

**IMPACT OF PROJECT MANAGEMENT INFORMATION SYSTEMS ON  
PROJECT SUCCESS: A CASE STUDY OF WORLD VISION TANZANIA**

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**A DESSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTERS OF PROJECT  
MANAGEMENT IN THE OPEN UNIVERSITY OF TANZANIA**

**2015**

**CERTIFICATION**

The undersigned certify that he has read and hereby recommends for the acceptance by the Open University of Tanzania a dissertation titled: **Impact of Project Management Information Systems on Project Success**, in fulfillment of the requirements for the degree of Masters of Project Management of the Open University of Tanzania.



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Date: 20/11/2015

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I, **Christopher Kombe** hereby do declare that this dissertation is my own original work and that it has not yet been presented and will not be presented to any other University for similar or any other degree award.

Signature: .....

Date: .....

**DEDICATION**

This work is dedicated to my parents Mr. Francis Kombe and his lovely wife Mrs. Mary Kombe and to my precious fiancée Elizabeth.

## **ACKNOWLEDGEMENT**

First and foremost, I thank the almighty God without his grace; this dissertation would not have been accomplished. My appreciation to lovely and committed Supervisor, Dr Joseph Magali for his commitment to mentor and fine-tuning my understanding on every step of this work. He also encouraged the spirit of excellence in me. His instructions, cooperation and criticism were of great importance and helpful towards this stride.

I am also grateful to my organization (World Vision Tanzania) which has made easy the process of data collection and also the opportunity they gave me to study masters program. In the field I am very much indebted to all those who facilitated access to data and information. I am deeply thankful to the senior manager-sponsorship, Mr Johnson Robinson, associate director block B, Mrs Mary Lema, director for quality and assurance, Mr Griffin Zakayo, project managers and DME officers. My interaction with all of you during this period has been privilege and a true learning experience.

Furthermore I am indebted to extend my appreciation to all MPM students 2014/2015 intake, Arusha branch for being part of my achievement. Their contribution, encouragement, teachings and criticism during group discussions have been of great importance in achieving my goals.

Lastly but not the least, I am grateful to my fiancée Elizabeth for encouragements and for dispensing good advice when needed and for inspiring me to carry on when I thought I could not, during the research and writing of the dissertation.

## **ABSTRACT**

This study aimed at assessing the impact of project management information system on project success. The research study was done at WVT which has established its projects in several parts of Tanzania, that's at the Indian coast, central part, northern, lake zone and at the western part which covers almost 10 regions. More specifically the researcher aimed at finding the quality of the software, quality of PMIS information output and the use of PMIS (Utilization) in resulting to project success. The researcher purposely sampled all 62 WVT projects national wide, whereby 92 staff with distribution of 30 DME officers and 62 project managers were given questionnaires; other forms of data collection like direct observation and face to face interview were also used. The responses of the participants were analyzed using the statistical package for social sciences (SPSS). It was found that the system that has been used for managing projects-PMIS was of good quality and the information generated by the PMIS was of good quality too, PMIS users (PMs & DMEOs) have well been trained on the use of the PMIS and are very confident on the use of the system that's finally PMIS has been of great success factor towards project success. The study further revealed that PMIS has been a tool which has enhanced positively on the success of projects. This study recommends that organization should adopt the use of PMIS in the management of their projects. PMIS guarantees better management of project because it generates quality information needed for the management of the project; This study also recommends that the environment for smooth running of the system should highly be prioritized.



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## **ABBREVIATIONS AND ACRONYMS**

**DME** – Design Monitoring And Evaluation

**DMEO** – Design Monitoring And Evaluation Officer

**ICT** – Information And Communication Technology

**IT** - Information Technology

**M & E** – Monitoring And Evaluation

**NGOs** – Non Governmental Organizations

**PMIS** – Project Management Information System

**PMO** – Project Management office

**SPSS** – Statistical Package For Social Sciences

**WVT** – World Vision Tanzania

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

Project management information system is a set of procedures, equipment and other resources for collecting, analysing, storing, and reporting information that describes project performance. A PMIS provides information so the team has a common understanding of the facts: a prerequisite for collaboration. It's the cheapest way to gather information because it's only done once. It is the most reliable way to host information because many eyes scrutinize centralized data and mistakes are more likely to be found and corrected. It's a clear window into the project that leaders can use instead of relying on delayed or biased reports filtered through layers of management. It improves performance because it measures it; it's a report card for both team members and management and most important, it educates the team and makes better managers because it tells true stories (Thomsen, n.d).

Most projects of medium to high complexity use a project management information system (PMIS) for planning and coordination (Johnson & Liberatore, 1998). Project managers have traditionally used them to support the creation of sophisticated plans, including scheduling, resource management and project cost accounting (Riis et al, 1987). Their scope has broadened and the more sophisticated systems enable organizations not only to manage individual projects, but whole project portfolios as well.

Furthermore, vendors have added support for most phases of the project life cycle from the idea generation, to project risk and stakeholder management, to the management of created knowledge long after a project's conclusion

(Ahlemann, 2007).

When using the term PMIS, we draw on a wide understanding of project management, including project, programme and project portfolio management. Consequently, PMIS may not only address project managers but also other project stakeholders, such as team members, line managers, resource manager or project management office (PMO) staff. Accordingly, PMIS may have impacts on three different levels: (1) On an *individual level*, they may assist project stakeholders to carry out their project-management-related tasks. (2) On a *workgroup level*, PMIS may facilitate communication and collaboration between project team members. (3) Finally, PMIS may impact the entire organization, for example, by supporting investment decision-making as part of project portfolio management (*organizational level*).

