PROJECT CONTROL SYSTEM AND PUBLIC HEALTH SERVICE DELIVERY IN UGANDA: A CASE STUDY OF THE MALARIA CONTROL PROGRAMME IN KABALE DISTRICT

BY

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DECLARATION

I, Doreen Nyamwenge, declare that this study is original and has not been submitted to any other institution for any award.

Signed ..... Date.....

Doreen Nyamwenge

APPROVAL

This is to certify that this study has been carried out under our supervision and has been submitted for external examination with our approval as Uganda Management Institute supervisors.

Signature …….. Date……

Mr. Fred H. Wahitu

Signature …….. Date……..

Mr. Ivan Twinomuhwezi

DEDICATION

To my family for their enormous support towards my whole academic life and success. God bless you mightily mummy.

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LIST OF ACRONYMS

CEC : Cost Engineering Committee

CVI : Content Validity Index

DLS : District Malaria Focal Person

GS : Gross sample

IBC : Industry Benchmarking Consortium

IMCI : Integrated Management of Childhood Illness

IPA : Independent Project Analysis

IRS : Interior residue spray

MCP : Malaria Control Programme

RBM : Roll Back Malaria

SAQs : Self-administered questionnaires

SPSS : Statistical Package for Social Scientists

TOC : Theory of Constraints

TP : Thinking Processes

UMI : Uganda Management Institute

ABSTRACT

The purpose of the study was to determine the effect of project control system on public health service delivery in Uganda with particular reference to the Malaria Control Programme (MCP) in Kabale District. The specific objectives were to find out the effect of project quality control on public health service delivery, to determine the effect of project risk management on public health service delivery and to establish the effect of project resource control on public health service delivery. The study was guided by the Theory of Constraints (TOC). A case study design and cross-sectional survey were adopted under which both quantitative and qualitative methods were applied in data collection and analysis. The target sample was 99 respondents but the actual sample that participated in the study was 84 respondents. Simple random method was used to select staff in non-managerial positions of the MCP in Kabale District while purposive sampling was used to select staff in managerial positions. Quantitative data analysis mainly consisted of descriptive statistics (frequencies and percentages) and inferential statistics (Spearman correlation and regression). Content analysis was used to analyze qualitative data. Findings revealed a moderate positive significant correlation between project quality control and health service delivery, a strong positive significant correlation between project risk management and health service delivery and a moderate positive significant correlation between project resource control and health service delivery. It concluded that project quality control, project risk management and project resource control as measure of project control system play an important role in the MCP health service delivery. It is recommended to enhance health service delivery that priority should be put on project quality assurance, project risk assessment and non-financial resource control given that these significantly effected health service delivery of the MCP in Kabale in Uganda.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This study was about project control system and public health service delivery in Uganda using a case study of the MCP in Kabale District. Projects have been used to improve public health service delivery. Project control system was the independent variable while public health service delivery was the dependent variable. This chapter presents the background to this study, the statement of the problem, the purpose of the study, objectives of the study, the research questions, research hypotheses, scope of the study, the significance of the study, the justification of the study, the conceptual framework and operational definitions of terms and concepts.

1.2 Background

1.2.1 Historical background

The healthcare industry has been engaged in projects for a long time to enhance health service delivery, but not necessarily using formal project management techniques (Schwalbe, 2013). In addition, from the 1940s to 1950s, some unique aspects of healthcare projects have included patient quality as a key concern. Most healthcare projects have been done to help people prevent, improve, or deal with a health concern. Furthermore, the government has often been the sponsor or reason for a healthcare project or it has created laws or standards that must be followed in private healthcare projects. Another aspect is that donations have been often a major source of funding where many healthcare projects have been prompted by donations or rely on them for their continuation. Care quality, cost containment, and external review have been key characteristics (Schwalbe, 2013).

From the 1960s to the 1990s, healthcare projects have often involved different types of people to ensure improved health service delivery (Khasem, 2012). Instead of just one leader, Healthcare projects have been led by different people such as a project physician or other medical expert, project designers, project managers, project administrators and information technology experts (Leiner, Barry et. al, 2000).

Today, healthcare organizations are realizing that to improve service delivery, they must develop skills to effectively select and manage the projects they undertake. They also realize that many of the concepts of project management will help them as they work with people on a day-to-day basis. Healthcare organizations claim that using project management provides advantages, such as better control of financial, physical, and human resources, improved customer relations, shorter development times, lower costs, higher quality and increased reliability, improved productivity, better internal coordination, higher worker morale and reduced stress. According to Key Health Alliance (2014), the healthcare industry is experiencing dramatic evolution, and changes associated with this evolution require significant alterations to workflows and processes. In order to innovate and implement changes, organizations look to project control as a proven method to make changes across the organization (Key Health Alliance, 2014).

Despite the continuous evolution in the project management field, it appears evident that the traditional approach still shows lack of utilization of project controls in healthcare organizations and there have been a number of articles published to support the importance of control in the achievement of project objectives (Lewis, 2002; Phillips, 2009). It has been proved time and again that service delivery can be improved if dedicated project controls are in place (Modesto & Tichapondwa, 2010). An Industry Benchmarking Consortium (IBC) 2000 Project Control Best Practice Study carried out by Independent Project Analysis (IPA)

identified that good project control practices reduce execution schedule slip by 15% (Baars, 2006). Project controls cost range from 0.5% to 3% of total project cost therefore, to break even, project control needs to improve cost effectiveness by around 2% (Baars, 2006). A sample study carried out by the IBC Cost Engineering Committee (CEC) in 1999, showed cost improvements for the projects in the study was more than 10% (Dendy Construction Services, 2012). Thus, the historical background was relevant to this study in that it showed enhanced health service delivery arises from good project control practices.

1.2.2 Theoretical background

This study adopted a project management, Theory of Constraints, introduced by Goldratt in 1984 (Kumar, 2011) to explain how project control system affects service delivery in this study. It assists businesses in achieving their goals by providing a mechanism to gain better control of their initiatives. According to Goldratt, the strength of any chain, either a process or a system, is only as good as its weakest link (Kumar, 2011). The TOC is based on the premise that goal achievement by a system is limited by the presence of constraints (Watson, Blackstone & Gardner, 2007). A constraint is anything that prevents the system from achieving its goal. According to Blackstone (2001), TOC is a methodology for identifying the most important limiting factor (constraint) that stands in the way of achieving a goal and then systematically improving that constraint until it is no longer the limiting factor. TOC consists of Problem Solving and Management/Decision-Making Tools called the Thinking Processes (TP). TOC is applied to logically and systematically answer these three questions essential to any process of ongoing improvement: "What to change?", "To what to change?" and "How to cause the change?" TOC is a systemic way to identify constraints that hinder system's success and to effect the changes to remove them (Kumar, 2011).

TOC is justified for its adoption in this study of the MCP in Uganda. According to Hall and Fagen (2012), a system can be broadly defined as an integrated set of elements that accomplish a defined objective. This definition relates to that of project as Lewis (2002) defines as a unique set of coordinated activities, with definite starting and finishing points, undertaken by an individual or organization to meet specific objectives within defined schedule, cost and performance parameters.

Thus, system management as emphasized in TOC (Watson *et al*., 2007) related to the independent variable of this study. This is equivalent to project control system in this study. On the other hand, goal achievement as emphasized in TOC (Watson *et al*., 2007) related to the dependent variable of this study. This is equivalent to health service delivery in this study.

System constraints as emphasized in TOC (Watson *et al*., 2007) are similar project control constraints in this study that need to be identified and dealt with to improve public health service delivery. System constraints according to TOC can be reduced or completely eliminated through effective and efficient system management, which improves performance of the system (Kumar, 2011). Relating this to this study, project constraints could be reduced or completely eliminated through effective and efficient project control system, which improves health service delivery of the project referred to in this study as the MCP.

1.2.3 Conceptual background

The major concepts in this study included project controls, project control system, project quality control, project risk management and project resource control and healthcare service delivery. The following paragraphs provide the various definitions of concepts and the definitions that were adopted in this study.

Project controls can be defined as a management action to achieve the desired result or taken as a corrective measure prompted by the monitoring process (Ireland, 2006). They are the data gathering, data management and analytical processes used to predict, understand and constructively influence the time and cost outcomes of a project or program; through the communication of information in formats that assist effective management and decision making. The development of a suitable project control system is an important part of the project management effort (Shtub, Bard & Globerson, 2005). This study conceptualized project control system in terms of project quality control, project risk management and project resource control.

Project quality control emphasizes product/service quality assessment to uncover defects and reporting to management who make the decision to allow or deny product release, whereas product/service quality assurance attempts to improve and stabilize production (and associated processes) to avoid, or at least minimize, issues which led to the defect(s) in the first place (Smith, 2014). It is the process for ensuring that all project activities are effective and efficient with respect to the purpose of the project objective and its performance. This study conceptualized project quality control as product/service quality assessment in terms of project quality definition and project quality assurance.

Project risk management is an important aspect of project management. It is the systematic process of managing an organization's risk exposures to achieve its objectives in a manner consistent with stakeholders' interests (Tusler, 1996). There are two stages in the process of project risk management, risk assessment and risk control. Risk assessment can take place at any time during the project, though the sooner the better. However, risk control cannot be effective without a previous risk assessment. Similarly, most people tend to think that having performed a risk assessment, they have done all that is needed. Far too many projects spend a

great deal of effort on risk assessment and then ignore risk control completely (Tusler, 1996). This study defined project risk management as MCP's process of managing its risk exposures to achieve its objectives through project risk assessment and project risk control.

Project resource control refers to the power to influence or direct the deployment and utilization of resources available to a project (Lewis, 2002). Project resources typically include finances, supplies and inventory, equipment, information technology and human time, skills and input, which can be categorized into financial and non-financial resources. Thus, in this study, project resource control was conceptualized in terms of power to influence or direct the deployment and utilization of project non-financial resource control and project financial resource control.

Healthcare service delivery is defined as the process of the provision of health care to the population (Abdullah & Ramly, 2006). It is about the prevention, treatment, and management of illness and the preservation of mental and physical well-being through the services offered by the medical and allied health professions. Thus, in this study, healthcare service delivery is conceptualized in terms of mosquito net delivery, malaria drug delivery and management of malaria.

Therefore, in this study, the effect of project control system on health service delivery will be conceptualized in the following ways. It will involve the effect of project quality control, project risk management and project resource control on health service delivery. For example, the assumption of this study is that poor project quality control, project risk management and project resource control will contribute to poor health service delivery. On the other hand, better project quality control, project risk management and project resource control will contribute to better health service delivery.

1.2.4 Contextual background

In health sector of Uganda, projects have been initiated and implemented in a bid to improve public health service delivery in all of parts of the country. Where there has been international development assistance for health, projects have been the preferred approach for better public health service delivery (Peters & Chao, 1998; Cruz, Kurowski & Mills, 2003 Ssengooba et al., 2004). One of these projects in Uganda is the Malaria Control Programme (MCP). The MCP was established in 1995 by the Ministry of Health to direct and guide the day to day implementation of the National Malaria Control Strategy (Mugerwa-Kasujja, 2011). The role of the MCP is to support the implementation of the National Malaria Control Strategy through policy formulation, setting standards and quality assurance, resource mobilization, capacity development and technical support, malaria epidemic control, coordination of malaria research, and monitoring and evaluation (Starling, 2001). The MCP's outreach to districts is through zonal Roll Back Malaria (RBM) and Integrated Management of Childhood Illness (IMCI) teams, which work closely with the District Malaria Focal Persons (Ministry of Health, 2011).

In order to evaluate the project control system on public health service delivery, Kabale district was selected due to concern and criticism that had been raised about its project control system and public health service delivery. Kabale district is among the first districts in which Government of Uganda through the MCP aimed to RBM. Malaria is a common illness among communities of Kabale district, and many young children die of the illness (Tumwesigire & Watson, 2012). In 2009, many people suffered from malaria, following a malaria outbreak in Kamwezi Sub-county, Kabale District and 600 hundred cases were recorded every week in Kamwezi. For example, the MCP chose the southwestern highland Kabale District to pilot an interior residue spray (IRS) round in 2006 and build capacity for

future epidemic surveillance there (Africa Fighting Malaria, 2007). IRS was carried out between June and August 2006 and post-spraying surveys were conducted in September 2006.

In order for the MCP to effectively deliver health services, various control mechanisms have been put in place. For example, periodic reviews of the programme with the aim of improving performance and refining or redefining the strategic direction and focus are conducted (Ministry of Health, 2011). Health committees have been put in place to evaluate and monitor MCP activities (Governemt of Uganda Ministry of Health, 2011). There have been efforts to reinforce internal controls and oversight of the MCP (Governemt of Uganda Ministry of Health, 2007). Options have been adopted to strengthen financial oversight and management, mitigate the risk of fraud, and safeguard grant resources (Governemt of Uganda Ministry of Health, 2011). The Ministry of Health instituted an internal audit to verify expenditure and address the internal control weaknesses (Government of Uganda Ministry of Health, 2011). Other project control mechanisms include reinforcement of internal controls and oversight of the MCP activities (Government of Uganda Ministry of Health, 2007), strengthening of the financial oversight and management of MCP, mitigation of the risk of fraud and safeguarding grant resources (Government of Uganda Ministry of Health, 2011) and institution of an internal audit to verify expenditure and address the internal control weaknesses (Government of Uganda Ministry of Health, 2011).

1.3 Problem statement

Health service delivery has a direct impact on the well-being of individuals and as such the public wants and cares about high-quality health services from government projects (Government of Uganda Ministry of Health, 2014). As such, the Ugandan government has tried to improve the Malaria Control Programme(MCP) service delivery to meet the

expectations of the public through project control system. The project control mechanisms that the MCP has adopted include periodic reviews of MCP activities (Ministry of Health, 2011), health committees to evaluate and monitor MCP activities (Government of Uganda Ministry of Health, 2011), reinforcement of internal controls and oversight of the MCP activities (Government of Uganda Ministry of Health, 2007), to mention a few.

However, various stakeholders continued to complain about the poor MCP service delivery. For examples, there were complaints about delay in delivery of mosquito nets and malaria drugs, poor quality mosquito nets, misuse of the programme's funds and wastages of project resources (Matsiko, 2012; Bogere, 2013). There were also allegations from various stakeholders that the project control mechanisms used have not worked and service delivery has remained poor. For example, there were claims about wastage of project funds on activities that were not budgeted for such as workshops, car hires, allowances and fuel expenses (Matsiko, 2012; Bogere, 2013). Other reports alleged a loss of nearly Shs 78bn (US $29m) through unbudgeted activities (Bogere, 2013).

When it is difficult to increase health development spending for malaria both domestically and from international donors, all efforts are needed to ensure that wastage of project resources is eliminated. However, in the context of the MCP, there is no clear evidence indicating how project control system has affected health service delivery of the MCP. Therefore, one wonders why there are persistent complaints about MCP poor service delivery yet various project control mechanisms have been put in place. Thus, this study filled this knowledge gap.

1.4 Purpose of the Study

The purpose of the study was to examine the effect of project control system on public health service delivery in Uganda with a particular respect to the Malaria Control Programme in Kabale District.

1.5 Specific Objectives

The following specific objectives guided this study:

1. To find out the effect of project quality control on public health service delivery by the Malaria Control Programme in Kabale District in Uganda
2. To determine the effect of project risk management on public health service delivery by the Malaria Control Programme in Kabale District in Uganda
3. To establish the effect of project resource control on public health service delivery by the Malaria Control Programme in Kabale District in Uganda

1.6 Research Questions

The study addressed the following questions:

1. What is the effect of project quality control on public health service delivery by the Malaria Control Programme in Kabale District in Uganda?
2. How does project risk management affect public health service delivery by the Malaria Control Programme in Kabale District in Uganda?
3. What is the effect of project resource control on public health service delivery by the Malaria Control Programme in Kabale District in Uganda?

1.7 Research Hypotheses

The study was guided by the following hypotheses:

1. There is a positive significant effect of project quality control on public health service delivery by the Malaria Control Programme in Kabale District in Uganda.
2. There is a positive significant effect of project risk management on public health service delivery by the Malaria Control Programme in Kabale District in Uganda.
3. There is a positive significant effect of project resource control on public health service delivery by the Malaria Control Programme in Kabale District in Uganda.

