramural Studies.

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To Google drive for web hosting data thus enabling my data to be secure while using online questionnaires

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Abbreviations and Acronyms

SPSS	Statistical Package for Social Science
PMI	Project Management Institute
PMBOK	Project Management Body of Knowledge
ODA	official development assistance
UNDP	United Nations Development Programme's
MS Excel	Microsoft excel
MS Access	Microsoft Access
H_0:	Null hypothesis; in statistical test this hypothesis states that there is no significant difference between specified populations, any observed difference being due to sampling or experimental error.
H_1:	Alternative hypothesis; in statistical hypothesis testing, the alternative hypothesis (or maintained hypothesis or research hypothesis) and the null hypothesis are the two rival hypotheses which are compared by a statistical hypothesis test.

Abstract

The purpose of this study was to present a systematic evidence based literature on the practice of risk management during implementation phase of project management and more specifically risk response plans and how they impact on the success of the project where success was seen as ability to utilize planned time to meet project objectives without experiencing delays or time overruns. Empirical literature is abound with the articles on the topic of risk management. However these publications fall short of mentioning how risk response strategies influence performance of projects in terms of duration in the context of international development projects. In the present paper the investigation sought to establish the level of correlation that exists between independent variables (various risk response strategies) and the dependent variables (project duration) additionally the investigation seeks to establish the most utilized and also most effective risk response strategy. The methodology applied was based on documentary study review and analysis of the concepts used by the literature. Relevant data for the investigation was collected by way of printed and online structured questionnaires that was tested for validity and reliability with questions that were administered to project/programme managers involved in management of international development projects and the research design that was adopted was Correlational/Predictive so as to establish the association between the dependent and independent variables. The investigation used Cronbach's alpha (α) of 0.65and above to test for internal reliability or internal consistency of five-point Likert scale online questionnaires. Data was later be captured in Microsoft Access 2013 version database before being analyzed using Microsoft Excel 2013 version and statistical package for the social sciences (SPSS) to establish the relationship between variables using Pearson Chi-square (χ^2) test for independence as well as Spearman correlation analysis to establish association between dependent and independent variables. It was hoped that the findings emanating from the current investigation would be of benefit to both academicians and practitioners involved in the field of project management.

CHAPTER ONE

INTRODUCTION

1.1. Background to the Study

Projects are unique undertakings which involve a degree of uncertainty and are inherently risky (Chapman, 1998; Conroy and Soltan, 1998; Mak et al., 1998; PMI, 2000; Czuchry and Yasin, 2003). Risk in projects can be defined as the chance of an event occurring that is likely to have a negative impact on project objectives and is measured in terms of likelihood and consequence (Wideman, 1992; Carter et al., 1993; Chapman, 1998). Project cost and time overruns can occur because of lack of a measurement system for assessing and controlling project risk (Ewusi-Mensah, 1997). Risk management is a series of steps whose objectives are to identify, address, and eliminate risk items before they become either threats to successful operation or a major source of expensive rework. (Boehm, 1989). Ropponen and Lyytinen (1997) as well as McGrew and Bilotta (2000) consider the risk management process in more detail, arguing that risk management activities have a positive impact on a timely project delivery. Davies, C (2000) in his dissertation on project management practices states that, based on empirical evidence, risk management planning has a positive impact on the ability to predict the project duration. The purpose of this investigation is to understand how four risk response strategies Avoidance, Transference, Mitigation and Acceptance (ATMA) used in international development projects influence performance of these projects in terms of duration. The establishment of relationship between risk management practices and the duration of projects is what is lacking in most project risk management literature and this therefore had motivated the study which focused particularly on international development organizations operating in Nairobi city, Kenya.

1.1.1. Challenges facing international development projects

Over the years, the subject of international development projects has received considerable attention from scholars and development practitioners because of the problems associated with development projects (Youker, 1999; Kwak, 2002; Khang & Moe, 2008; Ika, Diallo & Thuillier, 2010; Leiderer, 2012). International development projects, as Kwak (2002) observed, have tended to pose special problems for project managers and have also been criticized for denying recipients of aid the ownership of the development process (Leiderer, 2012). Development aid has a long history, which to some extent can be traced to the nineteenth century (Hjertholm & White, 2000; Kanbur, 2003; McKinlay, 1978). In recent years, the major premise for development aid has been that local resources alone can have little impact on poverty alleviation and it is only with external aid that developing countries can make the desired progress towards the Millennium Development Goals. According to the United Nations Development Programme's (UNDP's) Human Development Report (2011), official development assistance (ODA) has increased by 35% since 2004. In spite of this huge volume of development aid, the literature on donor funded development projects and programs continues to cite some challenges threatening achievement of intended goals (see for instance Diallo & Thuilier, 2004; Gow & Morss, 1988; and Kwak, 2002). Some of the challenges of development projects are that they are neither effective nor efficient and they do not promote recipient countries' ownership of development processes.

According to (Fengler et. al, 2010), Kenya is an example of a traditional aid recipient country. The scaling up of aid has been modest, and Kenya's main challenge has been the volatility of aid. With the exception of rapidly increasing aid from China, new donors are emerging only slowly. In fact since 2002, when a new government was elected and overall aid to Kenya increased, aid financed by NGOs has fallen. Foreign aid to Kenya is highly volatile; it is also fragmented, albeit to a lesser degree. High volatility has imposed significant costs to aid effectiveness. Since the 1980s Kenya has experienced relatively unpredictable flows of international aid. Net official development assistance (ODA) to Kenya accounted for $1.31

billion in 2008. Recent aid flows fall short of the historic high of the late 1980s and early 1990s, when net ODA reached $1.75 billion in 1989 (in 2007 constant terms) and remained above $1 billion each year until 1993. According to the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD), nominal aid flows to Kenya increased dramatically in the 1980s, from $393 million in 1980 to $1,181 million in 1990. After the peak in 1989– 90, aid flows declined in the 1990s, when donor support slackened, reaching a low of $310 million in 1999. The drop in aid during the 1990s reflected Kenya's falling out with donors over the implementation of structural adjustment programs and the general decline in aid to sub-Saharan Africa following the end of the cold war. In 1993 net ODA started to decline dramatically, with two major episodes of "aid freeze" and donor withdrawals as the government reneged on its commitments to donors.

1.2. Statement of the problem

Traditionally projects are perceived as successful when they meet time, budget and performance goals (Shenhar, Dvir, Levy, & Maltz, 2001). Project Management Institute, (2004) refers to project success being measured in terms of time, cost, scope, quality and customer satisfaction According to Hilson, (2009) a project manager is responsible for delivering the project on time, within budget and to the agreed level of quality such that the project's outputs allowed the promised benefits to be achieved. Unfortunately organizations have experienced projects that did not end on time, were over budget, or changed in scope over time (Cynthia, 2005).This is mostly occasioned by project risks. Project risk is defined by PMI as 'an uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives. Risks that are mostly associated with projects include technical risks, project management risks, organizational risks, financial risks, external risks, compliance risks among others (Heldman, 2005). Projects are full of uncertainties and failure to identify or manage those uncertainties appropriately can rapidly see them turn into serious problems and issues (Farrell, 2005). McFarlan (1981) suggested that projects fail due to lack of attention to individual project risks, aggregate risk of portfolio of projects and

the recognition that different types of projects require different types of management. Project cost and time overruns can occur because of lack of a measurement system for assessing and controlling project risk (Ewusi-Mensah, 1997).Ropponen and Lyytinen (1997) as well as McGrew and Bilotta (2000) consider the risk management process in more detail, arguing that risk management activities have a positive impact on a timely project delivery. Davies, C (2000) in his dissertation on project management states that, based on empirical evidence, risk management planning has a positive impact on the ability to predict the project duration. Even though it is widely acknowledged in literature that project risk management can help to successfully bring the project to completion project stakeholders i.e. project managers, project team and sponsors may be interested to understand this linkage for example of what is the relative contribution of each of the techniques of risk management and especially risk response plans and how they impact on success of the project in terms of meeting the planned project duration. It is against this backdrop that this investigation carried out a study to establish how risk response strategies i.e. avoidance, acceptance, reduction and transfer (Heldman, 2005) impact on performance. Since these project risks are diverse in nature, this investigation only focused on time related risks and how management of the same through risk response plans affects the performance of the projects in terms of time taken to execute the projects. This is a predictive/correlational and quantitative study that first and foremost sought whether there is a relationship between four risk response plans and project duration and by applying Pearson Chi-square **(χ^2)** tests for independence then exploring further relationship through correlation analysis.

1.3. Purpose of the study

The purpose of this study was to establish whether there exists a relationship between risk management strategies and performance of the project in terms of meeting planned time schedule during the implementation phase of project management in international development organizations operating in

Nairobi city, Kenya. It also seeks to establish the statistical significance of the relationship between risk response plans and project performance.

1.4. Objectives of the study

The main objectives of this study are

i. To establish how risk avoidance influences performance of projects funded by international development organizations
ii. To determine the extent to which risk transference influences the performance of projects funded by international development organizations
iii. To establish how the technique of risk mitigation influences the performance of projects funded by international development organizations
iv. To determine the relationship between risk acceptance and performance of projects funded by international development organizations

1.5. Research Questions

A research question summarizes the significant issue that the research investigated. It is the fundamental core of a research project, study, or review of literature. The following are some of the research questions that the study seeks answers to:

i. How does risk avoidance influences performance of projects funded by international development organizations?
ii. To what extent does risk transference influence the performance of projects funded by international development organizations?
iii. How does the technique of risk mitigation influence the performance of projects funded by international development organizations?

iv. In what ways does risk acceptance influence performance of projects funded by international development organizations?

1.5.1. Research hypotheses

Hypothesis could be termed as tentative answers to a research problem. The structure of a hypothesis involves conjectural statements relating to two or more variables. They are deduced from theories, directly from observation, intuitively, or from a combination of these. In this study the following the following hypotheses were tested:

H_0: risk avoidance does not have statistically significant influence on performance of projects

H_1: risk avoidance has statistically significant influence on performance of projects

H_0: risk transference does not have statistically significant influence on performance of projects

H_1: risk transference has statistically significant influence on performance of projects

H_0: risk mitigation does not have statistically significant influence on performance of projects

H_1: risk mitigation has statistically significant influence on performance of projects

H_0: risk acceptance does not have statistically significant influence on performance of projects

H_1: risk acceptance has statistically significant influence on performance of projects

1.6. Significance of the Study

Effective risk management strategies in project management helps one to identify project's strengths, weaknesses, opportunities and threats. This investigation sought to establish the influence of risk management on performance of international development projects and it was of significance to people who are involved in project management activities and wish to understand the importance of incorporating risk response strategies and how they can apply them as they endeavor to manage their projects. Of key interest is how each of these risk response strategies impact on the performance of the project in terms of duration.

1.7. Delimitations of the study

The delimitations of a study are those characteristics that limit the scope (define the boundaries) of the inquiry as determined by the conscious exclusionary and inclusionary decisions that are made throughout the development of the proposal. Among these are the choice of objectives and questions, variables of interest, alternative theoretical perspectives that could be adopted, etc. These are choices made by the researcher which describe the boundaries that you have set for the study. Delimitation is a purposeful and conscious action taken in order to make the research manageable (Kombo & Delno, 2006). The investigation was conducted in the randomly selected international development organizations in Nairobi County as the units of sampling. Furthermore the investigation did not discuss risk management as a whole but only the risk response plans. This is because risk management is a wide topic that includes risk identification, risk analysis and risk assessment.