These impacts are the result of a breadth of functionality offered by current PMIS, which cover the entire project life cycle and all management levels involved (Ahlemann, 2007).

Project performance enables project managers to track and monitor financial and schedule related performance for projects. Project managers need to monitor and control project to ensure completion within the scope of defined budgets,



forecast and schedules. Project performances are viewed in the areas of effort, cost, profitability, earned value, billing and collection or capital cost (Bonner, 2013).

Bonner further argued that, The PMIS should enable a project team to pinpoint the variances in terms of time, money and resources and see if they can find the reason why these have occurred. It should enable the team to track the status of each part of the project and assess the work that is completed and the work that remains to be done. When this information is available the project team will be able to reallocate the necessary resources to see that each part of the project contributes to the success of the project. It should be able to help the project leaders to assess the impact on the project from any future risks caused by time and cost overruns, and also to ensure that the quality of the project does not suffer. It should help the team to understand which of the parts of the project require revised guidelines and how they are to be implemented.

Musingafi (2011) pointed out that the most visible part of a project information system is the reported information. Project staff, outside organizations and the donor form opinions and make decisions based on the information reported by the project. A project therefore should strive for timely, comprehensive and understandable reporting mechanisms and formats.

## **1.2 Statement of the Research Problem**

PMIS provides the framework for collecting, organizing, storing, and processing project information. It provides the basis for assessing the status of the project with respect to time, cost, and performance goals and objectives. It also provides some sort of business intelligence on how the project contributes to the organization's

strategy and success. It enhances improving the project success by 75%. Hence quality and use of PMIS are highly essential.

Without using any PMIS software, engineers and project managers wouldn't be able to communicate project status adequately with functional departments and upper management as well. However, PMIS provides upper management with adequate information about all the projects in the organization's portfolio (Raymond & Bergeron, 2008).

Rogers (2014) argued that the fundamental purpose of a PMIS is to manage the flow of information between upper and lower management as well as the other stakeholders working on the project which finally results to minimize the allocation of time, money and man-hours spent to complete a project.

In WVT an NGOs dealing with community development, it uses PMIS a system which help them improving budget control and meeting project deadlines as well as a repository tool for project information and make it available to all of its stakeholders. The system is used from the beginning of the project that is from planning, executing till closing of each project. Despite the enforcement on the use of the system yet project's information has not been available on time as requested by key stakeholders and the information generated are not of good quality. That being the case the researcher wants to explore more on the use of PMIS to understand the contribution PMIS has towards the success of the projects.

### **1.3 Research Objectives**

#### **1.3.1 General research objective**

The general objective of this research is to understand the contribution PMIS has towards the success of projects.

#### **1.3.2 Specific research objectives**

1. To analyse the quality of PMIS
2. To analyse quality of information output by PMIS
3. To examine PMIS utilization level by project team

### **1.4 Research questions**

#### **1.4.1 General research question**

What is the impact of PMIS on project success?

#### **1.4.2 Specific research questions**

1. Does project management use quality PMIS?
2. Does PMIS provide quality information needed?
3. What is the PMIS utilization level by project team?

### **1.5 Relevance of the research**

This research will finally be of enormous help to several stakeholders. To mention few of them they include academicians who will use the findings to advocate on the impact of PMIS on project success. This study will be useful to project focused institution/organization, for WVT, it is a recommendation for improvement on the use of PMIS.

### **1.6 Organization of the Report**

This report is organised in chapters as follows: Chapter one explains the background and the statement of the problem in particular which has led to this prescribed study. Chapter two contains the literature reviews on what others have said about the similar or a little bit similar study, the methods used in their researches and comments, this chapter provides a helping hand on what is going to be archived in the study. Chapter three is about the research methodologies used in the study. This includes sampling and data collection methods and techniques used as well as data analysis strategy used. Chapter four presents data analysis while chapter five is all about recommendations, conclusions and limitations of the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Overview**

This research was intended to find out the contribution of project management information system towards the success of projects. Many organizations have implemented the use of PMIS in implementing their project. There are a lot of factors that contribute to the success of projects; in this case the researcher wanted to check specifically what role is played by PMIS to the project success.

#### **2.2 Conceptual Definitions**

##### **2.2.1 Project management information system (PMIS)**

Is a framework or an initiative that measures the success rate of a project and provides necessary information for monitoring and controlling the project (Bonner & Gundlach, 2013).

##### **2.2.2 Project**

According to PMBok (2000) project is a temporary endeavor undertaken to create a unique product, service, or result.

##### **2.2.3 Project success**

Project success refers to project meeting business requirements, delivered and maintained on schedule, delivered and maintained within budget, and deliver the expected business value and return on investment (Maryland, n.d).

### **2.3 Critical Review of Supporting Theories or Theoretical Analysis**

Raymond & Bergeron (2007) argued that at the technical level, the first element indirectly influencing the impact of a PMIS on project success is PMIS quality. The system's ease of use, flexibility, response time, learning ease and system integration play an important role in producing quality information, as perceived by the project manager. Indeed, PMIS quality is a strong predictor of the quality of information to be obtained from the system.