1.8 Conceptual Framework

The conceptual framework shows project control system as the independent variable while public service delivery is the dependent variable.

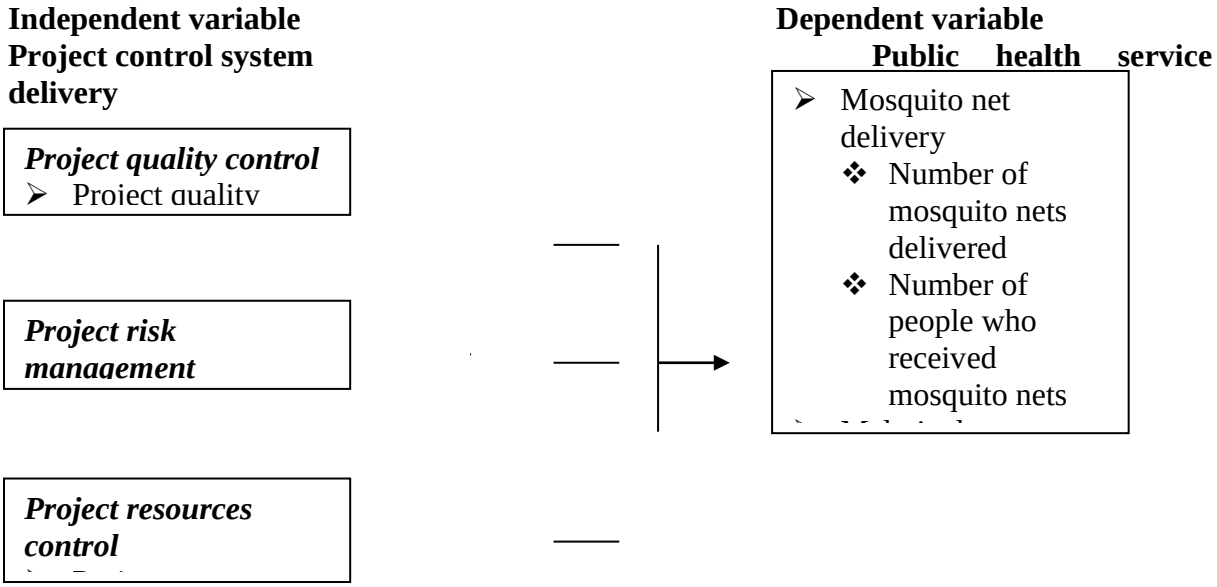

Figure 1: Conceptual framework showing relationship between project control system and service delivery

Source: Based on Goldratt Theory of Constraints (as cited Watson *et al*., 2007)

It is conceptualized that project control system affects public health service delivery. Project control system is measured in terms of project quality control, project risk management and project resource control. Public health service delivery is measured in terms of mosquito net delivery, malaria drug delivery and management of malaria. In this study, it is expected that

better project control system (that is better project quality control, project risk management and project resources control) will be associated with better public health service delivery (that is better mosquito net delivery, malaria drug delivery and management of malaria). On the hand, poor project control system (that is poor project quality control, project risk management and project resources control) will be associated with poor public health service delivery (that is poor mosquito net delivery, malaria drug delivery and management of malaria).

1.9 Significance of the Study

The study findings are expected to benefit the policy makers in controlling health national projects. The findings may be used to formulate project control policies that will be implemented to enhance health project control and thus improve public health service delivery.

The findings are hoped to benefit the government, as they will be able to understand why health project control may be used to improve project public health service delivery. This study will highlight possible challenges in the management of Uganda's Malaria Control Programme, from which lessons will be learnt for other national health projects, in order to come up with a comprehensive, flexible, and effective way of controlling such projects.

It is expected that the study findings will also suggest other areas that may need further research by the academicians who like to explore more about health project control system and public health service delivery. Findings may help the academicians enrich their knowledge about the effect of project control system on public health service delivery, which knowledge may be used in their various professions.

1.10 Justification of the Study

The study was justified because of the persistent poor service delivery by the Uganda's MCP. This showed that MCP was failing to achieve the objectives of setting standards and quality assurance, resource mobilization, and malaria epidemic control for which it was setup to achieve and yet the MCP guides the implementation of national malaria control policies to reduce the malaria burden in Uganda. Thus, the MCP poor service delivery reflected by poor delivery of mosquito nets and malaria drugs, misuse of the programme's funds, wastages of project resources was likely decrease malaria burden in Uganda. Thus, this study was important in that it will help to come up with solutions to the problems the Malaria Control Programme faces.

1.11 Scope of the Study

1.11.1 Content scope

This study focused on project control system as independent variable and healthcare service delivery as the dependent variable. Project control system was restricted to project quality control, project risk management and project resource control. Healthcare service delivery was restricted to mosquito net delivery, malaria drug delivery and management of malaria

1.11.2 Geographical scope

Geographically, the study was conducted in Kabale District located in the South Western part of Uganda highlands. This was because Kabale is an epidemic prone district and one of the districts in which initial Roll Back Malaria program under MCP took place.

1.11.2 Time scope

The study was restricted from 2006 to 2014. This was because the Uganda's Malaria Control Programme has been running during this period.

1.12 Definition of Key Terms

Healthcare service delivery referred MCP's mosquito net delivery, malaria drug delivery and management of malaria.

Project controls were conceptualized MCP's project control system in terms of project quality control, project risk management and project resource control.

Project quality control referred to MCP's product/service quality assessment in terms of project quality definition and project quality assurance.

Project resource control referred MCP's power to influence or direct the deployment and utilization of project non-financial resource control and project financial resource control.

Project risk management referred to MCP's process of managing its risk exposures to achieve its objectives through project risk assessment and project risk control.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

This chapter examines both the theoretical review and literature review. Related literatures have been reviewed on project quality control, project risk management, and project resource control in relation to service delivery.

2.2 Theoretical Review

The Theory of Constraints is a systems based management philosophy that is used to assist in the continuous improvement of a system's performance by focusing on core problems that are preventing the system from achieving its goal (Schaefers, Aggoune, Becker. & Fabbri, 2004; Simatupang, Wright & Sridharan, 2004; Gupta & Kline, 2008; Kim, Mabin & Davies, 2008; Inman, Sale & Green, 2009; Blackstone, 2001; Mabin and Baldestone, 2003; Watson *et al*., 2007). The TOC approach is based on Systems Thinking (Mabin & Balderstone, 2003; Scoggin, Segelhorst & Reid, 2003; Taylor & Churchwell, 2004) and as such, considers the overall performance of the system rather than focusing on improving the performance of an individual task or component in the system. The TOC recognizes that every system has elements that limit its performance, called "constraints" (Mabin & Balderstone, 2003; Schaefers *et al*., 2004; Simatupang, Wright & Sridharan, 2004; Gupta & Kline, 2008). The Theory of Constraints encourages managers to identify the constraints and find ways to eliminate them (Simatupang, Wright & Sridharan, 2004).

Available literature (such as Gupta, Ko & Min, 2002; Mabin & Balderstone, 2003; Watson *et al*., 2007; Inman *et al*., 2009; Lin, Lee & Lee, 2009) indicates that the application of the TOC results in significant improvement in organizational performance. Sale and Inman (2003) determined through a survey that firms that employ the TOC techniques perform significantly

better than those using traditional manufacturing methods. Rigorous academic testing confirmed that manufacturing systems that employ the TOC techniques perform better than those using well known alternatives, such as Manufacturing Resource Planning (MRP), Just-in-Time (JIT), Lean Manufacturing and Agile Manufacturing (Ramsy, Stich & Garon, 1990; Mabin and Baldestone, 2000). Studies have demonstrated that the use of the TOC reduces inventory, work in process inventory, lead times, and improves due date delivery performance (Mabin and Balderstone, 2003; Watson & Patti, 2008).

TOC is, however, not without criticism. Reid and Koljonen (1999) singled out the inability of the TOC to capture the dynamic nature of modern system environment as one major drawback. They argued that the relationships among systems' components depicted in the TOC' logic trees often appear to be linear and relatively static and hence fail to fully represent the dynamic complexity in modern business systems. They therefore proposed the coupling of the TOC' logic trees with System Dynamics modeling techniques as a way of strengthening the TOC process. Watson *et al.* (2007) also stated that top-level management support and commitment have more often been insufficient to sustain the TOC success. They argued that many top-level managers delegate the implementation of the TOC to mid-level managers because of the considerable length of training time that is required to master the subject matter. Furthermore, Goldratt (1990) stated that the TOC process cannot succeed in a system unless all its members develop as much enthusiasm for the TOC as the expert facilitating the process. He argued that such levels of enthusiasm among system members can only be achieved if the members come to the same conclusion and regard the conclusions as their own.

2.3 Project Quality Control and Service Delivery

Quality control involves monitoring specific project results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory results. Quality control should be performed throughout the project (Cooper, 1993). Project results include both product results such as deliverables and management results such as cost and schedule performance. Phillips (2008) was of the view that in project management, quality control requires the project manager and the project team to inspect the accomplished work to ensure its alignment with the project scope. In practice, projects typically have a dedicated quality control team which focuses on this area.

Quality control is all about keeping mistakes out of the customers' hands (Ford, 1995). Project managers and the project team must work diligently to ensure that all of the work is accurate, on-scope, and meets the objectives that the customer has defined. Quality control is a continuous process that starts and ends with the project. It is more about preventing and avoiding than measuring and fixing poor quality outputs (Ford, Lander & Voyer, 2004). It is part of every project management processes from the moment the project initiates to the final steps in the project closure phase. It focuses on improving stakeholder's satisfaction through continuous and incremental improvements to processes, including removing unnecessary activities; it achieves that by the continuous improvement of the quality of material and services provided to the beneficiaries. It is not about finding and fixing errors.

Quality has been defined as the totality of characteristics of an entity that bear on its ability to satisfy stated or implied needs (Lee, Pena-Mora & Park, 2005). The stated and implied quality needs are the inputs used in defining project requirements from the donor and the beneficiaries. It is also defined as the conformance to requirements or fitness for use, which means that the product or services must meet the intended objectives of the project and have a

value to the donor and beneficiaries and that the beneficiaries can use the material or service as it was originally intended (Smith, 2014). The central focus of quality control is meeting or exceeding stakeholder's expectations and conforming to the project design and specifications.

The ultimate judge for quality is the beneficiary, represents how close the project outputs and deliverables come to meeting the beneficiaries' requirements and expectations (Matta & Ashkenas, 2003). Thus, the main principle of project quality control is to ensure the project will meet or exceed stakeholder's needs and expectations. The project team must develop a good relationship with key stakeholders, specially the donor and the beneficiaries of the project, to understand what quality means to them. One of the causes for poor project evaluations is the project focuses only in meeting the written requirements for the main outputs and ignores other stakeholder needs and expectations for the project.

2.3.1 Quality definition and service delivery

The first step on the quality control is to define quality, the project manager and the team must identify what quality standards will be used in the project (Matta & Ashkenas, 2003). They look at what the donor, beneficiaries, the organization and other key stakeholders need to come up with a good definition of quality. In some instances, the organization or the area of specialization of the project may have some standard definitions of quality that can be used by the project.

Identifying quality standards is a key component of quality definition that will help identify the key characteristics that will govern project activities and ensure the beneficiaries and donor will accept the project outcomes. Quality control implies the ability to anticipate situations and prepare actions that will help bring the desired outcomes. The goal is the

prevention of defects through the creation of actions that will ensure that the project team understands what is defined as quality.

One source for definition of quality comes from the donor; the project must establish conversations with the donor to be familiar with and come to a common understanding of what the donor defines as quality. The donor may have certain standards of what is expected from the project and how the project delivers the expected benefits to the beneficiaries. This is in line with the project's ultimate objective that the project outcomes have the ability to satisfy the stated or implied needs.

Another source for quality definition comes from the beneficiaries; the project team must be able to understand how the beneficiaries define quality from their perspective, a perspective that is more focused on fitness for use, the project outcomes must be relevant to the current needs of the beneficiaries and must result in improvements to their lives. The team can create, as part of the baseline data collection, questions that seek to understand how the beneficiaries define the project will meet their needs, and a question that also helps define what project success looks like from the perspective of a beneficiary.

The organization may have its own quality standards that can reflect technical and managerial nature of the project. The organization may require from the project timely and accurate delivery of project information needed for decision making, or compliance to international or locally recognized quality standards that define specific technical areas of the project.

All material or services have characteristics that facilitate the identification of its quality. The characteristics are part of the conditions of how the material, equipment and services are able to meet the requirements of the project and are fit for use by the beneficiaries. Quality

characteristics relate to the attributes, measures and methods attached to that particular product or service. According to Smith (2014), these include functionality, which is the degree, by which equipment performs its intended function. Performance which is how well a product or service performs the beneficiaries intended use. Reliability which is the ability of the service or product to perform as intended under normal conditions without unacceptable failures. Relevance which is the characteristic of how a product or service meets the actual needs of the beneficiaries, it should be pertinent, applicable, and appropriate to its intended use or application. Timeliness which is how the product or service is delivered in time to solve the problems when its needed and not after. Suitability which is the fitness of its use - that is the appropriateness and correctness of the product or service. Completeness which is the quality that the product or service is complete and includes all the entire scope of services. Consistency that is services are delivered in the same way for every beneficiary.

Quality characteristics must be included in all material, equipment and services the project will purchase. The procurement officers must have a complete description of what is required by the project; otherwise, a procurement office may purchase the goods or services based on her or his information of the product, which may lead to poor service delivery.

Part of defining quality involves developing a quality plan and a quality checklist that will be used during the project implementation phase. This check list ensures the project team and other actors are delivering the project outputs according to the quality requirements. Once the project has defined the quality standards and quality characteristics, it should create a project quality plan that describes all the quality definitions and standards relevant to the project. It highlights the standards that must be followed to comply to regulatory requirements setup by the donor, the organization and external agencies such a the local government and professional organizations.

The quality plan also describes the conditions that the services and materials must posses in order to satisfy the needs and expectations of the project stakeholders. It describes the situations or conditions that make an output fall below quality standards. This information is used to gain a common understanding among the project team to help them identify what is above and what is below a quality standard.

The quality plan also includes the procedure to ensure that the quality standards are being followed by all project staff. The plan also includes the steps required to monitor and control quality and the approval process to make changes to the quality standards and the quality plan.

2.3.4 Quality assurance and service delivery

Assurance is the activity of providing evidence to create confidence among all stakeholders that the quality-related activities are being performed effectively; and that all planned actions are being done to provide adequate confidence that a product or service will satisfy the stated requirements for quality (PM4DEV, 2008). Quality assurance is a process to provide confirmation based on evidence to ensure to the donor, beneficiaries, organization management and other stakeholders that product meet needs, expectations, and other requirements (International Organization for Standardization, 1994). It assures the existence and effectiveness of process and procedures tools, and safeguards are in place to make sure that the expected levels of quality will be reached to produce quality outputs.

Quality assurance occurs during the implementation phase of the project and includes the evaluation of the overall performance of the project on a regular basis to provide confidence that the project will satisfy the quality standards defined by the project (Ledbetter & Burali,

1990). One of the purposes of quality control is to find errors and defects as early in the project as possible. Therefore, a good quality control process will end up taking more effort hours and cost up-front. The goal is to reduce the chances that products or services will be of poor quality after the project has been completed (Simmons, 2001).

Quality assurance is done not only to the products and services delivered by the project but also to the process and procedures used to manage the project, that includes the way the project uses the tools, techniques and methodologies to manage scope, schedule, budget and quality (Nicholas, Heiby & Hatzell, 2001). Quality assurance also includes the project meets any legal or regulatory standards.

Quality audits should be conducted during quality assurance (De Geyndt, 2005). Quality audits are structured reviews of the quality control activities that help identify lessons learned that can improve the performance on current or future project activities. Audits are performed by project staff or consultants with expertise in specific areas. The purpose of quality audit is to review how the project is using its internal processes to produce the products and services it will deliver to the beneficiaries (Anderson, 2001). Its goal is to find ways to improve the tools, techniques and processes that create the products and services.