1.8. Limitations and Scope of the Study

Limitations are potential weaknesses in your study and are out of your control. These are influences that the researcher cannot control. They are the shortcomings, conditions or influences that cannot be controlled by the researcher that place restrictions on your methodology and conclusions. A limitation is

an aspect of a research that may influence the results negatively and affect the generalizability of the results but over which the study has no control (Mugenda & Mugenda, 2003).One of the challenges that may be faced by the study is that respondents may find it difficult to give honest feedback even though their anonymity is guaranteed and furthermore they may feel that negative responses reflect on their abilities in managing Projects and not on factors beyond their control. Again some respondents may deliberately avoid some questions in the questionnaires.

1.9. Basic assumptions of the study

Assumptions in a given study are things that are somewhat out of the control of the person undertaking the research but if they disappear the study would become irrelevant. In the current study it was assumed that all the respondents would have the required knowledge and they were competent enough to give accurate responses to the questions raised through the questionnaires and the investigation as well assumed that all the respondents would be willing to participate as requested

1.10. Definitions of Significant Terms

Project	A temporary endeavour undertaken to create a unique product, service or result
Project performance	The ability of a project to meet the requirements set at the initiation stage. These requirements include budget, duration of project, quality, and customer satisfaction among others
Risk	Any event that may occur in the project life cycle and has an effect on the set objectives of the project

Risk management	Risk management is a series of steps whose objectives are to identify, address, and eliminate risk items before they become either threats to successful operation or a major source of expensive rework
Risk avoidance	The risk avoidance strategy seeks to eliminate any likely risk. It entails changing the project to avoid the risk, change scope, objectives, etc.
Risk transference	The risk transference strategy aims to pass ownership and/or Liability for a particular risk to a third party. It involves shifting the impact of a risk to a third party (like a subcontractor). It does not eliminate it, it simply shifts responsibility.
Risk mitigation	Seeking to reduce the size of the risk exposure to below an acceptable threshold. It involves taking steps to reduce the probability and/or impact of a risk
Risk acceptance	recognizing residual risks and devising responses to control and monitor them
Time overrun	delay in the schedule of a given activity or milestone experienced during project lifecycle
Project life cycle	Project Life Cycle refers to a series of activities which are necessary to fulfill project goals or objectives

1.11. Organization of the study

The project report is organized in five chapters namely introduction, literature review and research methodology, data analysis and summary of major findings. The introductory chapter highlighted the background to the study which set the tone of the investigation by shedding light on the relevant theoretical and empirical literature underpinning the investigation. Statement of the problem was also expressly stated in the chapter indicating the existing problem that requires to be addressed by the study and clearly stating

the requisite independent variable as well as dependent variables, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study, basic assumptions of the study, definition of significant terms and organization of the study are also mentioned in the chapter. All these items were geared towards giving the study the necessary background to undertake the investigation logically and scientifically. The second chapter highlighted some of the challenges afflicting projects funded by international development projects including failure to meet the objectives set out at the initiation in projects .The concept of risk management was delved into in detail as well as benefits, challenges, sources of risks in projects. The theoretical and conceptual framework was also laid out to depict relationships amongst variables. The third section of the project report discussed the strategy that was executed in conducting the study. It highlighted the sampling technique that was used as well as the sample size. The chapter also laid out how the relevant independent, dependent and moderating variables was operationalized as well as using all the relevant descriptive and inferential statistics to test the stated hypotheses. Chapter for mainly focuses on analysis of data by utilization of SPSS software and various interpretations of significance and finally chapter five discusses the summary of major findings in the investigation alongside the conclusion as well as recommendations for further areas of research.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter will first delve into literature relating to the discipline of risk management firstly then narrow down to risk response plans and how they can be applied during execution stage of project management on time related risks inherent in international development projects. According to Hilson, (2009) it is undoubtedly true that projects are risky as a result of their common characteristics, by deliberate design, and because of the external environment within which they are undertaken. It is impossible to imagine a project without risk. Of course some projects was high-risk, while others have less risk, but all projects are by definition risky to some extent. Hilson, (2009) suggests that the important thing is not to keep risk out of projects, but to ensure that the inevitable risk associated with every project is at a level which is acceptable to the sponsoring organization, and is effectively managed. Indeed those involved with launching, sponsoring and managing projects in organizations should welcome risk in their projects, since it enables and supports change, innovation and creativity as long as it is taken sensibly, intelligently and appropriately, and as long as it is managed effectively. The current chapter deals with the concepts underpinning risk management as well as theories that were obtained from the literature and eventually constructing a schematic representation of relevant variables in form of a conceptual framework.

2.2. Project performance

Traditionally projects are perceived as successful when they meet time, budget and performance goals (Shenhar, Dvir, Levy, & Maltz, 2001). Project Management Institute, (2004) refers to project success being measured in terms of time, cost, scope, quality and customer satisfaction According to Hilson,

Cost, time, and performance are the typical measures of project success (Kloppenborg and Opfer, 2002). In other words, a project is often considered successful if it finishes within its budget estimate, finishes

within its scheduled time frame, and performs as designed (Scott-Young and Samson, 2008). Whilst the research literature in project management engages in a fruitful debate over the nature of project success (Dvir et al., 1998), project success criteria have become multifaceted. For example, Hackman (1987) assesses project success by measuring the client's or intended user's satisfaction, as well as employee development and satisfaction. Shenhar et al. (1997) evaluate project success by evaluating long-term business success and learning that prepares the organization for the future. Lim and Mohamed (1999) measure project success using the multidimensional set of time, cost, quality, performance, safety, and operational benefit. Shenhar et al. (2001) use project efficiency, customer benefit, organizational success, and potential benefit to the organization to assess project success. Yu et al. (2005) develop a value-centered model based on net project execution cost and net project operation value to evaluate project success. The Project Management Institute (2008) assesses project success with cost, time, quality, and stakeholder satisfaction. Therefore, this study chooses project time, cost, and profitability as the criteria for project success. This is principally due to that the cost, time, and profitability metrics are objective in nature, allowing a direct comparison of projects with different types, scopes, and sizes across different industries, especially when the metrics are binary measures (Scott-Young and Samson, 2008). Consequently, our dependent variable, Project Success, is binary, with 1 indicating that a project finishes within budget and scheduled time frame and makes a profit.

2.3. How risk management evolved

The word “risk” derives from the early Italian word risicare, which means to dare (Bernstein, 1996). However, its meaning has evolved over time and appears to mean different things to different people depending on their individual perception of the world (Frosdick, 1997). The study of risk began in seventeenth century and is associated with the French mathematicians Blaise Pascal and Pierre de Fermat, who sought to apply mathematics to gambling (Frosdick, 1997). Their work led to the development of probability theory, which lies at the heart of the concept of risk (Bernstein, 1996). Though risk was

associated solely with gambling for many years, by the early nineteenth century, the term risk, with its Anglicized spelling, had been adopted by the insurance industry in England (Moore, 1983). However, it was only in the 1950s and 1960s, with major developments in technology and the increasing size and internationalization of organizations, that risk and its management became of concern to the wider business community (Grose, 1992; Snider, 1991).

Risk management is a series of steps whose objectives are to identify, address, and eliminate risk items before they become either threats to successful operation or a major source of expensive rework. (Boehm, 1989). Project risk management is considered in project management handbooks to be an example of rational problem solving (Koningsveld & Mertens, 1992; Kutsch & Hall, 2005). According to these handbooks (Association for Project Management, 2004;Research context Project Management Institute, 2008), this problem solving approach indicates that actors in the risk management process, based on an information collection and analysis process, decide upon measures which are taken in order to lower the probability of risks occurring, or minimize the impact of the risks that occur. The risk management process as a problem solving process assumes that actors are well informed and behave rationally when making a decision. In addition it is assumed that actors demonstrate instrumental behaviour, meaning that they invest their resources in mitigating the risks identified, not in a discourse on the meaning of these risks for the project's charter, deliverables or success.

Ropponen and Lyytinen (1997) as well as McGrew and Bilotta (2000) consider the risk management process in more detail, arguing that risk management activities have a positive impact on a timely project delivery. In addition, risk management activities lead to a better estimation of the resources needed to perform a task (Ropponen and Lyytinen, 1997), and decrease the number of task failures (McGrew and Bilotta, 2000). Ropponen and Lyytinen (1997) have also found indications that experience counts, meaning that a frequent and this is a pre-print version of the paper that has been published in International

Journal of Project Management, 2010- 13 - continuous use of risk management measures by project managers in various projects overtime contributes positively to the effectiveness of risk management in their own projects.

2.3.1. Concept of risk management

Smith et al. (2006) provide a comprehensive description of the concept of risk management and how it can be used in practice. According to the authors, risk management cannot be perceived as a tool to predict the future, since that is rather impossible. Instead, they describe it as a tool to facilitate the project in order to make better decisions based on the information from the investment. In this way, decisions based on insufficient information can be avoided, and this will lead to better overall performance. In the literature, risk management is described as a process with some predefined procedures. The scope of its definition differs among the authors, however the core information is the same. From a number of definitions which can be found in the management literature Cooper et al. (2005) explanation brings the essence of this concept: The risk management process involves the systematic application of management policies, processes and procedures to the tasks of establishing the context, identifying, analyzing, assessing, treating, monitoring and communicating risks (Cooper et al., 2005). Risk management process (risk management planning) is the basic principle of understanding and managing risks in a project. It consists of the main phases: identification, assessment and analysis, and response (Smith et al. 2006). All steps in risk management planning should be included when dealing with risks, in order to efficiently implement the process in the project. There are many variations of risk management planning 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 paper the model of risk management planning described by Smith et al. (2006) was used for further analysis and was further explained in the following section.

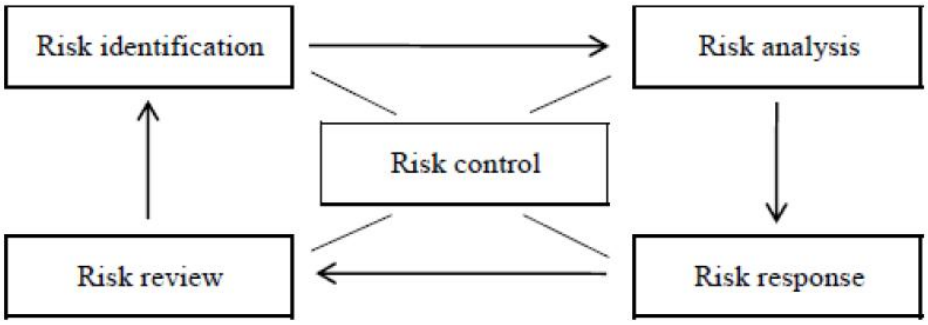

Figure 1 the process of managing risks (Smith et al. (2006)

2.3.2. Benefits of risk management

To maximize the efficiency of risk management, the risk management planning should be continuously developed during the entire project. In this way, risks was discovered and managed throughout all the phases (Smith et al. 2006). The benefits from risk management are not only reserved for the project itself, but also for the actors involved. The main incentives are clear understanding and awareness of potential risks in the project. In other words, risk management contributes to a better view of possible consequences resulting from unmanaged risks and how to avoid them. (Thomas, 2009) Another benefit of working with risk management is increased level of control over the whole project and more efficient problem solving processes which can be supported on a more genuine basis. It results from an analysis of project conditions already in the beginning of the project. (Perry, 1986) The risk management also provides a procedure which can reduce possible and sudden surprises (Cooper et al. 2005). Different attitudes towards risk can be explained as cultural differences between organizations, where the approach depends on the company's policy and their internal procedures (Webb, 2003). Within the risk management, three company's approaches can be distinguished.