In the case of a higher-quality PMIS, the information output is more available, reliable, precise, comprehensive and secure. Conversely, a PMIS that produces information of poor quality would be a system that is more difficult to use, less flexible, and less integrated to other organizational information systems used by the project manager and other managers or employees. This means that project information quality requires sophisticated, well-serviced information systems. These findings support Pellerina et al (2013) who argued that, above a certain performance level, system utilization does not allow for the development of a distinct profile from the best-performing projects. Also, the performance of the projects appears to be linked to the usage time of the software: the more the software usage time increases, the better the CPI of the project is.

These two literature reviews speak the reality on the use of PMIS, if the system is not highly utilized its functions and capabilities will not be fully used. These systems are web based, for user to upload information and access the information the system has to be connected over the internet. Cultural change and adoption of new automated system is another concern to check in third world countries like Tanzania.

Duggal (2010) contributed that project managers are expected to manage the triple constraint and are often compelled to live in this triangle of time, cost and scope/quality.

The initial idea of the triple constraint was a framework for project managers to evaluate and balance these competing demands. It became a way to track and monitor projects. Over time, it has also become a *de facto* method to define and measure project success. While the triple constraint is important, it can also narrow the focus away from other crucial factors that lead to project success. Based on today's project environments, project managers need to broaden their perspective to include other criteria to satisfy stakeholders and deliver business results. While focusing on each of the triple constraint, the project manager has to reflect and make project decisions based on the achievement of the corresponding business outcome. Cost and time focus has to optimize business benefits like return on investment, net present value, etc., and benefits of faster delivery or time-to-market. Scope has to mirror end-user adoption, and overall quality has to be balanced with stakeholder/customer satisfaction (Duggal, 2010).

Most of organizations endeavour to employ ICT as a tool for competitive advantage for the accomplishment of the objective of organization as well as enhance the alignment between ICT and management strategy, (Mohammed, 2010). Accurate and timely data is a critical resource in planning and decision making (Acosta, 2004).

Contrary Powell and Dent-Micallef (1997) maintain that ICT alone does not provide sustainable competitive advantages: its use along with complementary human and organizational resources such as a flexible culture, the integration of ICT and the firm's strategy, is what allows firms to obtain competitive advantages. This further supported by (Gargallo-Castel & Galve-Górriz, 2007) who argued that, the need to increase and improve education and skills of workers to guarantee that firms can take full advantage of the ICT they have implemented is one of the questions that public authorities should take into account.

#### **2.4 Empirical Analysis of Relevant Studies**

Raymond & Bergeron (2007) did their research in Canada whose study was to empirically assess the quality of the PMIS presently used in organizations and to examine their impact on project managers and project performance. Analysis of data was done by likert scale where they confirmed the significant contribution of PMIS to successful project management. Improvements in effectiveness and efficiency in managerial tasks were observed here in terms of better project planning, scheduling, monitoring and control. Improvements were also observed in terms of timely decision-making. Advantages obtained from PMIS use are not limited to individual performance but also include project performance. These systems were found to have direct impacts on project success, as they contribute to improving budget control and meeting project deadlines as well as fulfilling technical specifications.



Similarly, Kahura (2013) did her research in Nairobi and seek to find the contribution of these information systems towards project success. The quality of the software, the quality of information output, the influence of the PMIS user on the project success was tested. Data were measured on a likert scale. The research found out that the use of the software to generate quality information needed by the user (project manager) to perform project tasks helped the project managers perform their tasks in a more professional manner thus increasing the success rate of the project. The three independent variables (quality of software, quality of information output and influence of the user) were transformed to get a single variable PMIS which had a strong and positive correlation (0.954) with the dependent variable (project success). It was therefore concluded that the use of PMIS helped in the achievement of the project success

Contrary Caniëls & Bakens (2011) did their research in Netherlands on the effects of PMIS on decision making in a multi project environment based on a survey among 101 project managers the interactions between six factors related to PMIS information quality and usage and their effect on decision making are examined in a multi project environment. Using structural equation modelling, new insights were gained in these complex relationships. Results indicate that the use of a project management information system is advantageous to project managers, while no adverse effects were observed due to project and information overload. PMIS information quality is positively related to quality of the decisions, satisfaction of project managers with PMIS and use of PMIS information.

Pellerina et al (2013), researched on project management software utilization and project performance in Canada. Statistical tests were performed using The Mann Whitney test (non-parametric test of differences in means) on the basis of quantified data resulting from 21 large engineering projects executed by the firm. The results show that the less-performing projects present significantly lower system utilization levels than the other projects. The performance of the projects appears to be linked to the usage time of the software: the more the software usage time increases, the better the CPI of the project is.

Similarly, project performance also seems to be related to the intensity of use of four software subsystems: Project definition, document control, cost management and construction activity management. The more intensively one or the other of these subsystems is used, the better the CPI of the project is.

Karim (2011) used regression analysis to examine PMIS factors: an empirical study of their Impact on project management decision making in United Kingdom and found that PMIS plays a part to project success events in each phase of the project life cycle. Thus, to facilitate manage decision making effectively; project managers should consider using the PMIS that corresponding the characteristics of phases and with qualified and highly professional decision makers in each phase of the project life cycle.

Nguyen (2012) did his research on critical factors affect users' intention of using Project Management Information System in Vietnam farmers' union. Using regression analysis the examined relationship of information quality, system quality and system complexity effects to intention of using PMIS.

This result makes an important contribution to making a strategy on project management for Vietnam farmers' union (VNFU) which implements various kinds of projects.