If problems are detected during the quality audits, corrective action will be necessary to the tools, processes and procedures used to ensure quality is reestablished (Cruickshank, 2003). Part of the audit may include a review of the project staff understanding of the quality parameters or metrics, and skills expertise and knowledge of the people in charge of producing or delivering the products or services. If corrective actions are needed, these must be approved through the change control processes (Crawford, 2004).

Quality assurance demands a degree of detail in order to be fully implemented at every step (Ellis & Whittington, 2003). Planning, for example, could include investigation into the quality of the raw materials used or the inspection processes used. The checking step could include beneficiary feedback or surveys to determine if beneficiary needs are being met or exceeded and why they are or are not. Acting could mean a total revision in the delivery process in order to correct a technical flaw. The goal to exceed stakeholder expectations in a measurable and accountable process is provided by quality assurance (Kyrkjebo, Hanssen & Haugland, 2001).

2.4 Project Risk Management and Service Delivery

Risk control involves executing the risk management plan in order to respond to risk events over the course of the project (Tusler, 1996). Any project is subject to risks. One which finds itself in a state of perpetual crisis is failing to manage risks properly. Failure to manage risks is characterized by inability to decide what to do, when to do it, and whether enough has been done. Risk management is an activity within project management that is gaining importance in enhancing service delivery (Ahmed, Kayis & Amornsawadwatana, 2007). The risk management process consists of a series of steps, which are establishing the context, identifying, analyzing, assessing, treating, monitoring and communicating risks, which allow continuous improvement of decision-making (Standards Australia, 1999). Boehm (1991) summarized in his study that projects related problems could be eliminated if proper identification and resolving process for these risks could be done properly. By implementing risk management, organization can reduce unexpected and costly surprises and allocation of resources could be more effective (Saleem & Abideen, 2008). It improves communication and provides management a concise summary of threats, which can be faced by the organization, thus ultimately helping them in better decision making.

Effective management of risks involved in the projects ensures all the aspects like customer satisfaction are achieved effectively and it improves financial performance of the organization (Kinch et al., 2007). The need for risk management is illustrated in Gilb's risk principle "If you don't actively attack the risks, they will actively attack you" (Gilb as cited in Saleem & Abideen, 2008). Therefore, to manage a project properly, it is crucial to identify, analyze, and control risks involved in this regard. Dedolph (2003) studied risk management in projects as a neglected management activity and concluded that this activity is essential because it directly affects the project successful factors. Stoddard (2004) concluded risk management as a daunting task for organizations and it could be made successful by motivating the individuals. Organizations that implement effective project risk management become successful in project implementation while others not practicing this activity proved to be unsuccessful. Baccarini et al (2004) identified a list of 27 risks in projects among which "personnel shortfalls" and "unrealistic schedule and budget" were at the top. He concluded that project managers should pay high attention to these issues as it not only ensures service delivery but also fulfills the stake holder's expectations.

2.4.1 Risk assessment and service delivery

Establish the context is first step in risk management process (Standards Australia, 1999). Before the risk identification process, it is necessary to know that what actually the risk is, so in this phase, the aims, objectives, scope of risk management in relation to the project are defined and criteria, resources and authorities for the treatment of risks are determined. It allows representing the status of project in several forms such as resource usage, equipment requirements, budget availability, stakeholder involvement, contract deliverables, strategic goals and schedule (Ahmed, Kayis & Amornsawadwatana, 2007).

The identification of risk is one of the processes of risk management, which reveals and determines the possible risk facing up means of project. It is considered the most important step for risk management because it provides a base for the right future work of the organization concerning the developing and the implementation of new projects for the risk control (Tchankova, 2002). The method chosen for the identification of the risk depends upon the culture and organization's practices to mention some. Cerevon (2006) view risk identification as a team work which looks at project events with respect to various risk categories, and extracting those which could have a negative impact on the project. Due to vast changes in organizational environment, the risk identification process must be continuous.

After the identification of risks, risk analysis is done to determine their characteristics whether they are worth of further analysis (Ahmed, Kayis & Amornsawadwatana, 2007). In this stage, each risk identified is assigned a significant rating to help in better understanding the possible impact of a risk or the likelihood of it occurring. The purpose of risk analysis is to provide information to project owners to make decisions regarding priorities and treatment (Standards Australia, 2004). Commonly two types of risk analysis are used, quantitative and qualitative (Kinch et al., 2007).

Risk analysis provides a basis for risk evaluation in which it is decided which risk is to be treated or accepted which action plan is better to implement. The evaluation stage usually depends on the number of risks. However, when there are only few risks then the evaluation stage might be lightweight, however, when there are many risks and the situations are complex, then the evaluation becomes difficult (Standards Australia, 2004). Moreover, in the evaluation stage, risks should be examined individually as well as their combined impact on the project (Elkington et al., 2002). In risk evaluation, different mitigation options are

determined keeping in view the risk events and then most suitable option is incorporated to the risk mitigation plan (Ahmed, Kayis & Amornsawadwatana, 2007).

2.4.2 Risk control and service delivery

The important result of the risk management process is the risk treatment. Risks are determined which have worth of further investigation due to either of their relative importance or because of their high chance for occurring again, are treated by implementing a risk mitigation plan. Risks can be treated either through proactive approach or through reactive approach. Reactive approach refers to the actions initiated after the eventuation of the risks events while proactive approach refers to actions initiated based on chance of the occurrence of certain risks (Ahmed, Kayis & Amornsawadwatana, 2007). Standards Australia (2004) identifies the following options for the treatment of risks: reduce the likelihood, reduce the consequences, transfer the risk, accept the risk and avoid the risk.

Project risk control has a prominent position in the framework of project control theory and methodology (Association for Project Control, 2006; Project Control Institute, 2008). The reason is that unexpected events will usually occur during a project (Turner, 1993; Pinto, 2007). Risk control is considered a tool to limit the impact of these unexpected events, or even to prevent these events from happening. Accordingly, it is generally assumed that risk control contributes to the success of the project (Olsson, 2007).

According to Chapman and Ward (1997), project risk control positively influences service delivery by instrumental effects: through creation of a contingency plan or by influencing project time, budget or design plan. These authors also mention a social effect: influencing stakeholders and stakeholder motives. In relation to the social effect, Chapman and Ward (1997) indicate three factors which potentially influence service delivery in a positive way:

better communication between stakeholders, better collaboration between stakeholders, and more creative thinking. Rijsenbrij, Bauer and Kouwenhoven, (1993) mention the creation of project team spirit as an additional effect of the project risk control process. Unfortunately, neither report elaborates on the presence, the causes or on the strength of this social effect. This makes the social effect of risk control on service delivery an interesting topic for current research. If the social effect exists, it may have important implications for project practitioners. Practitioners may become aware that risk control helps them to not only collect information and support their decision making process, but also helps them to tune stakeholder perceptions and expectations, creating a commonly defined environment in which stakeholder actions are more effective. This may also contribute to the success of the project.

Project risk control (as with project control in general) has its origin in the positivist tradition, where the world around us is assumed to be objective (i.e. factual, rather than opinionated) and can be explained by causal relationships (Williams, 2005; Cicmil, Williams, Thomas & Hodgson, 2006). The project risk control process assumes that stakeholders act as one actor. This one actor influences the world, is fully informed and behaves rationally when making decisions aimed at service delivery. By taking the right actions following the decisions, also known as instrumental action, risk control is accordingly able to influence service delivery.

2.5 Project Resource Control and Service Delivery

Project resource control is an area of increasing focus as many organizations realize that to adequately handle all project demands, they must have a way to plan the portfolio realistically and to optimize resource utilization (Lewis, 2002). The objectives of resources management include planning the portfolio more accurately by balancing resource supply and demand, predicting and planning for future resource requirements, increasing utilization of

resources for higher value work, improving resource planning accuracy, increasing efficiencies in resource management functions and reducing project budget and schedule deviations resulting from poor resource management (Baars, 2006).

According to Cicmil et al. (2006), one of the most important and most challenging jobs of a project manager is to effectually and efficiently organize all the resources involved in a project. It goes without saying that the complexity of this task will depend heavily on the scope and nature of the project at hand. However, in all cases, it is a critical factor behind service delivery. At any given time, a project manager must know how to effectively juggle numerous project resources.

The project manager must maintain control over all resources used in a project (Baars, 2006). Although non-financial resources may be controlled easily, human resources may be more difficult to manage. Resource control is the process of comparing actual performance to the resource plans to determine variances, evaluate possible alternatives, and take the appropriate action.

A core requirement in resource management is to be able to define resource supply so that it can be balanced against resource demand (Lewis, 2002). Demand comes in many forms from many places, and with multiple levels of granularity (granularity means the extent to which a system is broken down into small parts). For most organizations, project resource control is a key challenge and balancing supply versus demand is vitally important. Having insight into the project resources and current allocations will gives project managers and project teams the agility needed to make informed trade-offs as change impacts the project.

It is important to be clear that ultimate responsibility for project finance, supply chain and human resource management rests with the project manager. This is true even though the project manager may not have direct line management responsibility for finance, supply chain and staff. It is the project manager's job to make sure that project finances are well managed; that goods, services and materials are managed effectively and efficiently; and that project staff have all skills necessary to achieve success.

Olsson (2007) observed that some organizations usually rely on individual or organizational donors to fund programs and they expect donations to be well managed. Such organizations also have an obligation to the communities and partners they serve, being responsible to ensure that resources obtained on their behalf are used in an optimal manner in order to maximize impact.

2.5.1 Project non-financial resource control and service delivery

Project financial control, the planning, organizing and controlling of the financial status of a project compatible with owner's requirements, is becoming more and more important in project control processes (Nguyen, 2009). Financial control systems are implemented in a project to keep the services costs as reasonable as possible within the project budget and assist project management in improving service delivery. Financial control is required through all stages of project development for planning and controlling resources and tasks. According to Evans (2005), the manager must know how to create and stick to a budget so that funds are allocated where they are needed.

To exercise prudent financial management of the project, the project manager will need to develop skills in these three areas: developing budgets, identifying cost estimates and monitoring budgets and expenditures (Flyvbjerg, Skamris, & Buhl, 2003). It is the practical

reality of most projects that a manager will not be given full control over all financial processes. To be successful, a project manager will need to collaborate and coordinate closely with a finance manager plus an array of other people in all steps of the finance management process (Lewis, 2002). Nonetheless, even though there will be elements of financial management where the manager lacks full authority and control over processes, the project manager is still accountable. According to Nassar, Nassar and Hegab (2005), these six areas of coordination and collaboration in finance are especially critical: accessing historical data for financial reports, explaining budget variances, issuing checks, authorizing expenditures, managing cash balances and implementing purchasing policies.

As discussed previously, the mandate of the project manager is to assume responsibility for ensuring overall success of the project (Modesto & Tichapondwa, 2010). In the case of the financial elements, a project manager must ensure that roles and responsibilities of all individuals involved in financial processes are clear and that individuals are living up to their commitments (Lyneis, Cooper & Els, 2001).

Developing budgets for the project is crucial to the service delivery in that poor budgeting can lead to poor service delivery (Lyneis & Ford, 2007). A budget is a description of the project's financial plan that includes a list of project cost estimates. As is the case for all components of the project plan, the key to accurate budgets is assuring that they are comprehensive and detailed. If a project manager is able to develop a complete (both comprehensive and decomposed) list of activities along with cost estimates for activities, then a budget will prove accurate.

Regardless of the project or the format of the project budget, a financial plan is only as good as the estimates upon which it is based (Matta & Ashkenas, 2003). To an extent, there is

always going to be risk associated with project estimates. Estimating will never be a precise science that produces 100% accurate results. Project managers cannot predict the future (Modesto & Tichapondwa, 2010). There will always be project variables that will lie outside the control of the project team and yet, while there are abundant reasons why making accurate estimates is a challenge, estimates can be sufficiently accurate to support good project decisions.

Another non-financial resource aspect that affects service delivery is managing the supply chain. Delays caused by faulty supply line management lead to not just loss of project control, but also to the loss of reputation and beneficiary satisfaction (Reichelt & Lyneis, 1999). These are priceless assets, which are almost impossible to recoup once lost. What is more, due to the critical nature of the services organizations provide, shortcomings and oversights can result in serious consequences for the beneficiaries that could literally mean dissatisfaction with the project outcomes (Baars, 2006).

In addition, supply chain management can account for a significant percentage of a project budget (Baars, 2006). This is why it is important for project supply to be managed as efficiently and effectively as possible. It is likely that the project manager will not hold line management responsibility for the supply chain function. There may be a team of logisticians who provide procurement and logistics support to a range of projects. Despite this, the project manager is responsible for making sure that the project has access to the right goods and services at the right time and, as a result, needs to collaborate and coordinate closely with the supply chain support function to ensure project success.

Procurement includes the complete process of obtaining goods and services from preparation and processing of a requisition through to receipt and approval of the invoice for payment

(Lewis, 2002). The project manager may be responsible for the actual procurement of the services or products needed to develop and implement the project, or may be directing these activities through a contracting or procurement team leader. Regardless of the precise role and responsibility of the project manager, these procurement activities may have a significant impact on the project budget and schedule, so they must be integrated into the overall project plan, budget and schedule (Modesto & Tichapondwa, 2010).

Depending on the project, inventory can represent a large cost of the total project value (Baars, 2006). This value is made up of the cost of the inventory itself, plus the cost of transporting the goods, cost of managing the goods (labor, packaging, to mention some) and keeping the goods in warehouses. The project team needs to establish an inventory management that ensures that stock is available to meet the needs of the project as and when required. To this end, the project manager must coordinate with the team members directly responsible for inventory management, constantly connecting the inventory requirements to the changing needs and priorities of the project. As part of this challenge, the project must establish a balance between supply and demand by establishing minimum holding stocks to cover lead-times (Lewis, 2002). As the project team establishes this balance, the project manager must ensure that appropriate policies are in place to establish the standards and controls for managing all elements of inventory control and warehousing.

2.5.2 Project financial resource control and service delivery

Human resource management is both an art and a science. The art of human resources management depends on the interpersonal and leadership skills of the project manager (Reichelt & Lyneis, 1999). Can the project manager motivate stakeholders? Inspire confidence? Manage conflict? Build team morale? The science of human resources management depends on effective planning. Human resources planning is an integral element

of a comprehensive project implementation plan. The project's human resource management plan identifies the activities and resources required to manage the project team (Modesto & Tichapondwa, 2010).

The manager must effectively organize workers and project personnel so that the right people are assigned appropriate tasks (Taylor & Ford, 2006). In addition, it is necessary to have an effective deployment and flow of services, supplies and inventory so that the project has access to what it needs, when and where it needs it and at the most appropriate price.

Effective and fluid communications with support services is vital for project success (Baars, 2006). It is often stated "project management is too important to leave to the project staff alone". Support staff members have critical skills and experience. They need to be engaged in the project as early as possible. Failure to involve them will usually result in inaccurate and/or incomplete planning and, as a result, poor project implementation and delivery (Lewis, 2002).

Many of the activities involved in managing the project team (implementing the project staffing plan, acquiring staff, identifying staff assignments, documenting organizational charts) are technical in nature - often described as the 'science' of managing the project team (Modesto & Tichapondwa, 2010). The skills, attitudes and behaviors required to promote a highly productive team environment, however, depend on the project manager's ability to move beyond the 'science' of project management and engage in the 'art' of the discipline. In order to promote a highly productive team environment, the project manager must be skilled in communicating vision, encouraging shared ownership, moving agendas within and outside the organization, and managing situations where there is no direct hierarchical authority.

2.6 Summary of Literature Review

This chapter reviews academic work on the theory that was adopted to guide this study. The theory was Theory of Constraints. The assumptions, relevancy and application including the shortcomings of the theory were highlighted in the review. In addition, literature related to the objectives of this study was reviewed. The literature explains how project quality control, project risk management and project resource control can affect service delivery basing on various academicians' views and arguments. In addition, empirical evidence was provided in the literature based on studies conducted earlier on. Furthermore, other authors gave views and evidence in which project quality control, project risk management and project resource control do not significantly affect service delivery. However, the literature review was not in the context in which this study was conducted. Moreover, some of the literature indicated a positive relationship between the variables of this study while others indicated no relationship and the strength of the effect of independent variables on the dependent variables varied in the literature reviewed. Thus, this study sought to establish the exactly effect of the independent variables on the dependent variable in MCP. The literature therefore, only acted as a guide on what should be looked for in conducting this study in MCP. It is only when this study was conducted that it was possible to know what was exactly happening in such a setting.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the approaches the researcher will use to gain information on the research problem. It includes the research design, study population, sample size, sampling techniques, procedure, data collection methods and instruments, procedure of data collection, data analysis and measurement of variables.