The first one is the risk-natural firm which does not invest much in risk management but is still aware of the most important risks. The second approach is the risk-averse, where no investments are made in order to reduce the probability of occurrence of risk. The last one is the risk-seeker where the organization is prepared to face all risks and is often called gambler. In the long term, the risk-seeking companies can get a lower profitability compared to risk-natural firms. This is because of the large investments and losses when repeating the risk management processes over and over again to ensure all risks have been managed before the risks actually occurs (Winch, 2002).

2.3.3. Limits of risk management

The level of risk is always related to the project complexity (Darnall and Preston, 2010). The bigger the project is, the larger the number of potential risks that may be faced. Several factors can stimulate risk occurrence. Those most often mentioned in the literature are financial, environmental (the project's surrounding, location and overall regulations), time, design and quality. Other influences on the occurrence of risk are the level of technology used and the organization's risks (Gould and Joyce, 2002). Cleden (2009) claims that complexity is a factor that can limit a project; the bigger and more complex a project is, the more resources are required to complete it. Moreover, when all potential risks have been identified, the project team must remember that there might be more threats. Therefore, the project team should not solely focus on management of those identified risks but also be alert for any new potential risks which might arise. Risk management should be used as a tool to discover the majority of risks and a project manager should be also prepared for managing uncertainties not included in a risk management plan (Cleden, 2009).

2.3.4. Projects and their risks

Risk is part of every project (Pinto, 2007; Turner, 1993). A project is:"... a temporary endeavour undertaken to create a unique product, service or result" (Project Management Institute, 2008:5), and

project management is: "... the application of knowledge, skills, tools and techniques to project activities to meet the project requirements" (Project Management Institute, 2008:6). Planning and scheduling are key aspects of project management (Söderlund, 2004b), and risks are all events and situations that threaten the undisturbed execution of the project plan. Risk therefore relates to expectations of stakeholders regarding when and how the project will deliver, what the project will deliver and at what cost. Project risks are therefore important factors determining whether the project was a success. Risk is defined as an event that has a probability of occurring, and could have either a positive or negative impact to a project should that risk occur. A risk may have one or more causes and, if it occurs, one or more impacts. For example, a cause may be requiring an environmental permit to do work, or having limited personnel assigned to design the project. The risk event is that the permitting agency may take longer than planned to issue a permit, or the assigned personnel available and assigned may not be adequate for the activity. If either of these uncertain events occurs, there may be an impact on the project cost, schedule or performance. All projects assume some element of risk, and it's through risk management where tools and techniques are applied to monitor and track those events that have the potential to impact the outcome of a project.

2.3.5. Risk management plan

Risk management plan is a document that a project manager prepares to foresee risks, estimate impacts, and define responses to issues. It also contains a risk assessment matrix. This is a schematic description of how risk management should be carried out. 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. It's the objective of risk management to decrease the probability and impact of events adverse to the project. On the other hand, any event that could have a positive impact should be exploited. The identification of risk normally starts before the project is initiated, and the number of risks

increase as the project matures through the lifecycle. When a risk is identified, it's first assessed to ascertain the probability of occurring, the degree of impact to the schedule, scope, cost, and quality, and then prioritized. Risk events may impact only one or while others may impact the project in multiple impact categories. The probability of occurrence, number of categories impacted and the degree (high, medium, low) to which they impact the project was the basis for assigning the risk priority. All identifiable risks should be entered into a risk register, and documented as a risk statement. As part of documenting a risk, two other important items need to be addressed. The first is mitigation steps that can be taken to lessen the probability of the event occurring. The second is a contingency plan, or a series of activities that should take place either prior to, or when the event occurs. Mitigation actions frequently have a cost. Sometimes the cost of mitigating the risk can exceed the cost of assuming the risk and incurring the consequences. It is important to evaluate the probability and impact of each risk against the mitigation strategy cost before deciding to implement a contingency plan. Contingency plans implemented prior to the risk occurring are pre-emptive actions intended to reduce the impact or remove the risk in its entirety. Contingency plans implemented after a risk occurs can usually only lessen the impact. Identifying and documenting events that pose a risk to the outcome of a project is just the first step. It is equally important to monitor all risks on a scheduled basis by a risk management team, and reported on in the project status report.

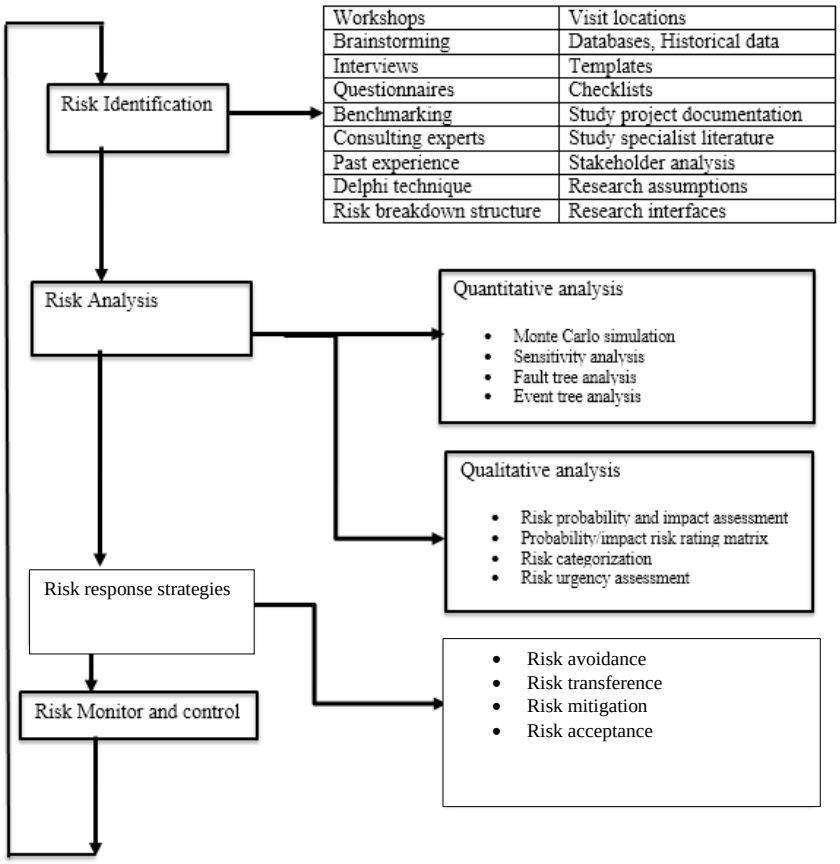

Figure 2 Risk management plan

2.3.6. Sources of risks

A lot of studies worldwide aim to define the sources of studies. Research Week International Conference, 2005 categorized the sources of risks into two groups: Internal Source and External sources. The Internal (controllable) sources are Client system, Consultants, Contractors and subcontractors and Suppliers. While the external Sources are Economic and globalization dynamics, Unforeseen circumstances,

Government/ statutory/ political controls, Environmental constraints, Health and safety issues outside the control of the project team and Socio-cultural issues.

2.4. Research gap

Numerous publications on the topic of risk management in projects are available in various forms ranging from print media to electronic media. Even though this is a fact there has been lack of attention on how this aspect of project management can influence performance of projects in terms of planned time schedule. For instance one cannot be able to say that a change from utilization to non-utilization and vice versa of a certain technique of risk response plan has a certain quantifiable effect on performance of the project .This research focuses on this area and sheds light on how one can be able to establish association between project performance and risk response plans.

2.5. Theoretical framework

2.5.1. Risk Response strategies

This is the action be taken towards the identified risks and threats. The response strategy and approach chosen depend on the kind of risks concerned (Winch, 2002). Other requirements are that the risk needs to have a supervisor to monitor the development of the response, which was agreed by the actors involved in this risk management process. (PMI, 2004). Risk response is the process of developing options and determining actions to enhance opportunities and reduce threats to the project's objectives. (Jutte, 2014). According to (Hilson D, 2009) having identified and analyzed risks, it is essential that something should be done in response. As a result many believe that the Risk Response Planning phase is the most important in the risk process, since this is where the project team get a chance to make a difference to the risk exposure facing the project. It is usually the responsibility of each risk owner to decide what type of response is most appropriate, though they will often seek help and advice on this. When developing risk responses, it is important to adopt a strategic approach in order to focus attention on what is being

attempted (Hilson D, 2009). Winch (2002) claims that the lower impact the risk has, the better it can be managed. Most common strategies for risk response are: avoidance, reduction, transfer and retention (Potts, 2008). Beyond those types of responses, Winch (2002) describes that sometimes it is difficult to take a decision based on too little information. This may be avoided by waiting until the appropriate information is available in order to deal with the risk. This way of acting is called 'Delay the decision' but this approach is not appropriate in all situations, especially when handling critical risks. Those need to be managed earlier in the process.

2.5.2. Risks avoidance and its influence on project performance

If the risk is classified as bringing negative consequences to the whole project, it is of importance to review the project's aim. In other words, if the risk has significant impact 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 impact its success (Potts, 2008). 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). The 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, Darnall and Preston (2010) suggest applying known and well developed strategies instead of new ones, even if the new ones may appear to be more cost efficient. In this way, the risks can be avoided and work can proceed smoothly because strategy is less stressful to the users. Risk avoidance involves changing the project plan to eliminate the risk or the condition that causes the risk in order to protect the project objectives from its impact. This may be either by eliminating the source of risk within a project or by avoiding projects (Merna, 2004). It seeks to reconfigure the project such that the risk in question disappears or is reduced to an acceptable value as well as developing an alternative strategy that has a higher probability of success but usually at a higher cost associated with accomplishing a project task. Eliminating activities with a high probability of loss by making it difficult for risk to occur, or by executing

the project in a different way which will achieve the same objectives but which insulates the project from the effect of the risk can be termed was risk avoidance. Cooper et al. (2005) list some activities that can help to avoid potential risk: More detailed planning , Alternative approaches , Protection and safety systems , Operation reviews, Regular inspections, Training and skills enhancement, Permits to work, Procedural changes, Preventive maintenance

Communication between project head and management is crucial to the successful implementation of project. This is generally influenced by the principal–agent relationship between the parties and the contract type chosen (Müller & Turner, 2005). Bond-Barnard et al., (2013) show that a balance between formal and informal communication between project manager and other stakeholders reduces mistrust and conflict of interest. A study conducted by Fisher & Urich (1999) introduces the models of instrumental and transformative participation and the way they influence flow and communication between project manager and other stakeholders. Rosenkranz et al., (2013) argues that knowledge transfer, communication, and shared understanding between project stakeholders are important requirements to projects. The ability of the project manager to facilitate communication among stakeholders, create the desired commitment level and reduce uncertainty can help avoiding the risk of project failure (Burström & Jacobsson, 2011). Blackstone et al., (2009) points out the importance of project managers' skills and leadership capabilities, user involvement, top management commitment and organizational engagement in successful implementation of projects. Shiferaw et al., (2012) find that weak links between project stakeholders affect the effectiveness of project governance system. While investigating the role of phased project planning in project success, Tasevska et al., (2014) study four measures namely, business case development, scope planning, baseline plan development and risk planning. Kutsch et al., (2011) state that among many reasons behind project failure, 'planning fallacy', i.e., over-optimism in the planning phase in the project due to resource misallocation and Miscommunication is crucial. It is preferable if a project is budgeted, one phase at a time, instead of budgeting at a time. Khamooshi& Cioffi (2013) develop a

model for phase-wise project budgeting and scheduling under uncertainty. Conversely, projects which involve cross-cultural teams working together from remote locations often require an overall plan and budget which is implemented through intertwining of phase-wise planning and budgeting. Keil et al. (1998) discusses the importance of Contingency plans that constitutes a serious threat to the successful completion of a software development project. Thal & Martínez (2011) suggest that Contingency plans help project teams to deal with uncertainties such as, handling new product development, enforcing innovative actions, increase plan flexibility, etc. Hanisch & Wald (2012) studies 1,622 articles and present a meta-analysis of project Contingency theory as appears in project management journals.