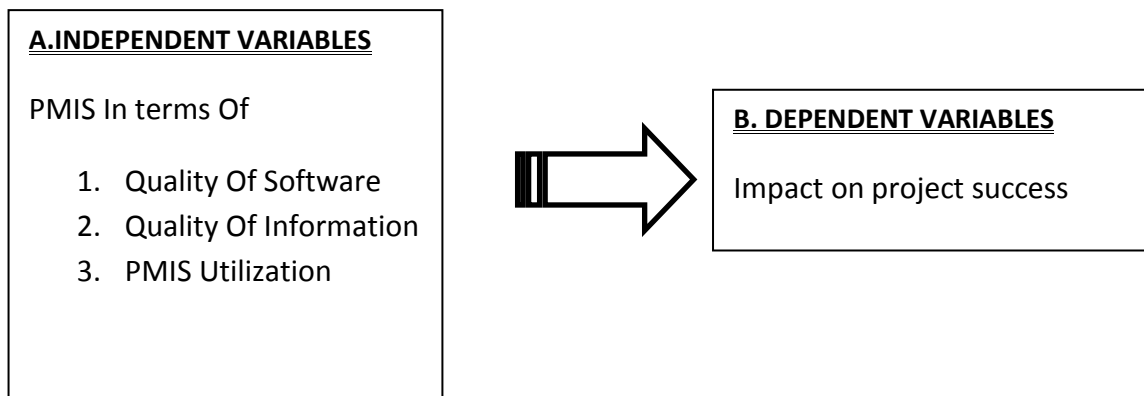
The above literatures by measuring different PMIS variables has shown that PMIS has led to success of Projects where by in this research report both qualitative and quantitative data analysis has been used to prove PMIS contribution to project success, by measuring both PMIS variables and project success variables which is quality.

## **2.5 Research Gap Identified**

From the empirical literature review two gaps were identified. Gap number one is that most of the literatures reviewed, their main focus and measurement factor were based on the independent variable which is PMIS and didn't go deep on measuring the project success variables whereby the researcher has measured project success in terms of achieving project deadline, quality and allocated budget. The gap number two observed by the researcher was that, most of the studies were done outside Tanzania and didn't focus on NGOs. This has been one of the reasons why the researcher has decided to go for it in the context of Tanzania through the selected NGO, world vision Tanzania. WVT has been selected by researcher as a study area a place where the researcher works and WVT uses PMIS for managing its projects.

## 2.6 Conceptual Framework

The current research considers figure 1 on how research variables are linked between independent, dependent variables (A & B respectively). The independent variables are derived from project management information system which are quality of software, quality of information and PMIS utilization by project team. The dependent variable is the project success. The Project success depends on the use of the PMIS and the quality information processed by the software.



**Figure 1: The Conceptual Framework**

Source: Modified from Kahura (2013).

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Overview**

This chapter expounds in detail methods the researcher used to conduct the study. It describes the research design, sampling procedures, sample size, type of data needed, collection methods and the analysis to be carried on.

#### **3.2 Research Strategy**

The researcher carried out a descriptive research as the research design. According to Robson, (2000), the purpose of descriptive research in (Sounders et al., 2004) is to portray an accurate snapshot of some aspects of particular individual or a group of people. The researcher used qualitative and quantitative research strategies. Qualitative approach is believed to be easy to understand for the majority of the audience which represents data in a narration whereas quantitative approach represents data in mathematical calculations, percentage and computations.

##### **3.2.1 Survey population**

Population refers to the people that the researcher had in mind from whom the researcher can obtain information. Population consists of individual or things or elements that fit a certain specification. The study is aimed at examining the impact of project management information system in project success. The respondents were the project managers and M & E officers working in WVT projects.

The researcher has considered the project managers since they are the daily implementers of organization projects, M&E officers since they are concerned with the monitoring and evaluation of the information sent to the system and the information generated by the system.

### **3.2.2 Area of the research or survey**

The researcher has chosen WVT which has 62 projects of which he selected all projects which WVT is covered national wide whereby the project success was analysed. The researcher has chosen WVT as a case study as it's the organization that he works in, and with that it was easier for him for data collection.

### **3.3 Sampling Design and Procedures**

Since it was difficult to survey all NGOs in Tanzania the projects as mentioned in 3.2.2 due to several barriers including financial constraints, purposive sampling has been applied in the study. According to Kothari (2004), in this type sampling items for the sample were selected deliberately by the researcher. This type of sampling was used in order to ensure that all project managers and design and monitoring officers in the selected projects are involved in the research. Below table shows the distribution of the sample.

**Table 3.1 Distribution of the sample**

Respondents	Questionnaires Distributed	Questionnaires returned	Percentage returned Questionnaires	Percentage Not Returned Questionnaires
Project Manager	62	45	72.6	27.4
DME Officer	30	19	63.3	36.7
TOTAL	92	64		

Source: Field Data (2015)

### 3.4 Variables and Measurement Procedures

Techniques selected are very familiar, common and easy to use. Variables have been gathered through Interview, questionnaires and by observation. To test the impact of PMIS on the project success, three variables associated with the PMIS were tested. These independent variables are quality of the software, quality of PMIS information output and the use of PMIS (Utilization). The model that was used to analyse data is Likert scale.

The impact of the PMIS on project success based on perceived contribution of the PMIS with regard to three performance criteria: respecting deadline, respecting budgets, respecting quality specification whereby five point likert scales was used for data analysis.