3.2 Research design

A case study design and cross-sectional survey was used. Yin (1984) defines the case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context. A case study focuses on only one specific instance of the phenomenon to be studied or on only a handful of instances in order to study a phenomenon in depth. In the case study, the researcher is inclined for example to study some riots, or some young people, or some traffic accidents, or only a handful of schools by probing into the details of the process (i.e. the phenomenon) of interested. Each instance is studied in its own specific context, and in detail than in extensive research. Thus, applied in the context of this study, the case study design was used because in this study not all public health projects but only one, that is MCP, was studied. In additional, only one district (Kabale District) was used instead of all districts in Uganda or Western Uganda. On the other hand, cross-sectional research is a research method in which a researcher utilizes different groups of people who differ in the variable of interest, but share other characteristics such as socioeconomic status, educational background, and ethnicity (Amin, 2005). The cross-sectional survey was used in this study because it enabled to target a large group of respondents to obtain information without making a follow up of the respondents once information from them is obtained (Sekaran, 2003). Therefore, this survey helped to save on time and resources during data collection.

Both quantitative and qualitative methods were used in the study. Quantitative methods are an objective approach to data collection used to quantify the problem by way of generating numerical data or data that can be transformed into useable statistics while qualitative methods are a subjective approach, data collected is expressed in text or symbols (Amin, 2005). In this study, the quantitative approach was used because it allowed the researcher to solicit more information that was quantified while the qualitative approach was used because it allowed the researcher to solicit in-depth information that was expressed in textual format (Mugenda & Mugenda, 1999). Combining numerical and textual information helped the researcher enrich the interpretation of findings of the study (Mugenda & Mugenda, 1999).

3.3 Study Population

The study population composed of all staff responsible for the implementation of the MCP in Kabale District. These included nine staff in managerial positions and 117 staff in non-managerial positions of the MCP in Kabale District (Human Resource Department Ministry of Health, 2012).

3.4 Determination of the Sample Size

Using Krejcie & Morgan sample size table, the following sample size of staff responsible for the implementation of the MCP activities in Kabala District was used as seen below.

Table 1: Sample size and techniques for collection

Category	Population	Sample	Sample Technique
Staff in managerial positions	9	9	Purposive sampling
Staff in non-managerial positions	117	90	Simple random sampling
Total	126	99	

Source: researcher's construct using Human Resource Department Ministry of Health (2012) and guided by Krejcie and Morgan (1970) sampling method

The selected sample size staff responsible for the implementation of the MCP in Kabale District covered two categories of respondents. These categories included staff in managerial positions and other staff in non-managerial positions of the MCP in Kabale District. This study targeted a sample of 99 respondents as computed in the table above.

3.5 Sampling Techniques and Procedure

Simple random sampling method was used to give an equal chance of staff in non-managerial positions of the MCP in Kabale District to be selected given that number was big and not all staff in non-managerial positions were selected. Purposive sampling was used to select staff in managerial positions. This was because these staff members held responsibility that one expected have more knowledge about the running of the MCP including issues as regards to project control systems and public health service delivery of public health project.

3.6 Data Collection Methods

3.6.1 Questionnaire survey

A questionnaire survey research method was used for collecting information from a selected group of staff in non-managerial positions of the MCP in Kabale District using standardized questionnaires. This method involved collecting information from this category of respondents where respondents had to provide information to a set of similar close-ended

questions. Questionnaire survey was used for these category of respondents to save on time because their number was big to interview.

3.6.2 Face-to-face interview

Onen and Oso (2008) stated that face-to-face interviews help the researcher to collect textual information. Face-to-face interviews were used to collect data from staff in managerial positions of the MCP in Kabale District. It enabled the researcher to establish rapport with these categories of respondents and therefore gain their cooperation. It also allowed the researcher to clarify ambiguous answers and obtain in-depth information through probing. Semi structured-interviews were designed to collect data for this study. Open-ended questions were used so that other valuable questions emerged from the dialogue between interviewer and interviewee. Semi-structured interviews are the most widely used interviewing formats for qualitative research (DiCicco-Bloom & Crabtree, 2006). In this study, the probing interviewing tactic was used extensively to obtain a deeper explanation of the issue at hand from the respondents of the MCP in Kabale District. This was largely due to the fact that the respondents often needed stimuli to expand or clarify their own answers and ideas more broadly, so that a broader understanding was more easily reached later on in the findings of this study.

3.6.3 Documentary Review

Secondary data was obtained from MCP resource centre and records at the Ministry of Health, which was mainly used to provide documented evidence about the role of the MCP, malaria in Kabale district prevalence and consequences, activities of the MCP related to malaria control and service delivery of the MCP. All these were captured in the contextual background and statement of the problem in this study. Sources like journals, articles, reports and books were used in gathering and compiling the information.

3.7 Data collection instruments

Two types of data collection instruments were used in the study. These included questionnaires and interview guides, which are briefly explained in the following subsection.

3.7.1 Questionnaires

As shown in Appendix 2, structured self-administered questionnaires (SAQs) were used to collect quantitative data focusing on project quality control, project risk management, project resource control and health service delivery from the staff in non-managerial positions of the MCP in Kabale District. SAQs were used for this category of respondents to save on time because their number was too big to be interviewed and because they could read and write in English and thus fill in the questionnaires by themselves without any assistance. All questions in the SAQs were close-ended. The structure of the SAQs was divided in five sections. Section A comprised of questions about respondents' background. Section B comprised of questions about project quality control accompanied with a five response scale from strongly disagree to strongly agree. Section C comprised of questions about project risk management accompanied with a five response scale from strongly disagree to strongly agree. Section D of comprised questions about project resource control accompanied with a five response scale from strongly disagree to strongly agree. Section E comprised of questions about health service delivery accompanied with a five response scale from strongly disagree to strongly agree.

3.7.2 Interview guide

As shown in Appendix 3, semi structured interview guides were used to collect qualitative data from staff in managerial positions of the MCP in Kabale District who were in position to provide in-depth information through probing during the face-to-face interview. The

collected data focused on project quality control, project risk management, project resource control and health service delivery. The interview guide contained six questions, which were open-ended. The researcher presented questions to the interviewees of the MCP in Kabale District and their views were written down by the researcher. Data obtained during the interview supplemented that obtained through the questionnaire.

3.7.3 Documentary analysis guides

This involved a list of expected articles, annual reports, journals publications, services brochures and magazines with information pertaining to this study. This list was presented to MCP officials to help search for the documents.

3.8 Validity and Reliability

3.8.1 Validity

Validity is the ability to produce findings that are in agreement with theoretical or conceptual values; in other words to measure what is supposed to be measured (Amin, 2005). Validity in this study was determined to finding out whether the instruments would obtain the intended information about MCP' project control systems and health service delivery from the respondents. That is if all or most of the respondents gave similar responses. This helped to determine the legitimacy of the information obtained from the field. For the instruments to yield relevant and correct data, they were given to two lecturers conversant with the study area to comment on the content, ambiguity, difficult and relevancy of questions to ensure content, construct and face validity. The rating of relevancy of questions was then used to calculate the Content Validity Index (CVI) using the formula below.

$$CVI = \frac{\text{Item rated relevant by both rates}}{\text{Total number of items in the questionnaire.}}$$

The following table presents the ratings used to calculate the CVI.

Table 2: Content validity index results

	Relevant	**Not relevant**	**Total**
Rater 1	40	8	48
Rater 2	38	10	48
Total	78	18	96

Thus, CVI = $\frac{78}{96} \approx .813$

The CVI was found to be .813, which was greater than the recommended .70 (Nunnally as cited in Kent, 2001). Thus, this implied that the questionnaire was valid for data collection.

3.8.2 Reliability

According to Mugenda and Mugenda (1999), reliability refers to the measure of the degree to which a research instrument yields consistent results or data after repeated trials. In this study, reliability concerns the consistency among the questions on each variable. All the questions related to each variable were expected to have all the answers to be consistent. In order to ensure the degree to which questionnaires produced consistent results if used under the same conditions, they were pilot tested on 20 respondents and the results subjected to Cronbach alpha reliability. The questionnaires were given to 20 respondents to fill in and were collected for analysis. Raw data from these questionnaires were entered into a statistical program known as the Statistical Package for Social Scientists (SPSS). Using this program, the internal consistence (reliability) of the instrument was measured using Cronbach's Alpha coefficients for each variable, which were compared to a recommended Alpha coefficient by Nunnally (as cited in Kent, 2001) which was .70 or above. Findings are shown in Table 3.

Table 3: Reliability results

Variable	Total No of items	Alpha
Project quality control	14	.709
Project risk management	11	.802
Project resource control	14	.761
Health service delivery	9	.784

Source: Primary data

Table 3 shows that project quality control yielded Cronbach's Alpha value of .709, project risk management yielded Cronbach's Alpha value of .802, while project resource control yielded Cronbach's alpha value of .761. Finally, health service delivery yielded Cronbach's Alpha of .784. Since the results were higher than the value of .7, the questionnaire was deemed to have excellent stability and consistency.

3.9 Procedure of data Collection

A letter of authorization from the UMI was provided to authorities at of the MCP in Kabale District as a request for permission to conduct the study. A covering letter accompanied the data collection instruments explaining the purpose of the study. Once permission to conduct the study was given, the questionnaires were distributed directly to the staff in non-managerial positions of the MCP in Kabale District for filling and were collected once they were completed. The cover letter was also used to provide access to the interview processes, which were done on appointment with managers of the MCP in Kabale District. The data collected using the questionnaires and interview guides was analyzed.

3.10 Data Analysis

3.10.1 Quantitative data analysis

Quantitative data analysis mainly consisted of descriptive statistics (frequencies and percentages) and inferential statistics (Spearman correlation and regression). The frequencies and percentages were used to determine the respondents' views on project control system and health service delivery. Spearman correlation (rho) and coefficient of determination (rho^2)

were used to test the hypotheses. The correlation coefficient (rho) was used to determine the strength of the relationship between the variables because the scale (that is strongly disagree, disagree, not sure, agree and strongly agree) that accompanied the questionnaire was ordinal. The responses were merely arranged in order whereby one could not exactly determine how much one disagreed or agreed and as such adding or subtracting the responses such as strongly disagree from disagree does not make sense. It is recommended that with an ordinal scale, Spearman rank order correlation is suitable for determining relationships because it does not involve means and standard deviations, which are meaningless with ordinal data. The sign of the correlation coefficient (+ or -) was used to determine the nature of relationship. The coefficient of determination ((rho^2) was used to determine percentage changed caused by the independent variables on the dependent variable in this study. The significance of the correlation coefficient (p) was used to determine the statistical significance and confidence in the findings. The regression beta values (β) were used to determine whether the indicators of each of the independent variable significantly affected health service delivery of the MCP in Kabale District. This was then be squared and adjusted to determine how much variance is in the dimension dependent variable caused by the independent variables.

3.10.2 Qualitative data analysis

This involved content analysis, which was used to edit qualitative data and reorganize it into meaningful shorter sentences. In other word, a thematic approach was used to analyze qualitative data where themes, categories and patterns were identified. The recurrent themes, which emerged in relation to each guiding question from the interviews were presented in the results, with selected direct quotations from interviewees presented as illustrations.

3.11 Measurement of variables

Items for each variable were developed in the questionnaire accompanied with an ordinal measurement, which categorizes and ranks the variables. Thus, a Likert scale was used to collect opinion data on the study variables using the five scales: 5 = strongly agree; 4 = agree; 3 = undecided; 2 = disagree; 1 = strongly disagree.

3.12 Ethical Consideration

The principles of research ethics - informed consent, privacy and confidentiality, and accuracy were adhered to during the study. Participants received full disclosure of the nature of the study, the risks, benefits and alternatives, with an extended opportunity to ask pertinent questions regarding the research. The researcher treated all information provided by participants with maximum confidentiality. This was achieved by assigning respondents codes instead of using the actual names of the respondents, which were known to other people. Honesty was maintained throughout the research process; in reporting data, results, methods and procedures in order to avoid fabrication, falsification, or misrepresentation of data. All quotations used and sources consulted were clearly distinguished and acknowledged by means of references. A letter of authorization from the department of higher degrees was provided as a request for permission to conduct the study. A covering letter accompanied the research instruments explaining the purpose of the study and the questionnaires were distributed directly to the respondents in their respective areas for filling and were collected immediately the filling in was completed. The cover letter was also used to provide access to the interview process, which were done on appointment.

3.13 Limitations

The major limitation of this study was reluctance of the concerned participants to avail data to facilitate obtaining primary data about project control systems and public health service

delivery. Some respondents did not provide the information by not filling in the questionnaires. Therefore, to overcome this, the researcher assured the respondents that the information given was to be treated with maximum confidentiality and is for academic purposes only.

3.14 Summary

This chapter explained what was used to collect reliable and valid data including the analysis of the data. The following chapter focuses on the presentation, analysis and interpretation of the data according to the objectives of the study, conceptual framework and the research instruments used.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

This chapter presents, analyzes and interprets the results. It is divided into five major sections. The first section presents results about the response rate. The second section presents results on respondents' background information. The third section presents results on project quality control and health service delivery. The fourth section presents results on project risk management and health service delivery. The fifth section presents results on project resource project resource control and health service delivery.

4.2 Response Rate

Response rates are generally considered the most widely compared statistic for judging the quality of results obtained from the field (Biemer & Lyberg, 2003). A response rate is a standard measure of how successfully (potential) interviewees were motivated to participate in a given study. It is usually defined as the number of units in the net sample (NS) divided by the number of units in the gross sample (GS) expressed in the form of a percentage. High research response rates help to ensure that research results are representative of the target population. In this study, the sample was 99 respondents of the MCP in Kabale District but the study managed to get 84 respondents of the MCP in Kabale District. The break down is shown in Table 7.

Table 4: Response rate

Respondents	Sampled size	Responses received	Percentage %
Staff in managerial positions	9	6	67
Staff in non-managerial positions	90	78	87
Total	99	84	85

Source: Data from respondents

Thus, the total response rate was 85%. According to Amin (2005), a 67% response is acceptable. Thus, with a 85% response rate in this study, the results were considered representative of what would have been obtained from the population.

4.3 Background Findings

Staff in non-managerial positions of the MCP in Kabale District were asked about background. Findings are presented in the following subsections.

4.3.1 Gender of staff in non-managerial positions of the MCP in Kabale District

Staff in non-managerial positions of the MCP in Kabale District were asked about their gender. Findings are presented in Table 5.

Table 5: Distribution of staff in non-managerial positions of the MCP in Kabale District by gender

Gender	Frequency	Percent
Male	53	67.9
Female	25	32.1
Total	78	100.0

Source: Data from respondents

Findings show that more male respondents (67.9%) participated in the study compared to the proportion of female respondents of the MCP staff . Thus, the implication of these findings is that information about project quality control, project risk management, project resource project resource control and health service delivery by the MCP in Kabale district was obtained from a sample that reflected distribution of people by gender engaged in MCP activities.

4.3.2 Level of education of staff in non-managerial positions of the MCP in Kabale District

Staff in non-managerial positions of the MCP in Kabale District were asked about the level of their education. Findings are presented in Table 6.

Table 6: Distribution of staff in non-managerial positions of the MCP in Kabale District by education level

Highest qualification	Frequency	Percent
Primary	0	0
O-Level	3	3.8
A-Level	11	14.1
Tertiary	16	20.5
University	48	61.5
Total	78	100.0

Source: Data from respondents

Findings show that more respondents of the MCP staff in Kabale district (96.2%) who participated in the study had at least an A' level of education. In addition, most of the participants in this study had an education. Therefore, the education background of the respondents indicates that they ably responded to the questions about project quality control, project risk management, project resource project resource control and health service delivery because it is expected that they understood issues that they were asked. Thus, information obtained was reliable.