2.5.3. Risk Reduction/Mitigation and its influence on project performance

By having an overview over the whole project it is easy to identify problems which are causing damage. In order to reduce the level of risk, the exposed areas should be changed (Potts, 2008). This is a way of minimizing the potential risks by mitigating their likelihood (Thomas, 2009). One way to reduce risks in a project is to add expenditures that can provide benefits in the long term. Some projects invest in guarantees or hire experts to manage high-risk activities. Those experts may find solutions that the project team has not considered (Darnall and Preston, 2010). Risk mitigation is all about understanding those risks that can impact the objectives of the organization, and taking the appropriate steps to reduce the risks to an acceptable level. Strategies can be achieved at the overall project level by replanning the project or changing its scope and boundaries. According to (Hillson, 2015) this is an investment of funds to reduce the risk on a project. On international projects, companies will often purchase the guarantee of a currency rate to reduce the risk associated with fluctuations in the currency exchange rate. A project manager may hire an expert to review the technical plans or the cost estimate on a project to increase the confidence in that plan and reduce the project risk. Assigning highly skilled project personnel to manage the high-risk activities is another risk reduction method (Hillson, 2015). According to Cooper et al. (2005), Mitigation strategies can include Contingency planning, Quality assurance, Separation or relocation of activities and

resources, Contract terms and conditions, Crisis management and disaster recovery plans. Those risks which should be reduced can also be shared with parties that have more appropriate resources and knowledge about the consequences (Thomas, 2009). 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 (Darnall and Preston, 2010).

Experts managing a high-risk activity can often predict problems and find solutions that prevent the activities from having a negative impact on the project. Reducing the risk in order to make it more acceptable to the project or organization, by reducing its impact can be termed as mitigation of risk. Tesch et al., (2007) identify several mitigation strategies as risk response solutions. As a mitigation strategy the authors suggest escalating risk issues to top management, obtain signoff on commitments and stop the project and discuss with sponsor and management on further steps. In case there is lack of commitment from the management or the customer, the authors also suggest working with them to understand the reasons for indifference. Laurentiu & Gabriela (2013) discuss the importance of a cost-benefit analysis on existing risks in the project. The authors suggest using a sensitivity analysis to identify risk parameters that may impact during project development and operational period and may lead to failure and varied points in the project life cycle. Funding plays a crucial role to conduct risk mitigation activities and enabling the system to restore its usual functioning (Hecker, 2002). Funding deficits are an integral part of cost of time overruns. Infrastructure projects are prone to more funding deficits than projects in manufacturing or even software sectors (Little, 2010). Such funding deficits are more prevalent in large infrastructure or multihazard mitigation projects with where investment stakes are high. According to Vizard (2008) IT firms have enough funding for their ongoing projects, but lack funding for infrastructure required for business continuity. According to Goble & Bier (2013) periodic communication of risk assessment results can mitigate risks in projects. According to the authors risk assessments are repositories of structured information and a medium for communication. Hence, the judicious use of risk assessment

tools with adequate communication can mitigate risks to a great extent (Veil & Husted, 2012). Alexandra-Mihaela & Danut (2013) point out that internal communication is one of the most important factors for success in project management. Project manager should tract the internal communication to ensure project deliverables to make ends meet (Aubry, 2011).

2.5.4. Risks Acceptance and its influence on project performance

When a risk cannot be transferred or avoided, the best solution is to accept the risk. In this case the risk must be controlled, in order to minimize the impact of its occurrence (Potts, 2008). This strategy can also be an option when other solutions are uneconomical (Thomas, 2009). Acceptance indicates a decision not to make any changes to the project plan to deal with a risk or that a suitable response strategy cannot be identified. This strategy can be used for both negative and positive risks. The two types of acceptance are developing a contingency plan to execute should a risk occur which is referred to as positive acceptance or taking no action at all which is passive acceptance. The most usual risk acceptance response is to establish a contingency allowance, or reserve, including amounts of time, money or resources to account for known risks. Recognizing that residual risks (i.e., risk that remains after a risk response has been taken) will exist and responding either actively by allocating appropriate contingency, or passively doing nothing except Monitoring the status of the risk can be termed as risk acceptance. Risk acceptance would also mean that taking no action on risk was a carefully thought-after decision. Hence, if a decision is taken not to take any action of the existing risk and to accept it the way it is, it can be termed as risk acceptance strategy (Fairley, 2005). Risk acceptance can act as a double-edged Sword, if not monitored and inspected by senior management. It can become a potential threat to Organizations if it crosses a predetermined threshold level, thereby raising other forms of risks. The allowance should be determined by the impacts, computed at an acceptable level of risk exposure, for the risks that have been accepted. Risk acceptance does not reduce any effects however it is still considered a strategy. This strategy is a common option when the cost of other risk management options such as avoidance or limitation may outweigh the cost of

the risk itself. A company that doesn't want to spend a lot of money on avoiding risks that do not have a high possibility of occurring will use the risk acceptance strategy.

2.5.5. Risks Transference and its influence on project performance

If a risk can be managed by another actor who has a greater capability or capacity, the best option is to transfer it. Potts (2008) states that the risk should be transferred to those who know how to manage it. The actors that the risks can be transferred to are, for example, 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 (Potts, 2008). 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 impacts they bring is also an option when the risks are outside the project management's control, for example political issues or labor strikes (Darnall and Preston, 2010). The situation may also consist of catastrophes that are rare and unpredictable in a certain environment. (Winch, 2002) Such risks that are beyond the management's control should be transferred through insurance policies. Risk transference is the process of transferring any losses incurred to a third party, such as through the use of insurance policies, outsourcing to a party or even contractual agreements to transfer risk to third party. According to (Hillson, 2015) essentially this is a risk reduction method that shifts the risk from the project to another party. The purchase of insurance on certain items is a risk transfer method. The risk is transferred from the project to the insurance company. The purchase of insurance is usually in areas outside the control of the project team. Weather, political unrest, and labor strikes are examples of events that can significantly impact the project and that are outside the control of the project team. Transferring a portion or entire risk to a third party, by identifying another stakeholder to manage the risk activities with low probability of recurrence, but with a large financial impact, is termed as risk transference

2.6. Conceptual framework

A conceptual framework is an analytical tool with several variations and contexts. It is used to make conceptual distinctions and organize ideas. Strong conceptual frameworks capture something real and do this in a way that is easy to remember and apply. In this particular study the conceptual framework will depict independent, moderating and dependent variables. The key independent variables have their indicators indicated and so is the case for the moderating and dependent variables. According to Chandorkar, A.G (2010) variable is any quality or characteristics that varies among the members of a particular group, while constant is any characteristic or quality which is same for all members of a particular group. Several kinds of variables are studied in research, most common being independent and dependent variables. Figure 3 below is the conceptual framework for the study.

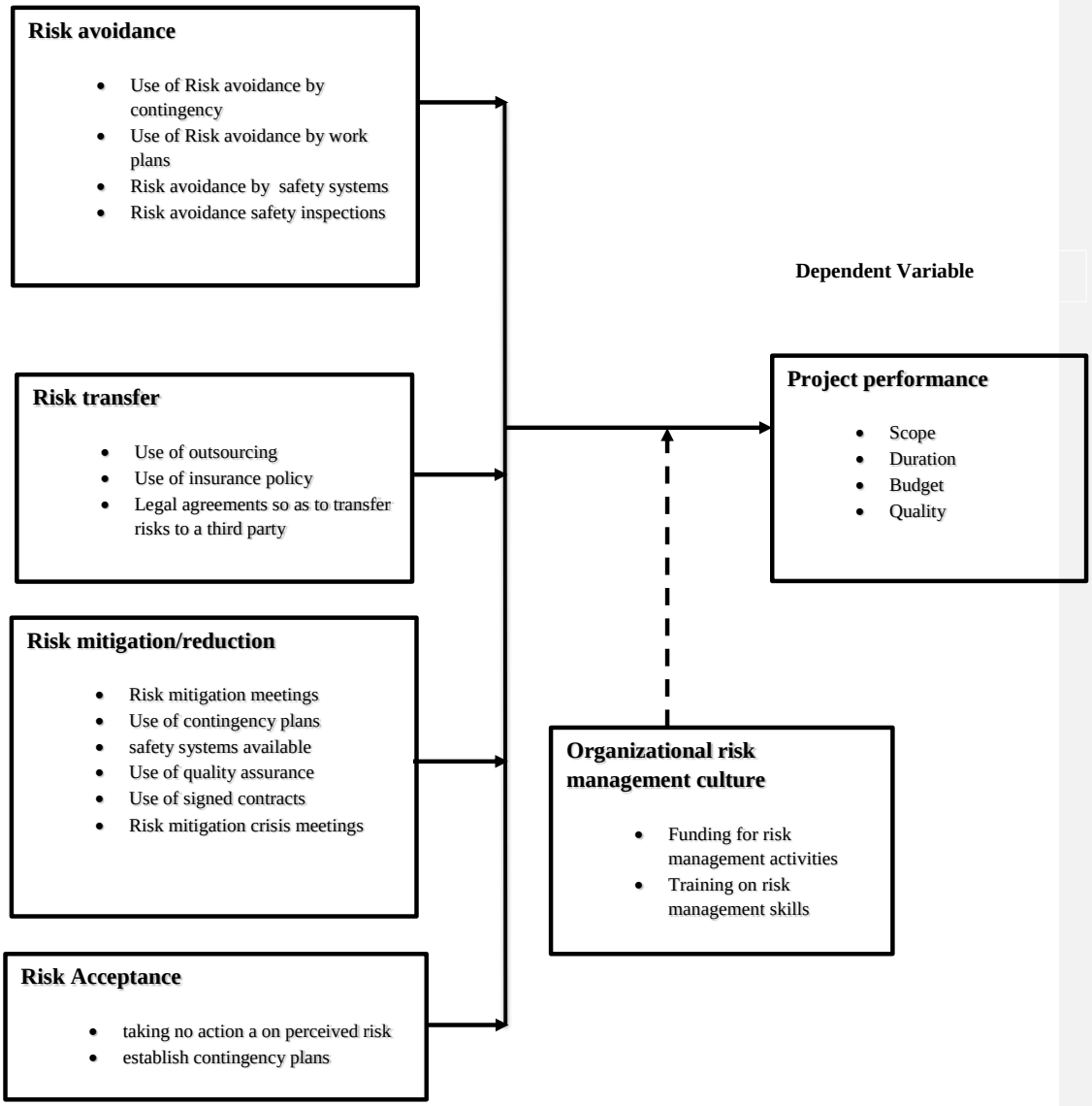

Figure 3 Conceptual Model (Framework)

2.7. Summary of chapter

This chapter reviewed the relevant literature in relation to the research questions presented in this study. It lays down the concepts of risk management and specifically risk response strategies of avoidance, acceptance, transfer and reduction/mitigation. In the foregoing literature review Risk avoidance, as a risk response strategy typically considers issues like contingency plans, regular inspections, detailed planning as well as preventive maintenance. The next response strategy is risk transference which considers methods like purchase of insurance premiums, outsourcing some functions to another party as well as entering into some legal agreements to ensure eventualities that may cause project to delay are eliminated. As for mitigation the issues covered under mitigation generally included concerns like careful study of procedures, reconsideration of cost-benefit analysis, awareness of funding requirements, clear communication and information flow across stakeholders, and conducting periodic meetings. Risk acceptance, as a risk response strategy primarily consist of issues like, not taking any action on risk and its impact, as well as coming up with contingency plans to counter any eventuality that may cause project implementation to delay. That chapter also points out the gap that the investigation seeks to address as well as a diagrammatic representation the variables in form of conceptual framework.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with design and the methodologies that the investigation will use. It stipulates the systematic research procedure and techniques the investigation will apply in the collection and analysis of the data. It also describes research design, target population, sample size and sampling techniques, research instruments, instrument validity, instrument reliability, data collection procedures and data analysis techniques.