Collected data was coded and analysed using statistical packages for social sciences (SPSS) and all the analysed data was presented in graphs and tables as extracted from SPSS and excel

### **3.5 Methods of Data Collection**

The researcher in his study used three data collection methods/techniques. These are interviews, questionnaire and direct observations. They were used together to avoid the inherent weakness of using a single method of data collection and reach a conclusion on the findings very well. A big number of questions were closed ended questions where by the respondents were asked questions and they choose answers from suggested list by the researcher and a small number of questions as open ended that were more easily analysed and compared.

However, to avoid the missing more inputs on the same, informal conversational with respondents was also adapted to reduce the chance for predetermined questions in order to remain as open and adaptable as possible to the interviewee's nature and priorities.

### **3.6 Data Processing and Analysis**

The collected data was analysed by using qualitative and quantitative methods. The two methods were used to ensure that both qualitative and quantitative are given equal weight to give chance of elaborate the findings of one method with another method. Creswell (2003) highlights that all methods have limitations; therefore a combination of two are suggested.



The researcher used the following quantitative analysis techniques: data obtained from independent variables (quality of software, quality of information and PMIS utilization) was analysed using descriptive analysis and the dependent variable (impact of PMIS on project success) data obtained on this relationship was analysed by regression analysis. The collected data was edited, coded and summarized prior to analysis. Data analysis was done using statistical package for social sciences software (SPSS). The qualitative analysis also was used.

### **3.7 Validity of Data**

The data collection tools proposed actually measured and described what has been intended and considered accurate and precise. The validity of data was enhanced by clear composition of the questionnaire, pretesting of the questionnaire.

### **3.8 Reliability of Data**

The reliability of data was measured by the use of Cronbach alpha. And the analysis done in SPSS shows the reliability is 0.710

### **3.9 Limitations of the Study**

The researcher picked only 62 development projects within WVT and by considering only one Non-profit organization as a case study this might not bring the desired results on measuring the impact of PMIS on project success. It was difficult for researcher to do his research to other NGOs different from WVT and also to check on public sector due inadequate funds and time for research.

### **3.10 Results of the Study**

As expected by the researcher, there was a positive response from respondents since the study is so interesting and attractive to many people following the improvement of the PMIS to smoothen the tasks of project managers.

## **CHAPTER FOUR**

### **RESULTS AND ANALYSIS**

#### **4.0 Overview**

This chapter of the dissertation presents results and findings of the research. It begins by describing the general profiles and characteristics of respondents by gender, education, age and their roles in their hotels. This chapter also summarizes statistical results, general observations, and test of research null hypothesis. Data were collected using questionnaires and face to face interviews but also involved direct observations. Analysis is done using Statistical Package for Social Sciences (SPSS) software and Microsoft Excel.

#### **4.1 Respondents General Profile**

This section analyzed the general profiles of the project managers and DME officers based on gender and project duration. This part is useful since it reflects on the general characteristics of respondents, who were used to obtain the findings and so it helps to show in general which group of people understands and make use of PMIS in managing projects.

#### 4.1.1 Project manager general profile

##### 4.1.1.1 Project manager response by gender

The research captured respondents profile by gender for sampled project managers, from 62 Projects at WVT. Table 4.1 shows the gender profile distribution. 78% of respondent's are male and 22% of respondents are females, which represent 100% of gender profile of project managers responded the questionnaire. These results imply most of project managers are men, which relates to what was obtained by Kahura (2013) who did her research in Nairobi and seek to find the contribution of these information systems towards project success. Her results showed men who used PMIS was 85%.

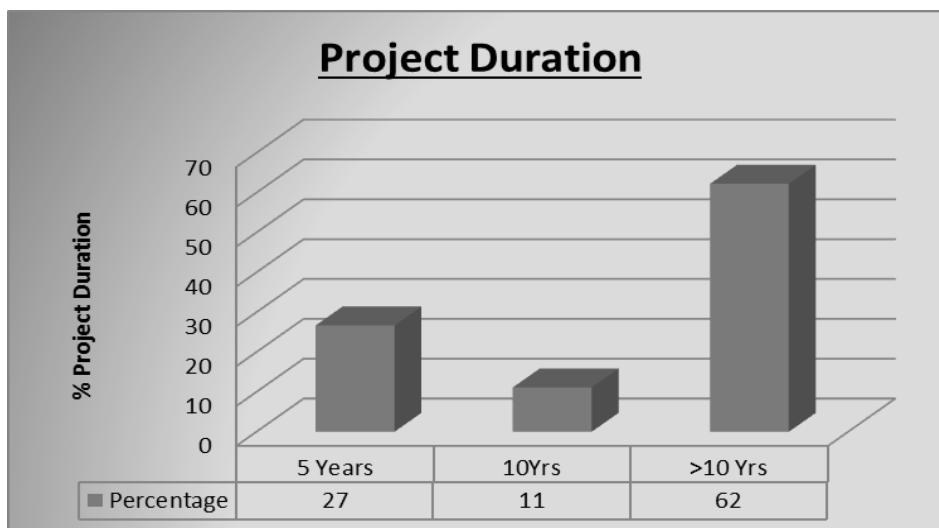
**Table 4.1 Project Manager gender distribution**

		<b>Frequency</b>	<b>Percent</b>
Valid	Male	35	78
	Female	10	22
	Total	45	100

Source: Field Data (2015)

#### 4.1.1.2 Project manager response by project duration

The research captured the respondent's project profile by project duration as grouped in figure 4.1 whereby 62% of the PM said their projects exist for more than 10 Years meanwhile only 27% Of the PM said they manage a five year project, and only 11% said their project last for ten years. This results show most of the projects duration are more than 10 years, this results implies that project managers are widely exposed in the management of those projects and have wide experience on the use of PMIS in managing projects, these results relates to what was found by Raymond & Bergeron (2007) who did their research in Canada whose study was to empirically assess the quality of the PMIS presently used in organizations and to examine their impact on project managers and project performance. Whereby more than 90% of their project duration is above 10 years.