4.3.3 Length of period of staff in non-managerial positions of the MCP in Kabale District working with the MCP

Staff in non-managerial positions of the MCP in Kabale District were asked about their length of period they had worked with the MCP. Findings are presented in Table 7.

Table 7: Distribution of staff in non-managerial positions of the MCP in Kabale District by tenure

Tenure	Frequency	Percent
Less than 1 year	8	10.3
1-2 years	3	3.8
3-5 years	28	35.9
5-10 years	19	24.4
Above 10 years	20	25.6
Total	78	100.0

Source: Data from respondents

Findings show that most respondents of the MCP staff in Kabale district (over 89.7%) who participated in the study had worked with the MCP for at least 1 year. This indicates that most of the respondents in the district had been around for quite some time to learn about what happens at the organization including issues about project quality control, project risk management, project resource project resource control and health service delivery the study sought to obtain. Therefore, the staff in non-managerial positions of the MCP in Kabale District who participated in this study provided dependable information about the project quality control, project risk management, project resource project resource control and health service delivery.

4.3.4 Age of staff in non-managerial positions of the MCP in Kabale District

Staff in non-managerial positions of the MCP in Kabale District were asked about their age. Findings are presented in Table 8.

Table 8: Distribution of staff in non-managerial positions of the MCP in Kabale District by age

Age	Frequency	Percent
20-30 years	27	34.6
31-39 years	27	34.6
40-49 years	12	15.4
50 years and above	12	15.4
Total	78	100.0

Source: Data from respondents

Findings show that nearly three-quarters of the respondents the District (65.4%) who participated in the study were aged above 30 years. Thus, the implication of these findings is that information about the project quality control, project risk management, project resource project resource control and health service delivery was obtained from respondents of the MCP staff in Kabale district who were mature. The assumption is that information obtained was dependable.

4.4 Project quality control and Health Service Delivery

Before determining the effect of project quality control on health service delivery, descriptive statistics for each variable are presented to show the respondents views on each of the variables. This way they helped to state in exact terms what the inferential statistics meant. Thus, this approach was adopted for every objective and the descriptive statistics that were used were frequencies and percentages because the scale that accompanied the questionnaire was ordinal.

4.4.1 Descriptive results about project quality control

Staff in non-managerial positions of the MCP in Kabale District were requested to respond to 14 items about project quality control by indicating their agreement using a five-point Likert scale as shown in Table 9. The items are presented in the first column of Table 9 and the proportion of respondents to the responses on each of the items is presented in form of frequencies and percentages in columns 2 to 6. The last column presents the total percentage of respondents on each of the items. The analysis and interpretation of the findings about project quality control follows the presentation of findings in Table 9.

Table 9: Findings about project quality control of the MCP in Kabale District

Items about project quality definition	SD	D	NS	A	SA	Total
1. Quality standards are always identified to govern the MCP execution of its activities	7 (9%)	27 (35%)	5 (6%)	27 (35%)	12 (15%)	78 (100%)
2. The local community is consulted about quality standards that govern the MCP execution of its activities	17 (22%)	37 (47%)	3 (4%)	12 (15%)	9 (12%)	78 (100%)
3. The donors are consulted about quality standards that govern the MCP execution of its activities	18 (23%)	33 (43%)	1 (1%)	15 (19%)	11 (14%)	78 (100%)
4. The MCP employees are consulted about quality standards that govern the MCP execution of its activities	21 (27%)	23 (29%)	6 (8%)	17 (22%)	11 (14%)	78 (100%)
5. The MCP services/products are appropriate to the beneficiaries needs	23 (29%)	35 (45%)	7 (9%)	11 (14%)	2 (3%)	78 (100%)
6. The MCP services/products are reliable to the beneficiaries	24 (31%)	38 (48%)	6 (8%)	6 (8%)	4 (5%)	78 (100%)
7. The MCP services/products are timely to the beneficiaries	19 (24%)	25 (31%)	2 (3%)	16 (21%)	16 (21%)	78 (100%)
8. The MCP services/products are suitable to the beneficiaries	20 (26%)	27 (34%)	5 (6%)	13 (17%)	13 (17%)	78 (100%)
Items about project quality assurance	**SD**	**D**	**NS**	**A**	**SA**	**Total**
9. Evaluations are conducted to provide evidence that MCP quality-related activities are being performed effectively	13 (17%)	31 (39%)	4 (5%)	16 (21%)	14 (18%)	78 (100%)
10. Donors are provided evidence that MCP quality-related activities are being performed effectively	16 (21%)	28 (36%)	3 (4%)	19 (24%)	12 (15%)	78 (100%)
11. The local community is provided evidence that MCP quality-related activities are being performed effectively	14 (18%)	32 (41%)	4 (5%)	13 (17%)	15 (19%)	78 (100%)
12. MCP employees are provided evidence that MCP quality-related activities are being performed effectively	19 (24%)	26 (33%)	7 (9%)	10 (13%)	16 (21%)	78 (100%)
13. Safeguards are in place to make sure that the expected levels of quality in MCP activities will produce quality outputs	22 (28%)	36 (47%)	4 (5%)	12 (15%)	4 (5%)	78 (100%)
14. Corrective action is taken to make sure that the expected levels of quality in MCP activities will produce quality outputs	20 (26%)	35 (44%)	6 (8%)	10 (13%)	7 (9%)	78 (100%)

Source: Data from respondents

Key: SD = Strongly disagree, D = Disagree, NS = Not sure, A = Agree, SA = Strongly agree

To analyze the findings, for each item, strongly disagreed and disagreed were added together into one category called “respondents who opposed the items” and strongly agreed and agreed were also added into another category called “respondents who concurred to the items”. Thus, three categories of respondents were compared, which included “respondents who opposed the items”, “respondents who were not sure about the items” and “respondents who concurred to the items”. Interpretation was then drawn from the comparisons of the three categories as shown in the following paragraph.

Findings show fewer staff in non-managerial positions of the MCP in Kabale District opposed one item about product quality definition (that is item 1) compared staff in non-managerial positions of the MCP in Kabale District who concurred with item 1 while a small percentage were not sure about this item. A comparison on this item shows that the percentages of respondents that opposed was 44% while the percentages of respondents that were not sure ranged was 6% and the percentages of respondents that concurred was 50%. From these comparisons, it can be seen that the percentages that opposed the items were lower compared to the percentages that concurred while the percentages that were not sure was small. Thus, from this analysis, the following is the interpretation. Findings show that quality standards were always identified to govern the MCP execution of its activities.

However, findings show more staff in non-managerial positions of the MCP in Kabale District opposed seven items about product quality definition (that is items 2 to 8) compared staff in non-managerial positions of the MCP in Kabale District who concurred with these items while a small percentage were not sure about these items. A comparison on items 2 to 8 shows that the percentages of respondents that opposed ranged from 55% to 79% while the percentages of respondents that were not sure ranged from 1% to 9% and the percentages of respondents that concurred ranged from 13% to 42%. From these comparisons, it can be seen that the percentages that opposed the items were higher compared to and the percentages not sure and the percentages that concurred. Thus, from this analysis, the following is the interpretation. Findings show that the local community, donors and MCP employees were not consulted about quality standards that govern the MCP execution of its activities and that the MCP services/products were not appropriate, reliable, and suitable to the beneficiaries. Thus, these findings show that product quality definition by MCP was poor.

In addition, findings show that more staff in non-managerial positions of the MCP in Kabale District opposed all six items about project quality assurance (that is items 9 to 14) compared

staff in non-managerial positions of the MCP in Kabale District who concurred with these items while a small percentage were not sure about these items. A comparison on items 9 to 14 shows that the percentages of respondents that opposed ranged from 56% to 75% while the percentages of respondents that were not sure ranged from 4% to 9% and the percentages of respondents that concurred ranged from 20% to 39%. From these comparisons, it can be seen that the percentages that opposed the items were higher compared to and the percentages not sure and the percentages that concurred. Thus, from this analysis, the following is the interpretation. Findings show that evaluations were not conducted to provide evidence that MCP quality-related activities were being performed effectively and donors, the local community and MCP employees were not provided evidence that MCP quality-related activities were being performed. In addition, findings show that safeguards were not in place to make sure that the expected levels of quality in MCP activities would produce quality outputs and corrective action was not taken to make sure that the expected levels of quality in MCP activities would produce quality outputs. Thus, these findings show that resource project quality assurance was poor.

Interview findings shed more light about project quality control. For example, when key informant A from the MCP in Kabale district was asked on the issues related to satisfaction with project control, the response was,

> I am satisfied with the project quality control because currently quality assurance programs are largely run and take various forms. The major one is mainly support supervision. However, there are also policies and several non-government organizations that deal with the issue project quality control. There are national supervision guidelines, which are supposed to ensure the efficacy of quality assurance programs in the MCP. The monitoring teams are required to visit each district on a quarterly basis to provide support supervision and monitoring MCP services (Interview with key informant A, 6th October 2014).

The findings from the interviews that quality assurance was always conducted through supervision concurs with findings obtained from the questions where some staff in non-managerial position were of the view that, evaluations were conducted to provide evidence that MCP quality-related activities were being performed effectively. However, this interview findings was contrary to those staff in non-managerial position whose response was negative. Similarly, key informant B from the MCP in Kabale district had this to say, "International donors play a large role in financing MCP projects. Therefore, they implement their own programs to improve upon quality assurance for the MCP projects (Interview with key informant B, 7th October 2014)".

This finding is similar to that obtained from staff in non managerial position using questionnaires who were of the view that donors provided evidence that MCP quality-related activities were being performed effectively but contrary to staff in non managerial position who disagreed or strongly disagreed. From the interview findings, it has been shown that efforts have been adopted to ensure project quality control for the MCP. These efforts are at the national level, the organizational level, and by some stakeholders such as non-government organizations. The interview findings show that project quality control was mainly in form of policies and supervision. However, despite the positive response from the two key informants, challenges to the MCP project quality control were cited during the interviews. For example, it was revealed during the interviews,

> Some monitoring teams are not able to cover all the MCP activities due to two reasons. Firstly, these are widely scattered and secondly funding is not adequate to cover all MCP activities in Kabale District (Interview with key informant C, 8th October 2014)".

Hence, the monitoring teams found difficulties in covering all MCP activities within the district. An average travel time for a monitoring trip within Kabale district ranged between 1-

4 hours. Normally, the district laboratory monitoring teams used motor bikes for visiting the MCP activities, except in some situations where public transport was preferred for far off activities. Key informant F had this to say in respect:

> Some activities within the district are far with poor roads, which requires the motoring team to use 1-4 hours. It is very difficult to go by motor bike, so monitoring teams travel by public means. For some areas, it is not possible for monitoring teams to return on the same day and they have to spend a night there (Interview with key informant F, 15th October 2014)

The involvement of District Malaria Focal Person (DLS) in the MCP in Kabale district, as an administrative supervisor of the MCP in, was found helpful in monitoring teams, field activities and external quality assurance of the MCP activities in Kabale district. "The DLS has followed the external quality assurance guidelines to maintain records and cross-check MCP activities (Interview with key informant D, 13th October 2014)". However, human resource and logistic challenges were faced to arrange regular visits of the monitoring teams within the district. "Difficulties in making travel and accommodation arrangements limit the monitoring teams' opportunity to supervise the quality assurance of MCP within the districts. Furthermore, guidelines and tools for conducting the district supervisory visit need more attention (Interview with key informant E, 14th October 2014)".

These findings generally show that project quality control at MCP in Kabale district was not well handled despite efforts to ensure quality in MCP. This is because most the employees held a negative view to all items about project quality control. Poor project quality control can contribute to poor health service delivery. This will be proved after testing the second hypothesis.

4.4.2 Descriptive results about health service delivery

Staff in non-managerial positions of the MCP in Kabale District responded to five items about health service delivery by indicating their agreement using a five-point Likert scale. Findings are presented in Table 9. The analysis and interpretation of the findings follows the presentation of findings.

Table 10: Findings about health service delivery of the MCP in Kabale District

Items about health service delivery	SD	D	NS	A	SA	Total
1. There have been no complaints about mosquito net delivery to the beneficiary	10 (13%)	31 (40%)	6 (8%)	12 (15%)	19 (24%)	78 (100%)
2. The number of mosquito nets delivered to the beneficiary has been increasing	15 (19%)	32 (42%)	5 (6%)	19 (24%)	7 (9%)	78 (100%)
3. The number of people who received mosquito nets has been increasing	11 (14%)	28 (36%)	3 (4%)	17 (22%)	19 (24%)	78 (100%)
4. There have been no complaints about malaria drug delivery to the beneficiary	11 (14%)	36 (47%)	7 (9%)	12 (15%)	12 (15%)	78 (100%)
5. The quantity of drugs given to people has been increasing	23 (29%)	38 (49%)	4 (5%)	10 (13%)	3 (4%)	78 (100%)
6. The number of people who received drugs has been increasing	14 (18%)	45 (57%)	6 (8%)	4 (5%)	9 (12%)	78 (100%)
7. There have been no complaints about management of malaria	15 (19%)	29 (37%)	3 (4%)	16 (21%)	15 (19%)	78 (100%)
8. The cases of malaria treated has reduced	9 (12%)	43 (54%)	6 (8%)	11 (14%)	9 (12%)	78 (100%)
9. The prevalence of malaria has reduced	16 (21%)	24 (31%)	8 (10%)	26 (33%)	4 (5%)	78 (100%)

Source: Data from respondents
Key: SD = Strongly disagree, D = Disagree, NS = Not sure, A = Agree, SA = Strongly agree

Findings show that more staff in non-managerial positions of the MCP in Kabale District opposed all nine items about health service delivery (that is items 1 to 9) compared staff in non-managerial positions of the MCP in Kabale District who concurred with these items or who were not sure about these items. A comparison of these items shows that the percentages of respondents that opposed ranged from 50% to 78% while the percentages of respondents that were not sure ranged from 4% to 10% and the percentages of respondents that concurred ranged from 17% to 46%. From these comparisons, it can be seen that the percentages that opposed the items were higher compared to the percentages that were not sure and the percentages that concurred.

Thus, from this analysis, the following is the interpretation. Findings show that there have been complaints about mosquito net delivery to the beneficiary, the number of mosquito nets delivered to the beneficiary has not been increasing, the number of people who received mosquito nets has not been increasing and there have been complaints about malaria drug delivery to the beneficiary. In addition, findings show that the quantity of drugs given to people has not been increasing, the number of people who received drugs has not been increasing, there have been complaints about management of malaria, the cases of malaria treated has not reduced and the prevalence of malaria has not reduced. In general, these findings show that health service delivery of the MCP in Kabale district was poor.

4.4.3 Testing first hypothesis

The first hypothesis stated, "There is a positive significant effect of project quality control on public health service delivery by the Malaria Control Programme in Kabale District in Uganda". The Spearman Rank Order Correlation Coefficient (*rho*) was used to determine the strength of the relationship between project quality control and the health service delivery. The coefficient of determination was used to determine the effect of project quality control on the health service delivery. The significance of the coefficient (p) was used to test the hypothesis by comparing the coefficient to the critical significance level at .05. This procedure was applied in testing the other hypotheses. Table 11 presents the test results for the first hypothesis.

Table 11: Correlation between project quality control and health service delivery of the MCP in Kabale District

Dependent variable	Independent variable Project quality control
Health service delivery	*rho* = .560 rho^2 = .314 p = .000 n = 78

Source: Data from respondents

Findings show that there was a moderate positive significant correlation (*rho* = .560) between project quality control and health service delivery of the MCP in Kabale district. The coefficient of determination, which is a square of the correlation coefficient (rho^2 = .314), was also computed and expressed as a percentage to determine the change in health service delivery due to project quality control. Thus, findings show that project quality control accounted for 31.4% change in health service delivery of the MCP in Kabale district. These findings were subjected to a test of significance (p) and it is shown that the significance of the correlation (p = .000) is less than the recommended critical significance at .05. Thus, the effect was significant. Because of this, the hypothesis "There is a positive significant effect of project quality control on public health service delivery by the Malaria Control Programme in Kabale District in Uganda".