3.2 Research Design

Orodho (2004) says that the term research design refers to the procedures selected by a researcher for studying a particular set of questions or hypothesis. The investigation will adopt a quantitative due to utilization of numerical data and also correlational/predictive design because of the nature of the research questions with an aim to explaining the relationship between the research variables identified, the dependent i.e. project duration and the independent variables identified risk response plans i.e. acceptance, avoidance, reduction and transference. According to Stanovich (2007) correlation studies are important because many scientific hypotheses are stated in terms of correlation or lack of correlation, so that such studies are directly relevant to these hypotheses although correlation does not imply causation, causation does imply correlation that is, although a correlational study cannot definitely prove a causal hypothesis, it may rule one out.

3.3 Target population

Oso and Onen (2009) defines the term target population as the total number of subjects or the total environment of interest to the study. The target population of this study was the international development organizations while the study population was staff working for international development projects. The investigation will target project/programme managers involved in management of international development organizations projects based in the city of Nairobi. This was among others Care International, UNDP and ACTIONAID. These groups are targeted because they will help meet the objectives set in this study since they are involved in management of projects from time to time.

Table 3.1: Target population

NAME OF ORGANIZATION	TARGET POPULATION
CARE INTERNATIONAL	20
UNDP	25
USAID	28
ACTIONAID	20
WORLD VISION	21
CANADIAN INTERNATIONAL DEVELOPMENT AGENCY	24
WORLD BANK	22
TOTAL	160

3.4 Sampling procedure

Sampling is the act, process or technique of selecting a suitable sample, or a representative part of a population for the purpose of determining parameters or characteristics of the whole population (Kombo, et al 2006).The investigation will use purposive or judgmental sampling technique. According to Neuman (2000) this method is used when one wishes to select cases that are particularly informative. In this study

the study is of the view that to have ten or more respondents in the organizations that undertake projects the information was more reliable. According to Mark, Phillip & Adrian (2008) choice of sample depends on the confidence you need to have in the data which is the level of certainty that the characteristics of the data collected will represent the characteristics of the total population. From each international development organizations the study picked five project/programme managers. For the international development organizations that have more than five project/programme managers the study used simple random sampling in which each member of the population had an equal chance of being selected by making a list. The proportion of staff working on projects is what was used as a determinant when calculating sample size.

$$\pi = p \pm Z\alpha_{/2}\sqrt{\frac{p(1-p)}{n}}\sqrt{\frac{N-n}{N-1}}$$

Where $\sqrt{\frac{N-n}{N-1}}$ is the finite population correction factor (fpc)

Making n the subject of the formula and removing the finite population correction factor since the population in question is quantified, the formula then becomes

The formula is given as $n = \frac{p(1-p)z^2}{ME^2}$

Where n is the sample size

π Population Proportion of staff working on projects

P-sample proportion of staff working on projects, for this study proportion of 70% or 0.7 was used

Z is the score statistic, for this study a confidence interval (CI) of 95% was used the corresponding value of Z score is 1.96

ME is the margin of error $= Z\alpha_{/2}\sqrt{\frac{p(1-p)}{n}} = 0.22$

In this case the sample size for every organization is 17 computed using above formula

$$n = \frac{0.7(1-0.7)1.96 \times 1.96}{0.22 \times 0.22} = 16.668$$

Table 3.2 : Target population and sample size

NAME OF ORGANIZATION	TARGET POPULATION	SAMPLE SIZE
CARE INTERNATIONAL	20	17
UNDP	25	17
USAID	28	17
ACTIONAID	20	17
WORLD VISION	21	17
CANADIAN INTERNATIONAL DEVELOPMENT AGENCY	24	17
WORLD BANK	22	17
TOTAL	160	119

3.5 Methods of Data Collection

The Printed and online questionnaires were administered to the respondents as a tool to capture the requisite data. Printed and online questionnaires were the appropriate instrument in that they are easy to administer and collect. Also they gave respondents time to read through and give well thought answers. Most of the questions are closed questions that will give respondents easy time to give answers. The questionnaire was mostly composed of 5-Point Likert scale questions. The questions are aimed at obtaining data that is relevant to the present study i.e. getting data on utilization of risk response plans and performance of projects.

3.6 Reliability

Kothari (2004) points out that reliability in research is when the measurement instrument provides consistent results. (Bryman &Bell , 2011) reliability is fundamentally concerned with issues of consistency of measure and is composed of the following major elements:

a) Stability:

According to (Bryman &Bell , 2011) the most obvious way of testing for the stability of a measure is the test-retest method which entails administering a test or measure on one occasion and then re-administering it to the same sample on another occasion and measure the value of correlation between the two sets of observations.

b) Internal reliability:

This meaning of reliability applies to multiple indicator measures like Likert scales (Bryman &Bell, 2011). In such a case the respondent's answers to each question are aggregated to form an overall score the possibility is raised that the indicators do not relate to the same thing or in other words they lack coherence. (Bryman &Bell, 2011) suggest that one way of testing internal reliability is the split half technique. The indicators for a given measure would be divided into two halves using random or odd-even basis and correlation is then computed for the two halves. According to (Bryman &Bell, 2011) nowadays researchers use Cronbach's alpha. In the current study Cronbach's alpha of 0.65 and above was targeted as suggested by (Bryman &Bell, 2011). Table 3.3 shows the values of reliability coefficients for five point Likert scale questionnaires as generated from SPSS software.

Table 3.3: Reliability Statistics

Name of variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
Risk avoidance	0.710	0.659	4
Risk transference	0.801	0.802	3
Risk mitigation	0.760	0.765	6
Risk acceptance	0.881	0.881	4

Risk management culture	0.870	0.880	5
Project performance	0.681	0.686	5

3.7 Validity

validity refers to the issue of whether or not an indicator(or set of indicators) that is devised to gauge a concept really measures that concept (Bryman &Bell , 2011). Creswell (2008) notes that validity is about whether one can draw meaningful and useful inferences from scores on the instrument.for instance Content validity yields a logical judgment as to whether the instrument covers what it is supposed to cover. To ensure content validity, the instruments was reviewed by the research supervisors and other research experts. Content validity ensures that all respondents understand the items on the questionnaire similarly to avoid misunderstanding. Response options was provided for most of the questions to ensure that the answers given are in line with the research questions they are meant to measure.

3.8 Methods of Data Analysis

The analysis of data was done according to the number of variables involved. Univariate data analysis was carried out where only one variable is involved whereas bivariate was done where two variables are involved and multivariate analysis was carried out where more than two variables are involved.

3.8.1. Univariate data analysis

Univariate Data was summarized by way of several measures including means, modes, median, variances and standard deviations, skewness and kurtosis.

3.8.2. Bivariate data analysis

Computation of Chi square was done to establish whether there is any significant relationship between the dependent and independent variables. This will involve construction of contingency tables/cross

tabulations that involve contains rows and column and testing the above stated hypotheses of whether there is a relationship between the independent and dependent variables. The dependent variable (project performance) was put in the row while independent variables (risk response plans) put in columns. The investigation will either reject or fail to reject the null hypothesis on the bases of χ^2, Chi square test statistic computed alongside its significance. According to McHugh (2013) for categorical data the first and most commonly used test statistic for independence is used is the Chi-square. The second is the Fisher's exact test, which is a bit more precise than the Chi-square, but it is used only for 2 x 2. The third test is the maximum likelihood ratio Chi-square test which is most often used when the data set is too small to meet the sample size assumption of the Chi-square test, which states that the number of cells with value less than 5 should not exceed 20% and if this happens inference should be made from the maximum likelihood ratio and not the Chi-square statistic. The value of Spearman ρ (rho) was computed to determine the strength and direction of relationship between dependent and independent variables. All appropriate descriptive statistics was were run on the data, along with Pearson Chi-square analysis using a significance level of 0.05 to determine statistical significance of the relationships between categorical variables and Spearman-rho to determine the correlation between project performance and risk management practices.

3.8.3. Testing Hypotheses

According to Chandorkar, A.G. (2010) a hypothesis is a proposition, condition, principle or an assertion which is to be investigated. The hypothesis may be developed from various sources based on a hunch, or findings of another study or stem from a body of theory which may logically lead to some prediction or may be based even on personal experience. As hypothesis cannot be proved directly - its opposite, called Null hypothesis which hypothesis predicts no difference between comparison groups, null hypothesis is postulated and an experiment is done to see whether the observed results are probably under the null hypothesis. If not we reject the null hypothesis and tentatively accept the alternative hypothesis. Krishnaswami, (2010) asserts that hypotheses are tested with tests of significance. This testing involves

the assessment of the probability of specific sampling results then drawn under assumed population conditions. Provides the test of these assumptions. About the relationships among variables. An Assumptions about the population parameters are made in advance and the sample inference is also drawn about the relationships among variables. These variables are independent i.e. avoidance, acceptance, transfer and reduction/mitigation versus dependent variables i.e. project duration.

3.9 Operational definition of variables

Table 3.4 shows the operationalization of variables indicating the independent variables and how they were measured in the study.

Table 3.4: operationalization of variables

Objective 1	**Independent variables**	**Indicators**	**Measurement scale**	**Types of analysis**	**Tools of analysis**
To establish how risk avoidance influences performance of projects funded by international development organizations	risk avoidance	Contingency plans	Ordinal	Test of independence Measures of association	Pearson Chi square Spearman rank correlation
		Taking no action	Ordinal		
		Use of safety systems	Ordinal		
Objective 2	**Independent variables**	**Indicators**	**Measurement scale**	**Types of analysis**	**Tools of analysis**
To determine the extent to which risk transference influences the performance of projects funded by international development organizations	risk transference	Use of outsourcing	Ordinal	Test of independence Measures of association	Pearson Chi square Spearman rank correlation
		Use of insurance policy	Ordinal		
		Legal agreements so as to transfer risks to a third party	Ordinal		
Objective 3	**Independent variables**	**Indicators**	**Measurement scale**	**Types of analysis**	**Tools of analysis**

To establish how the technique of risk mitigation influences the performance of projects funded by international development organizations	risk mitigation	Risk mitigation by use of meetings	Ordinal	Test of independence Measures of association	Pearson Chi square Spearman rank correlation
		Use of contingency plans	Ordinal		
		safety systems	Ordinal		
		Use of quality assurance	Ordinal		
		Use of signed contracts	Ordinal		
		Risk mitigation by crisis meetings	Ordinal		
Objective 4	**Independent variables**	**Indicators**	**Measurement scale**	**Types of analysis**	**Tools of analysis**
To establish how the technique of risk acceptance influences the performance of projects funded by international development organizations	risk acceptance	taking no action on perceived risk	Ordinal	Test of independence Measures of association	Pearson Chi square Spearman rank correlation
		establish contingency plans	Ordinal		

3.10Ethical issues

Ethics deals with individual conduct and serves as a guide to one's behavior. The investigation maintained confidentiality and privacy of the respondents and where anonymity of individual was required, the investigation provided. The investigation acknowledged the work of other authors to avoid research plagiarism and fraud. As regarded the issues regarding copyright the investigation will sought permission to use figures and tables from other published sources. Quotes were properly referenced.