**Figure 4.1 Project manager response by project duration**

Source: Field data (2015)

#### 4.1.2 DME Officer General Profile

##### 4.1.2.1 DME Officer response by gender

The research captured DME Officer respondent, profile by their gender in the sampled projects; Table 4.3 shows that, 63.2 % of respondents are males while females are 36.8%. Results obtained from DMEO show that men are still on the high percentage on the management and administration of projects, results which relates to was obtained by Kahura (2013) who did her research in Nairobi and seek to find the contribution of these information systems towards project success. Her results showed men who used PMIS was 85%.

**Table 4.2 DME Officer gender distribution**

	<b>Frequency</b>	<b>Percentage</b>
<b>Male</b>	12	63.2
<b>Female</b>	7	36.8
<b>Total</b>	19	100

Source: Field Data (2015)

## **4.2 Quality Of PMIS**

One of the key thing, the researcher was looking for is to make an analysis on the quality of the PMIS system that is used by World Vision Tanzania as a system used for managing Projects. The Project managers and DME officers responded to this assessment. Starting with project Managers the researcher found out results as summarized below.

### **4.2.1 Project manager's responses on quality of PMIS**

The quality of PMIS system was measured in six different characteristics which are response time, ease of use, ease of learning, accessibility, flexibility and system integration. Each characteristic was rated on five (5) point likert scale. It was found that PM rated 56% good on PMIS response Time, 42% rated good on PMIS ease of learning and 76% rated good for PMIS system integration but on other hand the remained three characteristics that is PMIS ease of use, accessibility and flexibility was rated very good in which each characteristics had more than 24% rated by PMs. In all the six characteristics there was no more than 16% project managers who said the quality of PMIS is poor or very poor.

With these results it depicts clearly that the quality of PMIS in all characteristics that were measured was acceptable by project managers it relates to what was found by Kahura (2013) that users felt that the software played an important role in the performance of their tasks and was also noted that the software played an important role in generating the information to be used in management of the projects.

**Table 4.3 Percentage project manager response on PMIS quality**

	Response Time	Ease Of Learning	Ease Of Use	Accessibility	Flexibility	System Integration
Very Poor	0	0	0	0	0	0
Poor	0	7	0	0	16	0
Good	56	42	76	49	33	71
Very Good	44	51	24	47	51	29
Excellent	0	0	0	4	0	0

Source: Field data (2015)

#### **4.2.2 DME Officer's Responses on quality of PMIS Software**

The quality of PMIS System was also measured in six different characteristics as it was measured in Project manager's response. Each characteristic was rated on five (5) point likert scale. Most of the respondents felt that the software had a good rating on both characteristics (response time, ease of use, ease of learning, accessibility, flexibility and system integration.) whereby 58% DME officers said PMIS is good at response time, 79% said PMIS is good at ease of learning, 68% said PMIS is good at ease of use, 58% said it is good at accessibility, 84% said PMIS is flexible while 47% rated good that PMIS has system integration. None of the respondent rated system being very poor, and not more than 16% of respondents on each characteristic rated poor. That being the case the results shows us that DME officers were in agreement that PMIS system is quality with respect to their daily activities.



Below table shows the results obtained from DME officers showing their acceptance level on the quality of PMIS.

**Table 4.4 Percentage DMEO response on PMIS quality.**

	Response Time	Ease Of Learning	Ease Of Use	Accessibility	Flexibility	System Integration
Very Poor	0	0	0	0	0	0
Poor	11	0	11	5	16	11
Good	58	79	68	58	84	47
Very Good	21	16	16	37	0	37
Excellent	11	5	5	0	0	5

Source: Field data (2015)

The above researcher results from both PMs and DMEO shows that the PMIS that is being used is of good quality that resulting to smooth handling of project information.

Above obtained results relates with what was found with Raymond & Bergeron (2007) that at the technical level, the first element indirectly influencing the impact of a PMIS on project success is PMIS quality.

The system's ease of use, flexibility, response time, learning ease and system integration play an important role in producing quality information, as perceived by the project manager. Indeed, PMIS quality is a strong predictor of the quality of information to be obtained from the system.

### 4.2.3 Project manager's responses on PMIS quality satisfaction

The researcher examined at what level project managers are satisfied with the quality of the PMIS they use. The researcher place five categories of satisfaction that is very low, low, neutral, high and very high. It was found that 93% of the project managers are highly satisfied with the quality of PMIS, below figures shows the results. This implies that if project managers are satisfied with this system they enjoy using it and in that case the system will yield the intended output on managing projects.

**Table 4.5 Project Manager Response on PMIS Quality Satisfaction**

	<b>Frequency</b>	<b>Percentage</b>
<b>High</b>	42	93
<b>Very High</b>	3	7

Source. Field data (2015)

### 4.3 Quality Of Information Produced

The second key thing, the researcher was looking for is to make an analysis on the quality of information output by PMIS system. Characteristics used on the measurements of quality of the information output are information availability, information relevance, information accuracy and information reliability.