The implication of these findings is that the moderate effect implied that a change in project quality control contributed to a moderate change in health service delivery of the MCP in Kabale district. The positive nature of the effect implied that the change in project quality control and health service delivery was in the same direction whereby better project quality control contributed to better health service delivery of the MCP in Kabale district and poor project quality control contributed to poor health service delivery of the MCP in Kabale district.

A further analysis was conducted using a regression to determine the effect of the dimensions of project quality control (product quality definition and project quality assurance) on health service delivery of the MCP in Kabale district. Findings are presented in Table 12, accompanied with an analysis and interpretation.

Table 12: **Effect of dimensions of project quality control on health service delivery of the MCP in Kabale District**

Regression Statistics	
Multiple R	.614
R Square	.377
Adjusted R Square	.361
Standard Error	4.224
Observations	78

ANOVA

	df	SS	MS	F	Sig F
Regression	2	810.92	405.46	22.73	.000
Residual	75	1338.07	17.84		
Total	77	2148.99			

	Beta (B)	Standard Error	t Stat	P-value
Intercept	10.31	2.09	4.94	.000
Project quality definition	.20	.10	2.09	.040
Project quality assurance	.61	.15	4.13	.000

Source: Data from respondents

Findings in Table 12 show a strong linear relationship (Multiple R = .614) between the combined dimensions of project quality control (product quality definition and project quality assurance) and health service delivery of the MCP in Kabale district. Going by the adjusted R Square, it is shown that the combined dimensions of project quality control (product quality definition and project quality assurance) account for 36.1% change in health service delivery of the MCP in Kabale district. These findings were subjected to an ANOVA test, which showed that the significance (Sig F = .000) of the Fishers ratio (F = 22.73) was less than the critical significance at .05. Hence, it is concluded that the combined dimensions of project quality control (product quality definition and project quality assurance) affected health service delivery of the MCP in Kabale district.

The p-values of Beta (B) values show that both product quality definition and resource project quality control singularly had a significant effect on health service delivery of the MCP in Kabale district because the significant p-values (p-value = .040 and p-value = .000) were less than the critical significance at .05. However, project quality assurance more significantly effected health service delivery of the MCP in Kabale district compared to

resource project quality definition because it had a higher Beta-value (B = .61) compared to that of product quality definition (B = .20).

4.5 Project Risk Management and Health Service Delivery

Before testing the second hypothesis, descriptive results relating to project risk management were presented, analyzed and interpreted. Findings are presented in the following subsection.

4.5.1 Descriptive results about project risk management

Respondents of the MCP in Kabale district were requested to respond to 11 items about project risk management by indicating their agreement using a five-point Likert scale. Findings are presented in Table 13. The analysis and interpretation of the findings about project risk management follows the presentation of findings.

Table 13: Findings about project risk management of the MCP in Kabale District

Items about project risk assessment	**SD**	**D**	**NS**	**A**	**SA**	**Total**
1. The aims/objectives of risk management in MCP activities are defined	14 (18%)	21 (27%)	5 (6%)	26 (34%)	12 (15%)	78 (100%)
2. The scope of risk management in MCP activities are defined	11 (14%)	32 (41%)	4 (5%)	17 (22%)	14 (18%)	78 (100%)
3. The criteria for the treatment of risks are determined	10 (13%)	33 (42%)	4 (5%)	16 (21%)	15 (19%)	78 (100%)
4. The resources for the treatment of risks in MCP activities are determined	17 (22%)	29 (38%)	8 (10%)	12 (15%)	12 (15%)	78 (100%)
5. Risk analysis of MCP activities is done to determine the risk characteristics	16 (21%)	38 (49%)	8 (10%)	8 (10%)	8 (10%)	78 (100%)
6. Risk evaluation is done to decide how risks will be treated	13 (17%)	39 (50%)	8 (10%)	11 (14%)	7 (9%)	78 (100%)
Items about project risk control	**SD**	**D**	**NS**	**A**	**SA**	**Total**
7. The likelihood of risks occurring in MCP activities have been reduced	8 (10%)	23 (29%)	3 (4%)	23 (29%)	21 (28%)	78 (100%)
8. The likelihood of risks occurring in MCP activities are completely avoided	15 (19%)	29 (37%)	3 (4%)	23 (30%)	8 (10%)	78 (100%)
9. The consequences of risks in MCP activities have been reduced	14 (18%)	36 (46%)	1 (1%)	14 (18%)	13 (17%)	78 (100%)
10. The consequences of risks in MCP activities are completely avoided	15 (19%)	27 (34%)	9 (12%)	14 (18%)	13 (17%)	78 (100%)
11. Agreed risk responses for MCP activities are implemented	21 (27%)	34 (44%)	7 (9%)	11 (14%)	5 (6%)	78 (100%)

Source: Data from respondents
Key: SD = Strongly disagree, D = Disagree, NS = Not sure, A = Agree, SA = Strongly agree

Findings show that fewer staff in non-managerial positions of the MCP in Kabale District opposed one item about project risk assessment (that is items 1) compared staff in non-

managerial positions of the MCP in Kabale District who concurred with this item while a small percentage were not sure about this item. A comparison of this item shows that the percentages of respondents that opposed ranged from 52% to 71% while the percentages of respondents that were not sure ranged from 5% to 7% and the percentages of respondents that concurred ranged from 21% to 42%. From these comparisons, it can be seen that the percentages that opposed the items were lower compared to the percentages that concurred while the percentages that were not sure was small. Thus, from this analysis, the following is the interpretation. Findings show that the aims/objectives of risk management in MCP activities in Kabale district were defined.

However, findings show that more staff in non-managerial positions of the MCP in Kabale District opposed five items about project risk assessment (that is items 2 to 6) compared staff in non-managerial positions of the MCP in Kabale District who concurred with these items while a small percentage were not sure about these items. A comparison of these items shows that the percentages of respondents that opposed ranged from 55% to 70% while the percentages of respondents that were not sure ranged from 5% to 10% and the percentages of respondents that concurred ranged from 20% to 40%. From these comparisons, it can be seen that the percentages that opposed the items were higher compared to the percentages that were not sure and the percentages that concurred. Thus, from this analysis, the following is the interpretation. Findings show that the scope of risk management in MCP activities were not defined, the criteria and resources for the treatment of risks were not determined, risk analysis of MCP activities was not done to determine the risk characteristics and risk evaluation was not done to decide how risks would be treated. Thus, these findings show that project risk assessment of the MCP in Kabale district was poor.

Furthermore, findings show that fewer staff in non-managerial positions of the MCP in Kabale District opposed one item about project risk control (that is item 7) compared staff in non-managerial positions of the MCP in Kabale District who concurred with this items while a small percentage were not sure about this item. A comparison of this item shows that the percentages of respondents that opposed was 39% while the percentages of respondents that were not sure was 4% and the percentages of respondents that concurred was 57%. From these comparisons, it can be seen that the percentages that opposed the items were lower compared to the percentages that concurred while the percentages that were not sure was small. Thus, from this analysis, the following is the interpretation. Findings show that the likelihood of risks occurring in MCP activities in Kabale district was reduced.

However, findings show that more staff in non-managerial positions of the MCP in Kabale District opposed four items about project risk control (that is items 8 to 11) compared staff in non-managerial positions of the MCP in Kabale District who concurred with these items while a small percentage were not sure about these items. A comparison of these items shows that the percentages of respondents that opposed ranged from 58% to 80% while the percentages of respondents that were not sure ranged from 3% to 15% and the percentages of respondents that concurred ranged from 12% to 36%. From these comparisons, it can be seen that the percentages that opposed the items were higher compared to the percentages that were not sure and the percentages that concurred. Thus, from this analysis, the following is the interpretation. Findings show that the likelihood of risks occurring in MCP activities were not completely avoided, the consequences of risks in MCP activities were not completely avoided nor reduced and agreed risk responses for MCP activities were not implemented. This shows that project risk control of the MCP in Kabale district was poor.

Interview findings were in some instances supportive of or contrary to the findings obtained using questionnaires. The interview findings showed the beneficiaries' involvement in risk identification, assessment and response related to the MCP in Kabale district as key informant C;

> There is a very low degree of risk management activity in the MCP. In the procurement phase, the communication of known risks is very low. The beneficiaries are active in risk identification and assessment, but their role in risk response decreases dramatically (Interview with key informant C, 8th October 2014).

Thus, comparing with findings obtained using the questionnaire, nothing was captured related to how beneficiaries influenced project risk management of the MCP in Kabale District. Thus, this were valuable findings that the interviews contributed to this study. Furthermore, the influence of the actors on the risk management processes of the MCP in Kabale district was identified. Interview findings revealed that such influence was limited as shown in the following:

> Despite the fact that risk management is part of the MCP, many projects suffered from variations in cost for one or several actors. Some of the stakeholders like the beneficiaries and some district officers do not have any special training in risk management as the main source of knowledge. Some stakeholders' participation in the risk management process is generally limited by their roles in the MCP projects (Interview with key informant D, 13th October 2014).

From the above findings, it is shown that key informant D was of the view that risk management is a part of the MCP, which concurred with staff in non-managerial position who were of the same view that project risk assessment and risk control were conducted. However, the interview findings further revealed where the ineffectiveness of the MCP risk management in terms of project cost variations, which supports the staff in non-managerial

positions who opposed that risk analysis of MCP activities was done to determine the risk characteristics. Otherwise, if risk analysis of MCP activities was done, such project cost variations would not have happened. Interview findings further revealed that there was a lack of communication of risks among the actors within the district, which affected projects' delivery with certainty as shown in the following.

> Open communication and information exchange, active participation in discussions of risks, mutual respect for the roles and competence of those involved, personal commitment, motivation and responsibility, and trustful relationships have not been taken as important factors in achieving effective risk management. This has resulted into delivery problems such as delay and poor quality services (Interview with key informant B, 7th October 2014).

The interview findings, that there was a lack of communication of risks among the actors within the MCP in Kabale district between the actors was similar to the findings obtained using questionnaires where some staff in non-managerial positions where of the view that risk evaluation was done to decide how risks were treated. This is because even in making decisions, some kind of communications with various actors is necessary.

It was revealed that MCP staff in Kabale district faced significant financial barriers while accessing populations that work in remote areas to enhance malaria risk management as Key informant A of the MCP had this to say:

> Although the MCP aims to cover all at risk populations with vector control [indoor residual spraying and insecticide treated nets and surveillance activities (mass blood surveys), it does not have the resources required for 100% coverage of these measures districtwide (Interview with key informant A, 6th October 2014).

The interview findings support findings obtained using questionnaires where some staff in non managerial positions were of the view that the resources for the treatment of risks in

MCP activities were determined, but contrary to staff in non managerial positions that concurred to the items about resources. Thus, from the findings, it can be observed that project risk management was ineffective in the MCP in Kabale district. This can contribute to poor health service delivery of the MCP in Kabale district. The inferential statistics in the following sub section are used to confirm if such an effect was significant.

4.5.2 Testing second hypothesis

The second hypothesis states, "There is a positive significant effect of project risk management on performance of Malaria Control Programme". Spearman rank order correlation coefficient (*rho*) was used to test the hypothesis. Table 14 presents the test results.

Table 14: Correlation between project risk management and health service delivery of the MCP in Kabale District

Dependent variable	Independent variable Project risk management
Health service delivery	*rho* = .749 rho^2 = .561 p = .000 n = 74

Source: Data from respondents

Findings show that there was a strong positive significant correlation (*rho* = .749) between project risk management and health service delivery of the MCP in Kabale district. The coefficient of determination (rho^2 = .561) shows that project risk management accounted for 56.1% change in health service delivery of the MCP in Kabale district. These findings were subjected to a test of significance (p) and it is shown that the significance of the correlation (p = .000) is less than the recommended critical significance at .05. Thus, the hypothesis state, "There is a positive significant effect of project risk management on performance of Malaria Control Programme" was accepted.

Thus, the implication of the findings was that the strong effect implied that a change in project risk management contributed to a big change in health service delivery of the MCP in Kabale district. The positive nature of the effect implied that the change in project risk management and health service delivery was in the same direction whereby better project risk management contributed to better health service delivery of the MCP in Kabale district and poor project risk management contributed to poor health service delivery of the MCP in Kabale district.

A further analysis was conducted using a regression to determine the effect of the dimensions of project risk management (project risk assessment and project risk control) on health service delivery of the MCP in Kabale district. Findings are presented in Table 15, accompanied with an analysis and interpretation.

Table 15: **Effect of dimensions of project risk management on health service delivery of the MCP in Kabale District**

Regression Statistics	
Multiple R	.630
R Square	.397
Adjusted R Square	.381
Standard Error	4.155
Observations	78

ANOVA

	df	SS	MS	F	Sig F
Regression	2	854.12	427.06	24.74	.000
Residual	75	1294.86	17.26		
Total	77	2148.99			

	Beta (B)	Standard Error	t Stat	P-value
Intercept	6.61	2.61	2.53	.013
Project risk assessment	.65	.21	3.16	.002
Project risk control	.49	.18	2.67	.009

Source: Data from respondents

Findings in Table 18 show a strong linear relationship (Multiple R = .630) between the combined dimensions of project risk management (project risk assessment and project risk

control) and health service delivery of the MCP in Kabale district. The adjusted R Square shows that the combined dimensions of project risk management (project risk assessment and project risk control) account for 38.1% change in health service delivery of the MCP in Kabale district. These findings were subjected to an ANOVA test, which showed that the significance (Sig F = .000) of the Fishers ratio (F = 24.74) was less than the critical significance at .05. Hence, it is concluded that that the combined dimensions of project risk management (project risk assessment and project risk control) affected health service delivery of the MCP in Kabale district.

The p-values of Beta (B) values show that both project risk assessment and project risk control singularly affected health service delivery of the MCP in Kabale district because their significant p-values (p-value = .002 and p-value = .009) were less than the critical significance at .05. However, project risk assessment affected health service delivery of the MCP in Kabale district more because it had a higher Beta-value (B = .65) compared to project risk control with a lower higher Beta-value (B = .49).

4.6 Project Resource Project resource control and Health Service Delivery

Before testing the third hypothesis, descriptive results relating to project resource project resource control were presented, analyzed and interpreted. Findings are presented in the following subsection.

4.6.1 Descriptive results about project resource project resource control

Respondents of the MCP in Kabale district were requested to respond to 14 items about project resource project resource control by indicating their agreement using a five-point Likert scale. Findings are presented in Table 16. The analysis and interpretation of the findings about project resource project resource control follows the presentation of findings.