3.11 Summary of the chapter

The foregoing chapter highlighted methods and justifications for collection and analysis of relevant data together with proposed research design. The chapter delves into the sampling techniques to be used and the sampling procedure that is appropriate for the study. The chapter provides a synopsis of how the data was collected employing questionnaires with Likert-type questions bearing in mind how reliable and valid these instrument were using techniques put forth by relevant literature. The chapter highlights how data was analyzed as well as how the variables of the investigation was operationalized.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1. Introduction

This chapter contains the analysis of the data as collected from the sample population. It attempts to analyze, interpret and present the data obtained from the questionnaires distributed to individuals involved in management of projects that are funded by international development organizations based in Nairobi city Kenya. This study sought to establish the influence of risk response strategies on performance of projects and specifically those projects that receive funding from international development organizations. Techniques of data analysis include correlation analysis and Pearson Chi square for bivariate data in testing statistical significance.

4.2. Rate of response

Rate of response refers to the number of people who answered the survey divided by the number of people in the sample. It is usually expressed in the form of a percentage. In table 4.1 below the value of response rate given in the last column. A total of 160 questionnaires were distributed to the respondents and a total of 126 questionnaires were returned which represents 78.75% of the number of questionnaires that were distributed. Table 4.1 below shows the response of the project managers working in international development organizations. This indicates that 34 questionnaires were not returned by the respondents and this is 21.25% of the total questionnaires distributed.

Table 4.1: Rate of response

Commented [S1]: you

Name of organization	No. of respondents	Rate of response
ACTIONAID	12	9.50%
CANADIAN INTERNATIONAL DEVELOPMENT AGENCY	16	12.70%
CARE INTERNATIONAL	9	7.10%
UNDP	19	15.10%
USAID	31	24.60%
WORLD BANK	15	11.90%
WORLD VISION	24	19.00%
Total	126	100

4.1. Age of Respondents

Table 4.2 shows that majority of project managers in international development organizations are between the ages of 30-39 Years this represents 33.30% of the total respondents. These findings show that international development organizations employ project managers who are relatively of young age. Due to this relatively young age bracket the international development organizations have the potential of ensuring that risk response strategies practices they adopt enhance the project managers' performance.

Table 4.2: Age of respondents

Age	No. of respondents	Percentage of respondents
20-29 Years	17	13.50%
30-39 Years	42	33.30%
40-49 Years	38	30.20%
50-59 Years	29	23.00%
Total	126	100

4.3. Gender of the respondents

Table 4.3 below summarizes the total number of respondents by gender. The table shows that the majority of project managers' are male as represented by 52.40% as opposed to 47.60% of female. These findings show the organizations studied on average have a higher number of male employees than female one although the gap between them is only approximately 4.8%.

Table 4.3: Gender of the respondents

Gender	No. of respondents	Percentage of respondents
Female	60	47.60%
Male	66	52.40%
Total	126	100

4.4. Influence of risk management strategies on performance of projects

The purpose of this study was to establish whether there exists a relationship between risk management strategies and performance of the project in terms of meeting planned time schedule during the implementation phase of project management in international development organizations operating in Nairobi city, Kenya.it also seeks to establish the statistical significance of the relationship between risk response plans and project performance. The analysis of statistical significance between the influence of risk management strategies and performance of projects funded by international development projects was summarized below.

4.5. Influence of risk avoidance on performance of projects

4.5.1. Influence of risk avoidance (contingency plans) on performance of projects

The study sought to find out how the technique of risk avoidance by use of contingency plans and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.4.The value of Pearson Chi-Square statistic (χ^2) from the sample data was 38.392, but as the results in table 4.4 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 36.085 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk avoidance by use of contingency plans had a statistically significant influence on performance of projects.

Table 4.4: Testing significance of Risk avoidance (contingency plans) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	38.392[a]	12	0.000
Likelihood Ratio	36.085	12	0.000
Linear-by-Linear Association	0.276	1	0.599
No. of Valid Cases	126		

4.5.2. Influence of risk avoidance (work plans) on performance of projects

The study sought to find out how the technique of risk avoidance by use of work plans and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.5. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 31.449, but as the results in table 4.5 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 34.902 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk avoidance by use of work plans had a statistically significant influence on performance of projects.

Table 4.5: Testing significance of Risk avoidance (work plans) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	31.449[a]	9	0.000
Likelihood Ratio	34.902	9	0.000
Linear-by-Linear Association	2.697	1	0.101
No. of Valid Cases	126		

4.5.3. Influence of risk avoidance (safety systems) on performance of projects

The study sought to find out how the technique of risk avoidance by use of safety systems and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.6. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 25.656, but as the results in table 4.6 show

this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 29.192 and the respective probability value (p-value) in the asymptotic significance column is 0.004 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0.4% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk avoidance by use of safety systems had a statistically significant influence on performance of projects.

Table 4.6: Testing significance of Risk avoidance (safety systems) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	25.656[a]	12	0.012
Likelihood Ratio	29.192	12	0.004
Linear-by-Linear Association	0.049	1	0.825
No. of Valid Cases	126		

4.5.4. Influence of risk avoidance (regular inspections) on performance of projects

The study sought to find out how the technique of risk avoidance by use of regular inspections and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.7. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 20.050, but as the results in table 4.7 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 25.688 and the respective probability value (p-value) in the asymptotic significance column is 0.012 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 1.2% chance to find the observed (or a

larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk avoidance by use of regular inspections had a statistically significant influence on performance of projects.

Table 4.7: Testing significance of Risk avoidance (regular inspections) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	20.050[a]	12	0.066
Likelihood Ratio	25.688	12	0.012
Linear-by-Linear Association	1.694	1	0.193
No. of Valid Cases	126		

4.6. Influence of risk transference on performance of projects

4.6.1. Influence of risk transference (outsourcing) on performance of projects

The study sought to find out how the technique of risk transference by use of outsourcing and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.8. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 64.310, but as the results in table 4.8 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 70.937 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and

so the rule of inference was that this relationship was statistically significant, in other words risk transference by use of outsourcing had a statistically significant influence on performance of projects.

Table 4.8: Testing significance of Risk transference (outsourcing) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	64.310[a]	16	0.000
Likelihood Ratio	70.937	16	0.000
Linear-by-Linear Association	7.252	1	0.007
No. of Valid Cases	126		

4.6.2. Influence of risk transference (insurance) on performance of projects

The study sought to find out how the technique of risk transference by use of insurance and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.9. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 70.385, but as the results in table 4.9 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 76.757 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk transference by use of insurance had a statistically significant influence on performance of projects.

Table 4.9: Testing significance of Risk transference (insurance) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	70.385[a]	16	0.000
Likelihood Ratio	76.757	16	0.000
Linear-by-Linear Association	3.216	1	0.073
No. of Valid Cases	126		

4.6.3. Influence of risk transference (contractual agreements) on performance of projects

The study sought to find out how the technique of risk transference by signing contractual agreements and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.10. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 47.654, but as the results in table 4.10 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 58.110 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk transference by signing contractual agreements had a statistically significant influence on performance of projects.

Table 4.10: Testing significance of Risk transference (agreements) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	47.654a	16	0.000
Likelihood Ratio	58.110	16	0.000
Linear-by-Linear Association	13.338	1	0.000
No. of Valid Cases	126		

4.7. Influence of risk mitigation on performance of projects

4.7.1. Influence of mitigation (meetings) on performance of projects

The study sought to find out how the technique of risk mitigation by holding meetings and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.11. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 78.033, but as the results in table 4.11 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 76.976 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk mitigation by holding meetings had a statistically significant influence on performance of projects.

Table 4.11: Testing significance of Risk mitigation (meetings) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	78.033[a]	12	0.000
Likelihood Ratio	76.976	12	0.000
Linear-by-Linear Association	1.462	1	0.227
No. of Valid Cases	126		

4.7.2. Influence of mitigation (contingency plans) on performance of projects

The study sought to find out how the technique of risk mitigation by use of contingency plans and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.12. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 56.610, but as the results in table 4.12 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 53.109 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk mitigation by use of contingency plans had a statistically significant influence on performance of projects.

Table 4.12: Testing significance of Risk mitigation (contingency plans) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	56.610[a]	12	0.000
Likelihood Ratio	53.109	12	0.000
Linear-by-Linear Association	5.106	1	0.024
No. of Valid Cases	126		

4.7.3. Influence of risk mitigation (quality assurance) on performance of projects

The study sought to find out how the technique of risk mitigation by use of quality assurance and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.13. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 80.238, but as the results in table 4.13 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 73.989 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk mitigation by use of quality assurance had a statistically significant influence on performance of projects.

Table 4.13: Testing significance of Risk mitigation (quality assurance) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	80.238[a]	12	0.000
Likelihood Ratio	73.989	12	0.000
Linear-by-Linear Association	8.655	1	0.003
No. of Valid Cases	126		

4.7.4. Influence of risk mitigation (contractual agreements) on performance of projects

The study sought to find out how the technique of risk mitigation by use of contractual agreements and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.14. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 31.826, but as the results in table 4.14 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 35.962 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk mitigation by use of contractual agreements had a statistically significant influence on performance of projects.

Table 4.14: Testing significance of Risk mitigation (contractual agreements) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	31.826[a]	12	0.001
Likelihood Ratio	35.962	12	0.000
Linear-by-Linear Association	6.980	1	0.008
No. of Valid Cases	126		

4.7.5. Influence of risk mitigation (crisis meetings) on performance of projects

The study sought to find out how the technique of risk mitigation by holding crisis meetings and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.15. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 53.850, but as the results in table 4.15 below show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 54.649 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk mitigation by holding crisis meetings had a statistically significant influence on performance of projects.

Table 4.15: Testing significance of Risk mitigation (crisis meetings) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	53.850[a]	12	0.000
Likelihood Ratio	54.649	12	0.000
Linear-by-Linear Association	12.103	1	0.001
No. of Valid Cases	126		

4.8. Influence of risk acceptance on project performance

4.8.1. Influence of risk acceptance (taking no action) on performance of projects

The study sought to find out how the technique of risk acceptance by use taking no action and how it influences project performance and after analyzing data gathered from the respondents, the results of

statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.16. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 44.465, but as the results in table 4.16 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule was violated and hence the test statistic to use in making inference is Likelihood ratio, 47.294 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk acceptance by taking no action had a statistically significant influence on performance of projects.

Table 4.16: Testing significance of Risk acceptance (no action) and project performance

Test Statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	44.465[a]	16	0.000
Likelihood Ratio	47.294	16	0.000
Linear-by-Linear Association	14.554	1	0.000
No. of Valid Cases	126		

4.8.2. Influence of risk acceptance (contingency) on performance of projects

The study sought to find out how the technique of risk acceptance by use of contingency plans and how it influences project performance and after analyzing data gathered from the respondents, the results of statistical significance by using Pearson Chi-Square (χ^2) were summarized in table 4.17. The value of Pearson Chi-Square statistic (χ^2) from the sample data was 63.521, but as the results in table 4.17 show this value had a superscript letter "a" which meant that "less than 20% of expected count less than 5"rule

was violated and hence the test statistic to use in making inference is Likelihood ratio, 63.384 and the respective probability value (p-value) in the asymptotic significance column is 0.000 which is far less than the significance level, $\alpha = 0.05$ or 5% , This means that there's a 0% chance to find the observed (or a larger) degree of association between the variables if they are perfectly independent in the population and so the rule of inference was that this relationship was statistically significant, in other words risk acceptance by use of contingency plans had a statistically significant influence on performance of projects.