DME officers responded to this assessment as shown in the figure below whereby majority of the respondents rated that information generated by PMIS is of good quality. 47% of DME officers rated that information availability is good, 53% said information accuracy is good, 63% said information reliability is good and 63% said information relevance is good. None of DME officers said information quality was very poor, while not more than 11% of DMEO who said the Information quality was Poor. The overall rating on Information Quality generated by PMIS is good; from this response it shows that user's comments on the information quality its intermediate not very good and not very poor. It gives picture that the information that is generated from system not all the time is available and at some point not very accurate. Obtained result relates with what was found by Kahura (2013) that 100% of the respondents felt that the quality of the information generated was good for the management of projects.

**Table 4.6 Percentage DME Responses on PMIS Information Quality**

	Info Availability	Info Relevance	Info Accuracy	Info Reliability
Very Poor	0	0	0	0
Poor	5	0	11	5
<b>Good</b>	<b>47</b>	<b>63</b>	<b>53</b>	<b>63</b>
Very Good	32	26	26	21
Excellent	16	11	11	11

Source. Field data (2015)

#### **4.4 PMIS Utilization**

The third key area, the researcher was looking for is to examine PMIS utilization by project team. Measuring PMIS utilization, researcher examined how often the system has been used by project team on several function of the system, also he examined if users of the system has been trained enough to get to use the system and also know at what level are they satisfied with the use of the system. These areas were analyzed in both Project managers and DME officers.

##### **4.4.1 Response on PMIS System Training**

Response obtained from DME Officers it shows 89% of all DME officers who responded said they were well trained and the training gave them the confidence on using it. Response obtained from Project Managers, shows 73% of project managers responded been given training and are confident on the use of PMIS. Staff who are well trained on the system that they use in their day to day activities results to greater performance and achieve the intended goals. These findings support Pellerin at al (2013) who said, “Our observations show that lack of training is a common reason for bringing users to work with parallel systems.” Users who works with parallel system means they waste a lot of time to get bigger results

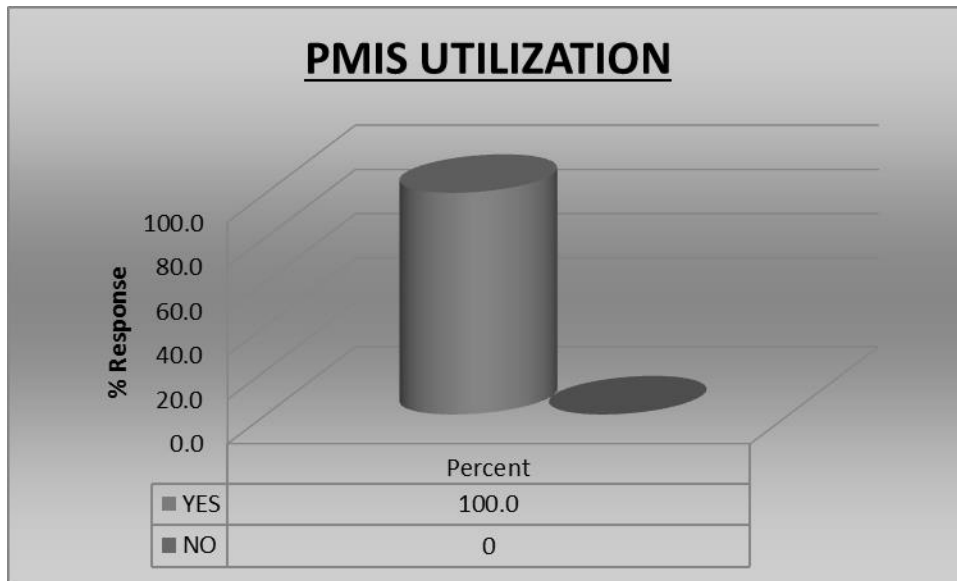
**Table 4.7 Percentage Of PM & DME officers response on PMIS training**

	<b>PM</b>	<b>DME</b>
<b>YES</b>	73	89
<b>NO</b>	27	11

Source: Field Data (2015)

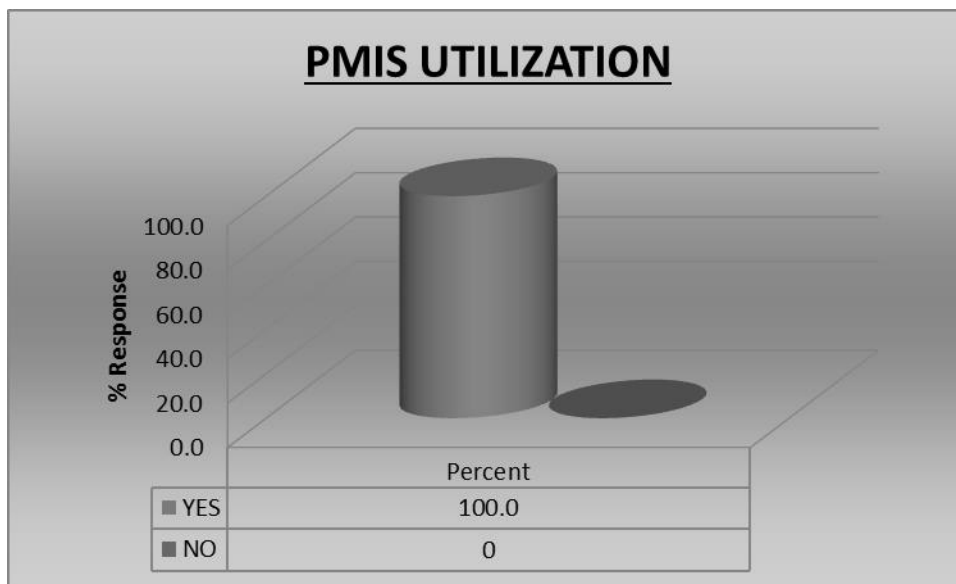
#### **4.4.2 Response on PMIS utilization**