Table 16: Findings about project resource project resource control of the MCP in Kabale District

Items about project non-financial resource control	SD	D	NS	A	SA	Total
1. Realistic budgets for MCP activities are developed	12 (15%)	29 (38%)	5 (6%)	18 (23%)	14 (18%)	78 (100%)
2. Financial resources for MCP activities are not misappropriated/misused/embezzled	12 (15%)	35 (45%)	6 (8%)	17 (22%)	8 (10%)	78 (100%)
3. Budget variances for MCP activities are well explained to the stakeholders	13 (17%)	33 (42%)	4 (5%)	16 (21%)	12 (15%)	78 (100%)
4. Expenditure variances for MCP activities are well explained to the stakeholders	15 (19%)	30 (39%)	7 (9%)	15 (19%)	11 (14%)	78 (100%)
5. MCP activity costs are kept as reasonable as possible within the its budget	15 (19%)	39 (49%)	6 (8%)	16 (21%)	2 (3%)	78 (100%)
6. There are no delays in the MCP supply chain for products/services provided to the community	12 (15%)	47 (61%)	5 (6%)	12 (15%)	2 (3%)	78 (100%)
7. Procurement for the MCP activities are well handled	11 (14%)	32 (41%)	5 (6%)	13 (17%)	17 (22%)	78 (100%)
8. Stock is available at MCP to meet the needs of the beneficiary as and when required	16 (21%)	32 (41%)	6 (8%)	12 (15%)	12 (15%)	78 (100%)
Items about project financial resource control	**SD**	**D**	**NS**	**A**	**SA**	**Total**
9. Adequate financial resource requirements for MCP activities are predicted	8 (10%)	42 (54%)	7 (9%)	10 (13%)	11 (14%)	78 (100%)
10. Adequate equipment resource requirements for MCP activities are predicted	17 (22%)	34 (44%)	5 (6%)	18 (23%)	4 (5%)	78 (100%)
11. Financial resource requirements for MCP activities are well utilized	14 (18%)	40 (51%)	4 (5%)	13 (17%)	7 (9%)	78 (100%)
12. Equipment resource requirements for MCP activities are well utilized	11 (14%)	21 (27%)	9 (12%)	14 (18%)	23 (29%)	78 (100%)
13. Efficiency of financial resource requirements for MCP activities has been improved	11 (13%)	21 (27%)	9 (12%)	17 (22%)	20 (26%)	78 (100%)
14. Efficiency of equipment resource requirements for MCP activities has been improved	11 (14%)	39 (50%)	5 (6%)	14 (18%)	9 (12%)	78 (100%)

Source: Data from respondents

Key: SD = Strongly disagree, D = Disagree, NS = Not sure, A = Agree, SA = Strongly agree

Findings show more staff in non-managerial positions of the MCP in Kabale District opposed all eight items about non-financial resource control (that is items 1 to 8) compared staff in non-managerial positions of the MCP in Kabale District who concurred with these items while a small percentage were not sure about these items. A comparison on these items shows that the percentages of respondents that opposed ranged from 53% to 76% while the percentages of respondents that were not sure ranged from 5% to 9% and the percentages of respondents that concurred ranged from 18% to 41%. From these comparisons, it can be seen that the percentages that opposed the items were higher compared to the percentages not sure and the percentages that concurred. Thus, from this analysis, the following is the

interpretation. Findings show that realistic budgets for MCP activities were not developed, financial resources for MCP activities were misappropriated/misused/embezzled, budget variances for MCP activities are poorly explained to the stakeholders and expenditure variances for MCP activities are poorly explained to the stakeholders. MCP activity costs were not kept as reasonable as possible within the its budget, there were delays in the MCP supply chain for products/services provided to the community, procurement for the MCP activities are poorly handled and stock was not available at MCP to meet the needs of the beneficiary as and when required. Thus, this shows that non-financial resource control of the MCP in Kabale district was poor.

Interview findings revealed the following about project resource control. Ineffectiveness of financial resources in the MCP takes various forms as revealed by key informant E as following:

> Abuse can take various forms. Apart from outright diversion of funds, misappropriation can take place through inflated salaries, or unwarranted per diems, and be much harder to detect as a result. Identifying inappropriate behavior is made even more problematic when the MCP does not hold proper records and accounts, in which case it is difficult to distinguish dishonest behavior from incompetence (Interview with key informant E, 14th October 2014).

The findings from key informant E concurs with staff in non-managerial positions who through the questionnaire opposed that financial resource requirements for MCP activities were well utilized. In fact, the interview findings showed exactly how the financial resources were misused in terms of inflated salaries, project fund diversions and unwarranted per diems. This was also revealed in the findings obtained using questionnaire where some of the staff in non-managerial positions were of the view that financial resources for MCP activities were misappropriated/misused/embezzled. Poor accountability and mismanagement was an

issue for the MCP in Kabale district. Key informant A of the MCP in Kabale district for example revealed the following.

> Here in Kabale District, funding for MCP project activities is not always used according to guidelines. The Kabale District MCP often does not include the purchase of inputs in their budgets as required. Some MCP implementers are often not aware of how much funding for their activities is credited to their accounts. There was a time when almost half of the budget was not utilized and two thirds of unused funds could not be accounted for in the fiscal year 2004/05 and 2005/06 (Interview with key informant A, 6th October 2014).

Lack of accountability and transparence in controlling resources for the MCP projects in Kabale district was also due to lack of information flow. Key informant C revealed the following:

> A lack of information flow between community members and the MCP top level management has been a key obstacle to project implementation at the community level in some communities. This has resulted in limited transparency, accountability, and attempts by dominant members of the community and politicians to seize control of the project for their own gain. It also resulted in misuse of funds (Interview with key informant C, 8th October 2014).

The issue of poor accountability and mismanagement is not limited to financial resources but also non-financial resources of the MCP in Kabale district. In this respect, key informant B had this to say;

> Some MCP people in collaboration with physicians are alleged to reroute essential drugs to private clinics and pharmacies and then send public patients to these outlets to purchase the medication. They also under-procure drugs to cause a shortage which is then covered by the private market. Mechanisms to regulate are made dysfunctional

as the district teams responsible for monitoring are sometimes involved in these diversions for private health care (Interview with key informant B, 7th October 2014).

Thus, findings of this study show that project resource control of the MCP in Kabale district was ineffective. In the conceptual framework, it was argued that this could contribute to poor health service delivery of the MCP in Kabale district. The following section presents findings as to whether project resource control affected health service delivery of the MCP in Kabale district.

4.6.2 Testing third hypothesis

The third hypothesis stated, "There is a positive significant effect of project resource management on public health service delivery by the Malaria Control Programme in Uganda". Spearman rank order correlation coefficient (*rho*) was used to test the hypothesis. Table 20 presents the test results.

Table 17: Correlation between project resource project resource control and health service delivery of the MCP in Kabale District

Dependent variable	Independent variable Project resource project resource control
Health service delivery	*rho* = .563 rho^2 = .317 p = .000 n = 78

Source: Data from respondents

Findings show that there was a moderate positive significant correlation (*rho* = .563) between project resource project resource control and health service delivery of the MCP in Kabale district. The coefficient of determination (rho^2 = .317) shows that project resource project resource control accounted for 31.7% change in health service delivery of the MCP in Kabale district. These findings were subjected to a test of significance (p) and it is shown that the significance of the correlation (p = .000) is less than the recommended critical significance at .05. Thus, the effect was significant. Because of this, the hypothesis stated,

"There is a positive significant effect of project resource management on public health service delivery by the Malaria Control Programme in Uganda" was accepted.

Thus, the implication of the findings was that the moderate effect implied that a change in project resource project resource control contributed to a moderate change in health service delivery of the MCP in Kabale district. The positive nature of the correlation implied that the change in project resource project resource control and health service delivery of the MCP in Kabale district was in the same direction whereby better project resource project resource control was related to better health service delivery of the MCP in Kabale district and poor project resource project resource control was related to poor health service delivery of the MCP in Kabale district.

A further analysis was conducted using a regression to determine the effect of the dimensions of project resource project resource control (non-financial resource control and financial resource control) on health service delivery of the MCP in Kabale district. Findings are presented in Table 21, accompanied with an analysis and interpretation.

Table 18: **Effect of dimensions of project resource project resource control on health service delivery of the MCP in Kabale District**

Regression Statistics	
Multiple R	.569
R Square	.323
Adjusted R Square	.305
Standard Error	4.403
Observations	78

ANOVA

	df	SS	MS	F	Sig F
Regression	2	694.72	347.36	17.91	.000
Residual	75	1454.27	19.39		
Total	77	2148.99			

	Beta (B)	Standard Error	t Stat	P-value
Intercept	10.98	2.26	4.87	.000
Project non-financial resource control	.35	.10	3.51	.001
Project financial resource control	.33	.10	3.27	.002

Source: Data from respondents

Findings in Table 21 show a moderate linear relationship (Multiple R = .569) between the combined dimensions of project resource project resource control (non-financial resource control and financial resource control) and health service delivery of the MCP in Kabale district. The adjusted R Square shows that the combined dimensions of project resource project resource control (non-financial resource control and financial resource control) account for 30.5% change in health service delivery of the MCP in Kabale district. These findings were subjected to an ANOVA test, which showed that the significance (Sig F = .000) of the Fishers ratio (F = 17.91) was less than the critical significance at .05. Hence, the findings were accepted.

The p-values of Beta (B) values show that both non-financial resource control and financial resource control had a significant singular effect on health service delivery of the MCP in Kabale district because the significant p-values (p-value = .001 and p-value = .002) were less than the critical significance at .05. However, non-financial resource control had a more significant effect on health service delivery of the MCP in Kabale district compared to financial resource control because its Beta-value (B = .35) was greater compared to that of non-financial resource control Beta-value (B = .33).

4.7 Summary

This chapter presents, analyzed and interpreted the findings. The following chapter summarizes and discusses the findings, and then conclusions and recommendation are drawn.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, discussion, conclusions and recommendations. It is divided into four major sections. The first section presents the summary according to the objectives of the study. The second section presents the discussion according to the objectives of the study. The third section presents the conclusions according to the objectives of the study. The fourth section presents the recommendations according to the objectives of the study.

5.2 Summary of Findings

5.2.1 Project quality control and health service delivery

Findings show that most respondents were of the view that quality standards were always identified to govern the MCP execution of its activities. However, most respondents were of the view that the local community, donors and MCP employees were not consulted about quality standards that govern the MCP execution of its activities and that the MCP services/products were not appropriate, reliable, and suitable to the beneficiaries. Thus, these findings show that product quality definition by MCP was poor.

This study established a moderate positive significant correlation (*rho* = .560) between project quality control and health service delivery of the MCP in Kabale district whereby better project quality control contributed to better health service delivery of the MCP in Kabale district and poor project quality control contributed to poor health service delivery of the MCP in Kabale district. Project quality control accounted for 31.4% change in health service delivery. Findings revealed that both product quality definition and project quality assurance singularly had a significant effect on health service delivery of the MCP in Kabale

district because the significant p-values (p-value = .040 and p-value = .000) were less than the critical significance at 0.05. However, project quality assurance more significantly affected health service delivery of the MCP in Kabale district compared to product quality definition because it had a higher Beta-value (B = .61) compared to that of project quality assurance higher Beta-value (B = .20).

5.2.2 Project risk management and health service delivery

Findings revealed that most respondents were of the view that the aims/objectives of risk management in MCP activities in Kabale district were defined. However, most respondents were of the view that the scope of risk management in MCP activities were not defined, the criteria and resources for the treatment of risks were not determined, risk analysis of MCP activities was not done to determine the risk characteristics and risk evaluation was not done to decide how risks would be treated.

The study established a strong positive significant correlation (*rho* = .749) between project risk management and health service delivery of the MCP in Kabale district whereby better project risk management contributed to better health service delivery of the MCP in Kabale district and poor project risk management contributed to poor. Project risk management accounted for 56.1% change in health service delivery in the District. It was established that both project risk assessment and project risk control singularly affected health service delivery of the MCP in the District because their significant p-values (p-value = .002 and p-value = .009) were less than the critical significance at 0.05. However, project risk control affected health service delivery of the MCP in Kabale District more compared to project risk assessment because it had a higher Beta-value (B = .65) compared to that of project risk control Beta-value (B = .49).

5.2.3 Project resource control and health service delivery

In this study it was established that realistic budgets for MCP activities were not developed, financial resources for MCP activities were misappropriated/misused, budget variances for MCP activities are poorly explained to the stakeholders and expenditure variances for MCP activities are poorly explained to the stakeholders. MCP activity costs were not kept as reasonable as possible within the its budget, there were delays in the MCP supply chain for products/services provided to the community, procurement for the MCP activities are poorly handled and stock was not available in time to meet the needs of the beneficiary when required.

The study established a moderate positive significant correlation (*rho* = .563) between project resource control and health service delivery of the MCP in Kabale District whereby better project resource control was related to better health service delivery and poor project resource control was related to poor health service delivery of the MCP in Kabale District. Project resource control accounted for 31.7% change in health service delivery of the MCP in Kabale District. Findings showed that both non-financial resource control and financial resource control had a significant singular effect on health service delivery of the MCP in Kabale District because the significant p-values (p-value = .001 and p-value = .002) were less than the critical significance at 0.05. However, non-financial resource control had a more significant effect on health service delivery of the MCP in Kabale District compared to financial resource control because its Beta-value (B = .35) was greater compared to that of non-financial resource control Beta-value (B = .33).

5.3 Discussion of Findings

5.3.1 Project quality control and health service delivery

The positive effect of project quality control on health service delivery of the MCP in Kabale District established in this study shows that an effective way to control a project is to continuously measure the progress of its work and the teams working on it; comparing that progress against the plan and then adjusting the development parameters to correct any deviation from the project plan. Ashton and Sung (2002) observed that the aspect of project quality control has been identified as extremely important in determining the success of virtually all businesses. Findings of this study also concur with several studies such as those by Ansoff (as cited in Boselie, Paauwe & Jansen, 2001) and by Layton (1991) that showed that a formal project quality control system was an important factor in leading to corporate success, as measured by performance.

Findings of this are contrary to other researchers of the project quality control activity such as Watts (as cited in Farias, 1998) and Malik and Karger (as cited in Goddard, 2004) who have reported conflicting evidence which both supports and refutes the significance of a project quality control process on the corporate success of an organization. Farias (1998) following an exhaustive review of the area, they concluded that little attention has been paid to analyzing the cost-benefit ratio of project quality control in service delivery. Thus, it is not always true that project quality control affects service delivery positively or negatively. On the other hand, Malik and Karger (as cited in Goddard, 2004) wondered whether project control affected organization performance. This arose after a review of contradicting arguments and evidence about the effect of project control on organization performance.

The positive relationship between project quality control and health service delivery of the MCP in Kabale District established in this study support research findings of other studies

and assumptions of other authors and academicians. For example, finding of this study support Butler, Corke, Peterson and Rus (2004) who argued that the ultimate raison d'être underpinning project quality control in organizations is performance maximization. In addition, the findings support Ashton and Sung's (2002) underlying assumption that project quality control necessarily gives rise to positive improvements in health service delivery. Ashton and Sung's (2002: p. 17) were unequivocal in stating that first and foremost, stringent scientific research has now established a moderate link between the use of project management practices such as project quality control and enhanced performance across a range of indicators. Put plainly, investment in these practices pays off on the bottom line.

Findings of this study concur with Boselie, Paauwe and Jansen (2001) who emphasized that project quality control is used to provide a structured approach to the attainment of the desired level of performance in an organization. The findings also agree with Fletcher, Fuller and Phipps (2001) who observed that project quality control if well conducted would enhance health service delivery.

That project quality control has the potential to deliver organizationally benign outcomes thus appears to be settled in this study and other studies. Echoing this study's findings and position, Whitfield and Poole (1997, p. 755) have similarly concluded that extant research is supportive of the hypothesis that firms adopting a better project quality control approach have better outcomes than those which do not (Farias, 1998; Goddard, 2004).

Findings of this study are supported by other studies conducted elsewhere. For example, the seminal early works on project quality control processes that support the findings of this study include Ansoff (1995), Ogus (1995), Steiner (1999) and Lorange (2010). Like these

studies, the importance of project quality control to health service delivery of the MCP in Kabale District has been emphasized.

5.3.2 Project risk management and health service delivery

The effect of project risk management practices on health service delivery of the MCP in Kabale District established in this study is supported by Jennings (1994) who was of the view that the ability to successfully manage project risks what drives the realization of intended benefits and the achievement of project objectives. Risk management is an approach for the identification, assessment, and prioritization of risks followed by planning of resources to minimize, monitor, and control the probability and impact of undesirable events (Smith and Merritt, 2002). Findings of this study agree with Cordella and Kai (2006) who argued that project risk management is critical to service delivery and organizational success. Project risk management leads to accomplishments in achieving health service delivery of the MCP in Kabale District.

Findings about the positive effect of project risk management on health service delivery of the MCP in Kabale District of MCP support various studies (such as Cheng & Miller, 2005; Malone & Crowston, 1990; Crowston, 1991; Jennings, 1994) that have been conducted in this respect elsewhere. This study's findings also support some academicians' views on the contribution of project risk management on performance of an organization (such as Cordella & Kai, 2006). Findings of this study are similar to a survey, which was carried out in order to examine project risk management practice in the British utility sector (Elkington & Smallman, 2002). Findings indicated a strong link between the extent of risk management undertaken in a project and the level of project success. Distinguishing between risks that exist prior to a phase and those that emerge during a phase is important for risk management,

because factors that exist prior to a particular project or operational phase may need to be managed differently than those that emerge during that phase (Alter & Sherer, 2004).