Table 4.17: Testing significance of Risk acceptance (contingency plans) and project performance

Test statistic	Value	Degrees of freedom	Asymptotic Significance. (2-sided)
Pearson Chi-Square	63.521[a]	16	0.000
Likelihood Ratio	63.384	16	0.000
Linear-by-Linear Association	22.499	1	0.000
No. of Valid Cases	126		

4.9. Correlation of risk management strategies and project performance

4.9.1. Correlation of risk avoidance and project performance

The value of correlation coefficient gives a hint how a change is one variable is influenced by a change in another variable or it measures the association between variables. Spearman's rho (ρ) correlation coefficient is mostly applicable whenever the variables in question are categorical (either nominal or ordinal). Table 4.18 below shows a summary of Spearman's rho (ρ) correlation coefficient, after sample data was collected, coded, and analyzed in SPSS software. From table 4.18 the value of correlation coefficient is significant at $\alpha = 0.05$ for utilization of risk avoidance by use of work plans

Table 4.18: Testing significance of Spearman's rho correlation of risk avoidance and project performance

Method	significance	Project performance
risk avoidance contingency	Correlation Coefficient	-0.087
	Sig. (2-tailed)	0.334
	N	126
risk avoidance work plans	Correlation Coefficient	0.227
	Sig. (2-tailed)	0.010
	N	126
risk avoidance safety systems	Correlation Coefficient	0.009
	Sig. (2-tailed)	0.919
	N	126
risk avoidance safety inspections	Correlation Coefficient	0.114
	Sig. (2-tailed)	0.204
	N	126

4.9.2. Correlation of risk transference and project performance

The value of correlation coefficient gives a hint how a change is one variable is influenced by a change in another variable or it measures the association between variables. Spearman's rho (ρ) correlation coefficient is mostly applicable whenever the variables in question are categorical (either nominal or ordinal). Table 4.19 below shows a summary of Spearman's rho (ρ) correlation coefficient, after sample data was collected, coded, and analyzed in SPSS software. From table 4.19 the value of correlation coefficient is significant at $\alpha = 0.01$ both utilization of risk transference by use of outsourcing and signing of contractual agreements are statistically significant

Table 4.19: Testing significance of Spearman's rho correlation of risk transference and project performance

Method	significance	Project performance
risk transference (outsourcing)	Correlation Coefficient	0.257
	Sig. (2-tailed)	0.004
	N	126
risk transference (insurance)	Correlation Coefficient	0.162
	Sig. (2-tailed)	0.070
	N	126
risk transference (contractual agreements)	Correlation Coefficient	0.305
	Sig. (2-tailed)	0.001
	N	126

4.9.3. Correlation of risk mitigation and project performance

The value of correlation coefficient gives a hint how a change is one variable is influenced by a change in another variable or it measures the association between variables. Spearman's rho (ρ) correlation coefficient is mostly applicable whenever the variables in question are categorical (either nominal or ordinal). Table 4.20 below shows a summary of Spearman's rho (ρ) correlation coefficient, after sample data was collected, coded, and analyzed in SPSS software. From table 4.20 the value of correlation coefficient is significant at $\alpha = 0.05$ for utilization of risk mitigation by use of contingency plans and signed contracts whereas crisis meetings, quality assurance and use of safety systems were significantly correlated to project performance at $\alpha = 0.01$

Table 4.20: Testing significance of Spearman's rho correlation of risk mitigation and project performance

Method	significance	Project performance
Risk mitigation meetings	Correlation Coefficient	0.100
	Sig. (2-tailed)	0.266
	N	126
Risk mitigation contingency	Correlation Coefficient	0.198
	Sig. (2-tailed)	0.026
	N	126
Risk mitigation safety systems	Correlation Coefficient	0.288
	Sig. (2-tailed)	0.001
	N	126
Risk mitigation quality assurance	Correlation Coefficient	0.283
	Sig. (2-tailed)	0.001
	N	126
Risk mitigation signed contracts	Correlation Coefficient	0.193

	Sig. (2-tailed)	0.030
	N	126
Risk mitigation crisis meetings	Correlation Coefficient	0.337
	Sig. (2-tailed)	0.000
	N	126

4.9.4. Correlation of risk acceptance and project performance

The value of correlation coefficient gives a hint how a change is one variable is influenced by a change in another variable or it measures the association between variables. Spearman's rho (ρ) correlation coefficient is mostly applicable whenever the variables in question are categorical (either nominal or ordinal). Table 4.21 below shows a summary of Spearman's rho (ρ) correlation coefficient, after sample data was collected, coded, and analyzed in SPSS software. From table 4.21 the values of correlation coefficient were statistically significant at $\alpha = 0.01$ for utilization of risk acceptance by taking no action as well as utilization of contingency plans

Table 4.21: Testing significance of Spearman's rho correlation of risk acceptance and project performance

Method	**significance**	**Project performance**
Risk acceptance(no action)	Correlation Coefficient	0.325
	Sig. (2-tailed)	0.000
	N	126
Risk acceptance contingency	Correlation Coefficient	0.442
	Sig. (2-tailed)	0.000
	N	126

CHAPTER FIVE

SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

From the analysis and data collected, the following conclusions and recommendations were made. The responses were based on the objectives that were set out in this study. They sought to establish the influence of risk management strategies on performance of the project. Of key importance is the utilization of various tools of data analysis to be able to make inferences about the population. The summary of the major findings sheds light on some of the key areas that require special attention.

5.2. Summary of major findings

From the study findings it was apparent that there existed statistically significant relationship between risk avoidance and performance of projects, this was clearly indicated by utilization of various techniques in the effort to avoid risks including use of contingency plans, implementation of safety systems, use of work plans in execution of projects and utilization of regular inspections to ensure no eventuality occurs that may affect the performance of project. Risk avoidance also exhibited positive correlation with project performance. On the other hand utilization of the technique of risk transference as well showed a statistically significant relationship on project performance and when the correlation analysis was done it also showed a statistically significant correlation. Risk transference also showed positive correlation with project performance and was also found to have an influence on project performance upon carrying out test of significance for the various techniques of risk transference including use of outsourcing, use of insurance premium and signing of binding contractual agreements. Risk mitigation as a way of managing risks was also found to have a statistically significant influence on project performance and this was demonstrated by utilization of various techniques of mitigation such as holding meetings, making contingency plans, use of safety systems and use of signed contracts as way of reducing both the impact

and probability of occurrence of risks. The values of spearman's rho clearly indicated that there was statistically significant correlation between some risk mitigation techniques and project performance. Lastly the technique of risk acceptance was found to be statistically significant in terms of statistical dependence and even correlation for the techniques of taking no action on perceived risks and even establishment of contingency plans.

5.3. Discussions

According to (Merna, 2004) Risk avoidance involves changing the project plan to eliminate the risk or the condition that causes the risk in order to protect the project objectives from its impact. This notion seems to be corroborated by the findings in this study since there was a statistically significant influence of risk avoidance techniques on project performance which is the objective of every project manager. From the study findings it was apparent that there existed statistically significant relationship between risk avoidance and performance of projects, this was clearly indicated by utilization of various techniques in the effort to avoid risks including use of contingency plans, implementation of safety systems, use of work plans in execution of projects and utilization of regular inspections to ensure no eventuality occurs that may affect the performance of project. From the study findings using Pearson Chi square test of independence risk avoidance has an influence on project performance. The values of likelihood ratio statistics upon setting the significance level $\alpha=0.05$ or 5% for contingency plans, implementation of safety systems, use of work plans in execution of projects and utilization of regular inspections yielded 36.085,34.902, 29.192, 25.688, respectively all show that this relationship is significant by setting the $\alpha=0.05$ and a two-tailed test of 95% confidence interval. As for Spearman's rho(ρ) correlations the method of risk avoidance by work plans was the only one that had a significant influence on project performance at $\alpha=0.05$ level of significance was positively correlated meaning that for instance an increase in utilization of this method of risk management increases chances of project performance. 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 impacts they bring is also an option when the risks are outside the project management's control, for example political issues or labor strikes (Darnall and Preston, 2010). The situation may also consist of catastrophes that are rare and unpredictable in a certain environment. (Winch, 2002) Such risks that are beyond the management's control should be transferred through insurance policies. Risk transference is the process of transferring any losses incurred to a third party, such as through the use of insurance policies, outsourcing to a party or even contractual agreements to transfer risk to third party. It was apparent from the study that was carried out that some of these techniques are employed by project and programme managers working for international development organizations. From the study findings it was apparent that there existed statistically significant relationship between risk transference and performance of projects, this was clearly indicated in by utilization of various techniques in the effort to transfer risks including use of outsourcing, insurance and contractual agreements in execution of projects to ensure no eventuality occurs that may affect the performance of project. From the study findings using Pearson Chi square test of independence risk avoidance has an influence on project performance. The values of likelihood ratio statistics upon setting the significance level $\alpha=0.05$ or 5% for outsourcing, insurance and contractual agreements yielded 70.937, 76.757 and 58.110 respectively all show that this relationship is significant by setting the $\alpha=0.05$ and a two-tailed test of 95% confidence interval. As for Spearman's rho(ρ) correlations the method of risk transference by outsourcing and contractual agreement were the two methods that had a statistically significant influence on project performance at $\alpha=0.01$ level of significance were positively correlated meaning that for instance an increase in utilization of this methods of risk management increase chances of project performance. Risk transference by insurance was also found to be correlated although not significant at 0.01 significance level. By having an overview over the whole project it is easy to identify problems which are causing damage. In order to reduce the level of risk, the exposed areas should be changed (Potts, 2008). This is a way of minimizing the potential risks by mitigating their likelihood (Thomas, 2009). Cooper et al. (2005) suggests that among other techniques of risk mitigation contingency planning is crucial and this seems to

be corroborated from the study that was carried out in international development organizations. From the study findings it was apparent that there existed statistically significant relationship between risk mitigation and performance of projects, this was clearly indicated in by utilization of various techniques in the effort to avoid risks including use of contingency plans, implementation of safety systems, use of work plans in execution of projects and utilization of regular inspections to ensure no eventuality occurs that may affect the performance of project. From the study findings using Pearson Chi square test of independence risk avoidance has an influence on project performance. The values of likelihood ratio statistics upon setting the significance level $\alpha=0.05$ or 5% for influence of mitigation (meetings), influence of mitigation (contingency plans), influence of risk mitigation (quality assurance), influence of risk mitigation (contractual agreements) and influence of risk mitigation (crisis meetings) yielded 76.976,53.109,73.989,35.962,54.649 respectively all show that this relationship is significant by setting the $\alpha=0.05$ and a two-tailed test of 95% confidence interval. As for Spearman's rho(ρ) correlations the method of risk mitigation by contingency and signing contracts and risk mitigation signed contracts both that had a significant influence on project performance at $\alpha=0.05$ and at $\alpha=0.01$ level of significance for risk mitigation safety systems, risk mitigation quality assurance and risk mitigation crisis meetings were positively correlated meaning that for instance an increase in utilization of this method of risk management increases chances of project performance. When a risk cannot be transferred or avoided, the best solution is to accept the risk. In this case the risk must be controlled, in order to minimize the impact of its occurrence (Potts, 2008). This strategy can also be an option when other solutions are uneconomical (Thomas, 2009). Acceptance indicates a decision not to make any changes to the project plan to deal with a risk or that a suitable response strategy cannot be identified. From the study findings it was apparent that there existed statistically significant relationship between risk acceptance and performance of projects, this was clearly indicated in by utilization of various techniques in the effort to avoid risks including use of contingency plans, implementation of safety systems, use of work plans in execution of projects and utilization of regular inspections to ensure no eventuality occurs that may affect the performance of

project. From the study findings using Pearson Chi square test of independence risk avoidance has an influence on project performance. The values of likelihood ratio statistics upon setting the significance level α=0.05 or 5% for influence of risk acceptance (no action), influence of risk acceptance (contingency) yielded 47.294, 63.384, respectively all showed that this relationship is significant by setting the α=0.05 and a two-tailed test of 95% confidence interval. As for Spearman's rho(ρ) correlations the method of risk acceptance by no action and contingency were the ones that had a significant influence on project performance at α=0.01 level of significance were positively correlated meaning that for instance an increase in utilization of this method of risk management increases chances of project performance.