Findings of this show that the major purpose of risk management is to increase success rate of a project. The ways to identify, assess, and prioritize risks are limited within a single project scope (Smith, 1999; Browning, Deyst, Eppinger & Whitney, 2002; Keizer, Halman & Song, 2002; Raz, Shenhar & Dvir, 2002; Saari, 2004; Keizer, Vos & Halman, 2005). The main problem is that if the identified risks are improperly identified and prioritized, then time and cost can be wasted in dealing with risk of losses. Therefore, there is a need to link individual project risk management with the corporate strategic management to ensure that managed risks are coped with by the corporate strategy and corporate objectives can be eventually achieved. The purpose of risk identification is to distinguish risks that may affect project outcomes and determine their characteristics. Risk assessment evaluates the probability of an identified risk and its effects on project objectives. Risk response planning determines suitable actions for reacting to specific risks to reduce threats to the project success. The identified risks can then be monitored and controlled throughout the project.

This research considers risk to be an event having a negative impact on project outcomes (Browning et al., 2002; Raz, Shenhar & Dvir, 2002; Smith and Merritt, 2002; Keizer, Halman & Song, 2002; Keizer, Vos & Halman, 2005; Perminova, Gustafsson & Wikstrom, 2008). This requires a risk management framework that aligns project risk management with corporate strategy and a performance measurement system to increase success rates of projects.

Risk management is one of the approaches that have been widely applied in practice (Williams, 1995; Smith, 1999; Keizer, Halman & Song, 2002; Raz, Shenhar & Dvir, 2002;

Cooper, 2003; Smith and Merritt, 2002). In the literature of risk management supporting the findings of this study, several studies have found that applying risk management techniques to projects can improve their success rates (Raz, Shenhar & Dvir, 2002; Salomo, Weise & Gemunden, 2007; O'Connor, Ravichandran & Robeson, 2008). Smith (1999) described principles and guidelines for effective risk management and emphasized the importance of active risk management for improving their success rates. Raz Shenhar and Dvir, (2002) performed an empirical study and reported that risk management practice is more applicable for higher-risk projects and appears to be related to project success. Salomo Weise and Gemunden, (2007) investigated the effects of business planning and control on the performance of new product development projects and found that project risk planning and goal stability throughout the development process are found to enhance performance significantly. O'Connor Ravichandran and Robeson, (2008) defined three learning oriented risk management practices, including option mentality, use of experimental and learning processes, and use of harvest strategy, and found that using the first two practices has a significant positive effect on the success of project. Mu et al. (2009) conducted an empirical study and showed that risk management strategies targeting technological, organizational, and marketing risk factors influence the performance of project.

5.3.3 Project resource control and health service delivery

The positive effect of project resource control and health service delivery at MCP in Kabale district established in this study indicates that central importance of project resources. Resources of project are limited, the target of organization is to utilize them effectively to achieve the maximum value of project. Organization can pre-develop criteria to score and rank the project based on the maximum score of portfolio (Blomquist & Müller, 2006). Short-term and long-term strategies should be taken into account in the process of managing

projects to deal with the challenge that availability of scarce resources entails strategic alignment of resources with business strategy delivery.

More interestingly, instead of being too much concerned about the current inadequate capability and capacity, the project management team should be also aware of potential internal and external resources in relation to business strategy when implementing projects (Englund & Graham, 1999). Similarly, Frame (1994, p. 181) makes the following argument for project implementation:

> A big problem with offhand project implementation is that it leads to the ineffective use of resources. Support of a project to satisfy short-term exigencies may lead to long-term fiascos. Those making the decisions often forget that by committing resources to a poorly conceived project idea, they are tying up those resources. They have not taken into account the opportunity costs of their decision. If a truly good project prospect arises in the future, they may no longer have the resources to pursue it because their resources are tied up in marginal undertakings.

In this study, the project resources included both non-material and financial resources and the study established that both significantly affected health service delivery of the MCP in Kabale District. The reason why non-financial resources significantly affected health service delivery of the MCP in Kabale District can be drawn from Verma (1995, 1996) who wrote that communication, teamwork, and leadership are vital components of effective management of project human resources and are necessary to accomplish project objectives successfully. Cleland (as cited in Crawford, 2002) suggested that project success is meaningful only if the degree to which the project's technical performance objective was attained on time and within budget.

The findings of this study are supported by Jakovljevic (2003) who argued that project managers should allocate and monitor their resources effectively and regularly during the course of project life. To perform it, project managers need to understand performance monitoring of resources. Monitoring is a process that assesses the quality of internal control performance of the resources involved in any task or project over time. Monitoring is the most feasible and pragmatic mechanism of ensuring effective performance by the project resources. A control system needs to be monitored to ensure that it continues to operate effectively as intended. Without continual and effective monitoring, a control process may fall into a state of despair or not be executed altogether (Strub & Lucas, 2003). This study perceives that monitoring the resources of a project in a consistent and structured manner should bring value. Members of the teams working on projects must be aware that their efforts are being monitored consistently by their leader (project manager) not only for possible corrections at the nick of time when required.

Johnson et al. (2006) explicitly argued that strategic capabilities defined as "the adequacy and suitability of the resources and competences of an organization for it to survive and prosper" (p.117) should be created in either strategic fit way (i.e. outside-in synergy, change of internal capabilities to better fit opportunities identified in the changing environment) or strategic stretch way (i.e. inside-out synergy, creation of new opportunities through enhancement and utilization of strategic capabilities) to develop and sustain service delivery. This implicitly encompasses the essence of competently dedicating resources especially strategic resources to support the organizations' strategies (Porter, 1985; Wernerfelt, 1995; Johnson, Lilja, Ashby & Garcia, 2006). This dedication of resources is described as leverage of resources inclusive of concentration of resources on strategic goals; more efficient accumulation of resources; complement of resources; conservation of resources; and recovery of resources (Hamel & Prahalad, 1993).

5.4 Conclusions

5.4.1 Project quality control and health service delivery

Findings of this study revealed that project quality control plays an important role in the health service delivery of the MCP in kabale district. The positive nature of the effect implied that the change in project quality control and health service delivery was in the same direction whereby better project quality control contributed to better health service delivery of the MCP in Kabale district and poor project quality control contributed to poor health service delivery of the MCP in Kabale district. This shows that if project quality control is poorly handled in organizations, health service delivery of the MCP in Kabale District will be poor.

5.4.2 Project risk management and health service delivery

This study like other studies conducted elsewhere demonstrates the importance project risk management in health service delivery of the MCP in Kabale District. The positive relationship between project risk management and health service delivery of the MCP in Kabale District emphasizes that organizational activities should be performed well for the organization.

5.4.3 Project resource control and health service delivery

Given the positive relationship between project resource control and health service delivery of the MCP in Kabale District, findings of this study demonstrate that the crucial role of project resource control in health service delivery of the MCP in Kabale District. Thus, it is important that organizations conduct assessments to identify and avoid risks in their activities for deliver better services.

5.5 Recommendations

5.5.1 Project quality control and health service delivery

MCP management should improve project quality control to enhance its health service delivery of the MCP in Kabale District. Priority should be project quality assurance given that more significantly affected health service delivery of the MCP in Kabale District compared to project quality definition. More specifically, MCP management should conduct evaluations to provide evidence that MCP quality-related activities and donors, the local community and MCP employees should provided with evidence that MCP quality-related activities are being performed effectively. MCP management should put in place safeguards and corrective action should be taken to make sure that the expected levels of quality in MCP activities would produce quality outputs. Lastly, MCP management should consult the local community, donors and MCP employees about quality standards that govern the MCP execution of its activities.

5.5.2 Project risk management and health service delivery

MCP management should improve project risk management to enhance its health service delivery of the MCP in Kabale District. Priority should be project risk assessment given that more significantly affected health service delivery of the MCP in Kabale District compared to project risk control. To achieve this, MCP management should define the scope of risk management in MCP activities, determine the criteria and resources for the treatment of risks, conduct risk analysis of MCP activities to determine the risk characteristics and conduct risk evaluation to decide how risks would be treated. In addition, MCP management should completely avoid the likelihood of risks occurring in MCP activities and the consequences of risks in MCP activities and should implement agreed risk responses for MCP activities.

5.5.3 Project resource control and health service delivery

MCP management should improve project resource control to enhance its health service delivery of the MCP in Kabale District. Priority should be non-financial resource control given that more significantly affected health service delivery of the MCP in Kabale District compared financial resource control. To achieve this, MCP management should develop realistic budgets for MCP activities, effectively utilize financial resources for MCP activities, and properly explain budget and expenditure variances for MCP activities to the stakeholders. MCP management should also keep MCP activity costs as reasonable as possible within the its budget, improve on the MCP supply chain for products/services provided to the community, handle well the procurement for the MCP activities.

5.6 Area for Further Study

This study focused on the effect of project control systems on public health service delivery in Uganda, using a case study of the MCP in Kabale district. In relation to project control systems, this study specifically focused on project quality control, project risk management and project resource control. However, project control systems include other aspects such as document control, supplier performance measurement/oversight, control scheduling, project performance standards setting, project performance measurement, project scope control and project schedule control to mention some. Thus, other study should be conducted focusing these aspects of project control systems that were not handled in this study.

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APPENDICES

Appendix 1: Table for determining sample size from a given population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: “N” is population size

“S” is sample size.

Appendix 2: Questionnaire for MCP Staff

Dear Respondent,

Please kindly spare some few minutes to respond to the following questions. Information received from you is for academic purposes and will be kept confidential. You will not be victimized for whatever answer you have given and to ensure this, you are not required to identify yourself anywhere on the questionnaire.

Section A: Background

1. Gender: □ Male □ Female (Please tick)
2. Education level (indicate highest)
   Primary □ O-Level □ A-Level □ Tertiary □ University □
3. Period you have work with the organization: □ (Less than 1 year) □ (1-2 years)
   □ (3-5 years) □ (5-10 years) □ (Above 10 years)
4. Age □ (20-29) □ (30-39) □ (40-49) □ (Above 49)

Section B: Project quality control

How strongly do you agree or disagree with the following statements about project planning practices? Tick or circle the most appropriate response using the following scale. Please do not omit any feature.

SD = Strongly disagree D = Disagree NS = Not sure A = Agree
SA = Strongly agree

Items about project quality definition	**SD**	**D**	**NS**	**A**	**SA**
1. Quality standards are always identified to govern the MCP execution of its activities	1	2	3	4	5
2. The local community is consulted about quality standards that govern the MCP execution of its activities	1	2	3	4	5
3. The donors are consulted about quality standards that govern the MCP execution of its activities	1	2	3	4	5
4. The MCP employees are consulted about quality standards that govern the MCP execution of its activities	1	2	3	4	5
5. The MCP services/products are appropriate to the beneficiaries needs	1	2	3	4	5
6. The MCP services/products are reliable to the beneficiaries	1	2	3	4	5

7. The MCP services/products are timely to the beneficiaries	1	2	3	4	5
8. The MCP services/products are suitable to the beneficiaries	1	2	3	4	5
Items about project quality assurance	**SD**	**D**	**NS**	**A**	**SA**
9. Evaluations are conducted to provide evidence that MCP quality-related activities are being performed effectively	1	2	3	4	5
10. Donors are provided evidence that MCP quality-related activities are being performed effectively	1	2	3	4	5
11. The local community is provided evidence that MCP quality-related activities are being performed effectively	1	2	3	4	5
12. MCP employees are provided evidence that MCP quality-related activities are being performed effectively	1	2	3	4	5
13. Safeguards are in place to make sure that the expected levels of quality in MCP activities will produce quality outputs	1	2	3	4	5
14. Corrective action is taken to make sure that the expected levels of quality in MCP activities will produce quality outputs	1	2	3	4	5

Section C: Project risk management

How strongly do you agree or disagree with the following statements about project execution practices? Tick or circle the most appropriate response using the following scale. Please do not omit any feature.

SD = Strongly Disagree D = Disagree NS = Not sure A = Agree

SA = Strongly agree

Items about project risk assessment	**SD**	**D**	**NS**	**A**	**SA**
1. The aims/objectives of risk management in MCP activities are defined	1	2	3	4	5
2. The scope of risk management in MCP activities are defined	1	2	3	4	5
3. The criteria for the treatment of risks are determined	1	2	3	4	5
4. The resources for the treatment of risks in MCP activities are determined	1	2	3	4	5
5. Risk analysis of MCP activities is done to determine the risk characteristics	1	2	3	4	5
6. Risk evaluation is done to decide how risks will be treated	1	2	3	4	5
Items about project risk control	**SD**	**D**	**NS**	**A**	**SA**
7. The likelihood of risks occurring in MCP activities have been reduced	1	2	3	4	5
8. The likelihood of risks occurring in MCP activities are completely avoided	1	2	3	4	5

9. The consequences of risks in MCP activities have been reduced	1	2	3	4	5
10. The consequences of risks in MCP activities are completely avoided	1	2	3	4	5
11. Agreed risk responses for MCP activities are implemented	1	2	3	4	5

Section D: Project resource control

How strongly do you agree or disagree with the following statements about project control practices? Tick or circle the most appropriate response using the following scale. Please do not omit any feature.

SD = Strongly Disagree D = Disagree NS = Not sure A = Agree

SA = Strongly agree

Items about project non-financial resource control	**SD**	**D**	**NS**	**A**	**SA**
1. Realistic budgets for MCP activities are developed	1	2	3	4	5
2. Financial resources for MCP activities are not misappropriated/misused/embezzled	1	2	3	4	5
3. Budget variances for MCP activities are well explained to the stakeholders	1	2	3	4	5
4. Expenditure variances for MCP activities are well explained to the stakeholders	1	2	3	4	5
5. MCP activity costs are kept as reasonable as possible within the its budget	1	2	3	4	5
6. There are no delays in the MCP supply chain for products/services provided to the community	1	2	3	4	5
7. Procurement for the MCP activities are well handled	1	2	3	4	5
8. Stock is available at MCP to meet the needs of the beneficiary as and when required	1	2	3	4	5
Items about project financial resource control	**SD**	**D**	**NS**	**A**	**SA**
9. Adequate financial resource requirements for MCP activities are predicted	1	2	3	4	5
10. Adequate equipment resource requirements for MCP activities are predicted	1	2	3	4	5
11. Financial resource requirements for MCP activities are well utilized	1	2	3	4	5
12. Equipment resource requirements for MCP activities are well utilized	1	2	3	4	5
13. Efficiency of financial resource requirements for MCP activities has been improved	1	2	3	4	5
14. Efficiency of equipment resource requirements for MCP activities has been improved	1	2	3	4	5

Section E: Health service delivery

How strongly do you agree or disagree with the following statements about project quality? Tick or circle the most appropriate response using the following scale. Please do not omit any feature.

SD = Strongly Disagree D = Disagree NS = Not sure A = Agree

SA = Strongly agree

Items about health service delivery	**SD**	**D**	**NS**	**A**	**SA**
1. There have been no complaints about mosquito net delivery to the beneficiary	1	2	3	4	5
2. The number of mosquito nets delivered to the beneficiary has been increasing	1	2	3	4	5
3. The number of people who received mosquito nets has been increasing	1	2	3	4	5
4. There have been no complaints about malaria drug delivery to the beneficiary	1	2	3	4	5
5. The quantity of drugs given to people has been increasing	1	2	3	4	5
6. The number of people who received drugs has been increasing	1	2	3	4	5
7. There have been no complaints about management of malaria	1	2	3	4	5
8. The cases of malaria treated has reduced	1	2	3	4	5
9. The prevalence of malaria has reduced	1	2	3	4	5

Thank you for cooperation

Appendix 3: Interview Guide for MCP Management

Dear Respondent,

Please kindly spare some few minutes to respond to the following questions. Information received from you is for academic purposes and will be kept confidential. You will not be victimized for whatever answer you have given and to ensure this, you are not required to identify yourself anywhere on the questionnaire.

1. Is the project quality control satisfactory? Briefly explain your response.
2. How has project quality control affected health service delivery
3. Is the project risk management satisfactory? Briefly explain your response.
4. How has project risk management affected health service delivery
5. Is the project resources control satisfactory? Briefly explain your response.
6. How has project resources control affected health service delivery

Thank you for cooperation