5.4. Conclusion

The study concludes that there was a statistically significant relationship between risk response plans of avoidance, transference, mitigation and acceptance and the performance of projects funded by international development organizations. As regards risk avoidance from the findings in the study we that was carried out on international development organization it can be concluded that use of various methods of risk avoidance like contingency planning, elaborate work plans for project activities, implementation of safety systems as well as regular inspections on project activities have got an influence on performance of projects. This can be seen from the computed values of the likelihood ratio statistic in Chi square tests which showed statistical significance at $\alpha = 0.05$ or 5% significance level. The values of Spearman's rho(ρ) correlation coefficients for various risk avoidance strategies indicate that there exists a significant association. When it comes to risk transference or transferring risk to a third party the study that was carried out on international development organization revealed that setting the level of significance at 0.05, it can be concluded that the influence of risk transference methods such as use of insurance to transfer risk to another party, outsourcing of some functions and even contractual agreements can have an influence of performance of international development projects. The measures of association in terms of Spearman's rho(ρ) correlation coefficient similarly the methods of risk mitigation or reduction which aim

at reducing the impact or probability of occurrence of a given risk event that may lead project activities to delay and in the context of international development organization projects that were sampled from it was clear that by setting significance level $\alpha = 0.05$ and 95% confidence interval it was can be concluded that methods such as holding meetings to discuss on any events that may lead to delay in project implementation, putting contingency plans in place to ensure fall back plans in case the projected activities don't go as planned, quality assurance and signing contractual agreements that would ensure the performance of projects is not compromised are among some of the techniques that proved to have statistically significant influence on the performance of projects funded by international development organizations. The statistical significance of the values of Spearman's rho(ρ) correlation coefficient attested to the fact that there was association between these strategies and performance of projects funded by international development organizations and same inference applies to the technique of risk acceptance also proved that there was statistical significance of this association at given significance level of $\alpha = 0.05$ and $\alpha = 0.01$.

5.5. Recommendation

It is without a doubt that the concept of risk management being one of key knowledge areas in project management according to project management body of knowledge. Undoubtedly it is every projects managers desire to be able to execute and complete project within the set budget, time, quality and customer satisfaction requirements. In the real sense this reality is never achievable duet to impediments that come in their way infirm of uncertainties that hamper the set objectives. These are what are risks that need to be managed effectively in order to increase the chances of completing the projects within set requirements. That is why it is imperative to inculcate risk management in the process of managing projects and programmes. From the foregoing literature review and data analysis, it is apparent that the role of risk management cannot be ignored since it has an influence performance of the projects. The current study strongly recommends that more research should be dedicated to the field of risk management

in order to unearth even some more methods of risk management that can be influential in terms of helping project managers meet the deliverables that are desired within the set time and budget limits. Methodological approaches also need to be improved for example the sample size which need to be scaled up in order to increase accuracy when making estimates and generalizations.

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APPENDICES

Appendix I: Letter of Introduction

Wabomba Kennedy Wanyonyi

PO BOX 2285-10100

Nyeri

To:

The Project Manager/Coordinator

Dear Sir/Madam

RE: REQUEST FOR PARTICIPATION IN RESEARCH

I am a postgraduate student at the University of Nairobi pursuing a master of arts in project management degree.as part of the program I am required to conduct a research on "influence of risk management strategies on project performance: a survey of international development organizations based in Nairobi city, Kenya". To be able to collect the necessary data, I would appreciate so much if you would complete the attached questionnaire. The information you provide was treated with utmost confidentiality and will solely be used for academic purposes only.

Your contribution was highly appreciated

Thank you in advance

Yours faith fully,

Wabomba Kennedy Wanyonyi

Appendix II: Questionnaire

SECTION A: DEMOGRAPHIC DATA

Gender	Male ☐ Female ☐
What is your age in years?	20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐
How long have you worked for your organization	……..years

SECTION B: Company identification data

Organization Name***			
Address***			
What is the position you hold in your organization?	Project Manager ☐	Programme Manager ☐	Other ☐
	If other, what is the name of your position……..		

KEY *** optional

SECTION C: risk avoidance

This section seeks how your opinion on how the organization you work for utilizes methods of avoiding any events that may delay projects under you as you implement them. Please tick in only one box showing how you agree with the given statements

	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
	5	**4**	**3**	**2**	**1**
The organization encourages use of contingency/alternative plans or in order to avoid any situation that may cause delays in project implementation	☐	☐	☐	☐	☐
The organization encourages use of detailed work plans so as to limit occurrence of anything that may delay the implementation of the project	☐	☐	☐	☐	☐
The organization has put in place protection and safety systems against any event that may delay the project implementation	☐	☐	☐	☐	☐
The organization uses regular inspections to ensure no issue arises that may delay project implementation	☐	☐	☐	☐	☐

The organization has a programme on training of employees on how to ensure that projects run on schedule	☐	☐	☐	☐	☐

This section seeks how your opinion on how the organization you work for utilizes methods of ensuring that risks di not delay projects under you as you implement them by transferring them to another party. Please tick in only one box showing how you agree with the given statements

	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
	5	**4**	**3**	**2**	**1**
the organization usually outsources some functions especially on those that may impact on the duration of the project	☐	☐	☐	☐	☐
The organization buys insurance premium on some items so as to ensure no occurrence will cause a delay in project implementation	☐	☐	☐	☐	☐
The organization enters into legal agreements especially regarding any event that may cause the project implementation to delay	☐	☐	☐	☐	☐

This section seeks how your opinion on how the organization you work for utilizes methods of ensuring that risks di not delay projects under you as you implement them by minimizing chances of occurrence

of an event That may delay implementation of a project.. Please tick in only one box showing how you agree with the given statements

	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
The organization conducts periodic meetings with project team to alleviate the possible causes of project delay	**5**	**4**	**3**	**2**	**1**
The organization encourages use of contingency/alternative plans or in order to avoid any situation that may cause delays in project implementation	☐	☐	☐	☐	☐
The organization uses quality assurance technique as a method to ensure that any situation that may cause project delay is eliminated	☐	☐	☐	☐	☐
The organization adheres to signed contracts terms and conditions on the issues that may influence the duration of implementation of projects	☐	☐	☐	☐	☐
The organization plans for crisis meetings and disaster recovery plans on issues that may affect the duration that the project will take in order to avoid such scenarios	☐	☐	☐	☐	☐

This section seeks how your opinion on how the organization you work for utilizes methods of ensuring that risks di not delay projects under you as you implement them by accepting that there is not much that can be done but to just accept that the risks are likely to occur and the steps that can be taken to prevent are too costly. Please tick in only one box showing how you agree with the following statements.

	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
	5	**4**	**3**	**2**	**1**
On some occasions the organization takes no action because it recognizes that though some events may occur and affect duration of the project, it is best not to do anything about them	☐	☐	☐	☐	☐
The organization encourages use of contingency/alternative plans or in order to avoid any situation that may cause delays in project implementation	☐	☐	☐	☐	☐

SECTION D: organizational risk management culture

	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
	5	**4**	**3**	**2**	**1**
The organization uses a recognized training method to facilitate the improvement of general knowledge on risk management?	☐	☐	☐	☐	☐
The organization provides funding to facilitate management of risks that may delay projects	☐	☐	☐	☐	☐
The organization is familiar with and implements ISO 31000 or ISO 31010 standards on risk management?	☐	☐	☐	☐	☐
The organization effectively communicates the risk to the employees or stakeholders (internal and external)?	☐	☐	☐	☐	☐

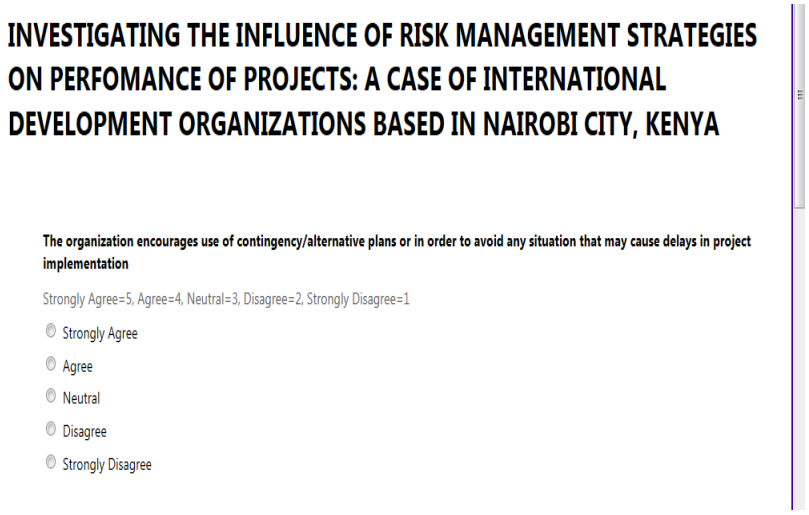
SECTION E: Project performance

This section seeks your assessment regarding the performance of the project in terms of how well the projected time schedule under your section was met. Please tick in the boxes accordingly

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

i.	I have successfully completed projects on schedule	☐	☐	☐	☐	☐
ii.	In my opinion using risk avoidance led to timely completion of projects	☐	☐	☐	☐	☐
iii.	In my opinion using risk transfer(e.g. insurance or outsourcing or contractual agreements to transfer risk to third party)) led to timely completion of projects	☐	☐	☐	☐	☐
iv.	In my opinion using risk acceptance led to timely completion of projects	☐	☐	☐	☐	☐
v.	In my opinion using risk reduction led to timely completion of projects	☐	☐	☐	☐	☐

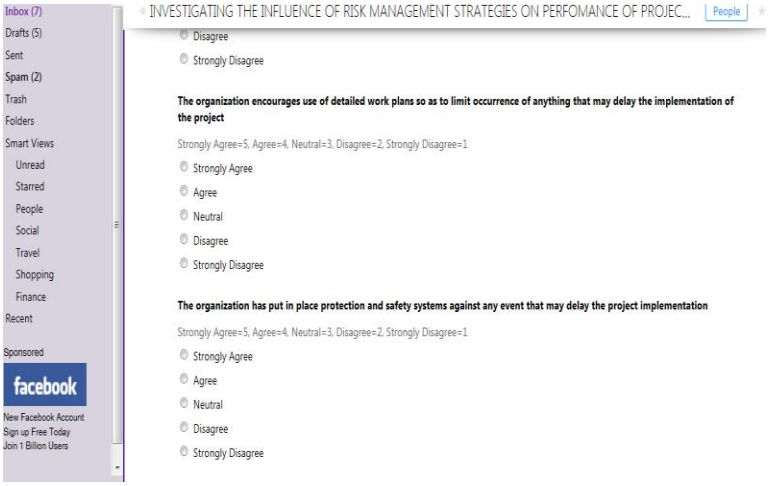
Appendix III: sample online questionnaire-1



INVESTIGATING THE INFLUENCE OF RISK MANAGEMENT STRATEGIES ON PERFOMANCE OF PROJECTS: A CASE OF INTERNATIONAL DEVELOPMENT ORGANIZATIONS BASED IN NAIROBI CITY, KENYA

The organization encourages use of contingency/alternative plans or in order to avoid any situation that may cause delays in project implementation

Strongly Agree=5, Agree=4, Neutral=3, Disagree=2, Strongly Disagree=1

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Appendix IV: sample online questionnaire-2