Response obtained from Project Managers show that all of project managers responded on that question agreed that they use PMIS on their day to day activities. On the other hand DME officers responded on the same question of the use of PMIS, all responded that they use PMIS as a tool to manage their projects. Since the system is been used by users this implies that there is high performance towards project success. These findings relates to Kahura (2013) All the respondents agreed that their task performance had improved with the use of the software. Decision making process had improved due to the timely availability of quality information needed for making the decision. In general all DMEO and PM have been good users of PMIS.



**Figure 4.2 Project Managers Response on PMIS Utilization**

Source. Field data (2015)

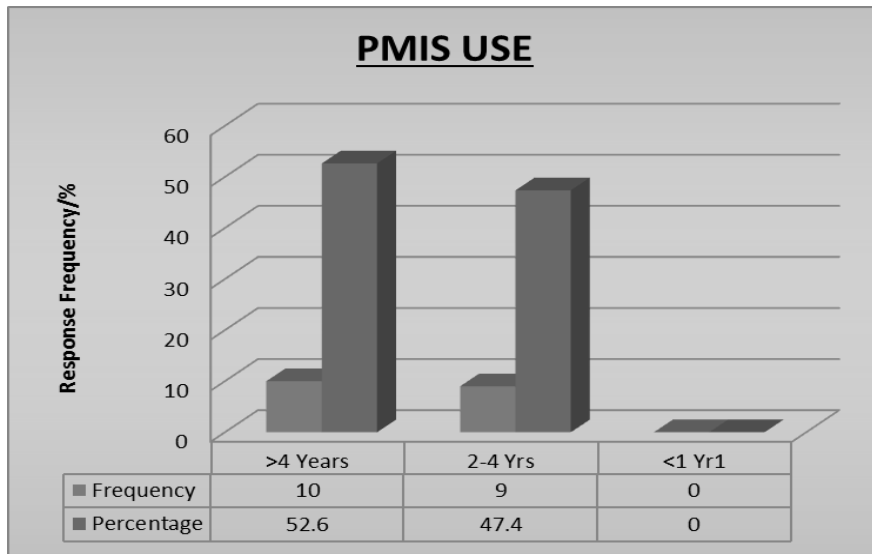


**Figure 4.3 DME officers response on PMIS utilization**

Source. Field data (2015)

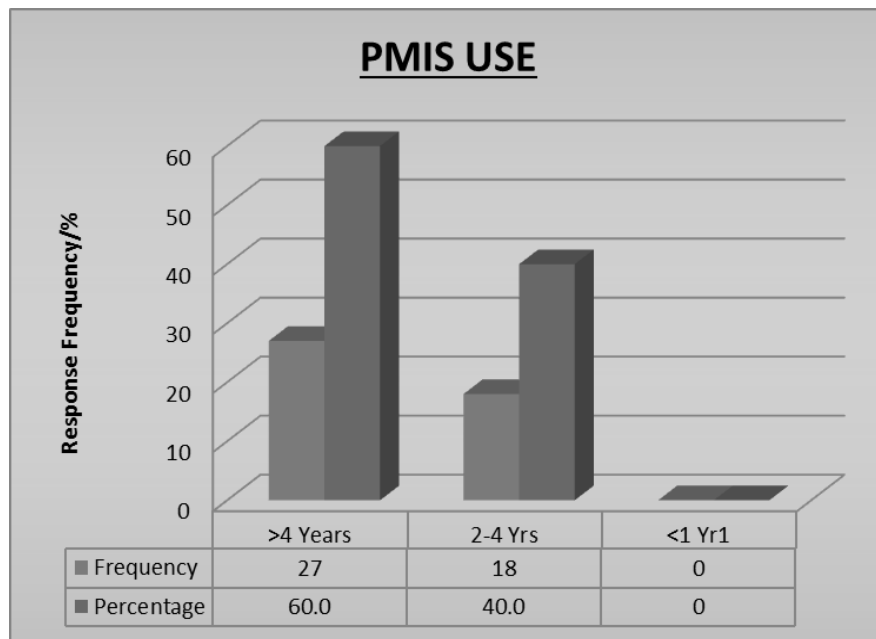
#### **4.4.3 Response on PMIS duration of use**

Researcher also requested response from PMs and DMEO on the duration on the use of PMIS, response obtained from DMEO showered that 52.6% of the respondents said they have used PMIS for more than 4 years while the rest of the respondents said they have used PMIS between 2 to 4 years. This shows that DMEO have vast experience on the use of the System. On the other hand response obtained from Project Manager, shows that 60% project managers said they have been using PMIS for more than 4 years 40% respondents said they have used between 2 to 4 years. That being the case Both DMEO and PMs has highly been exposed on the use of PMIS, this has been of helpful on their daily management of projects. Above findings narrates what was found by Raymond & Bergeron (2007) that the use of a PMIS by project managers increases their productivity, effectiveness and efficiency in decision making due to the quality of the information output by the PMIS. Below figures show the results obtained from both respondents.



**Figure 4.4 DME response on PMIS usage duration**

Source. Field data (2015)



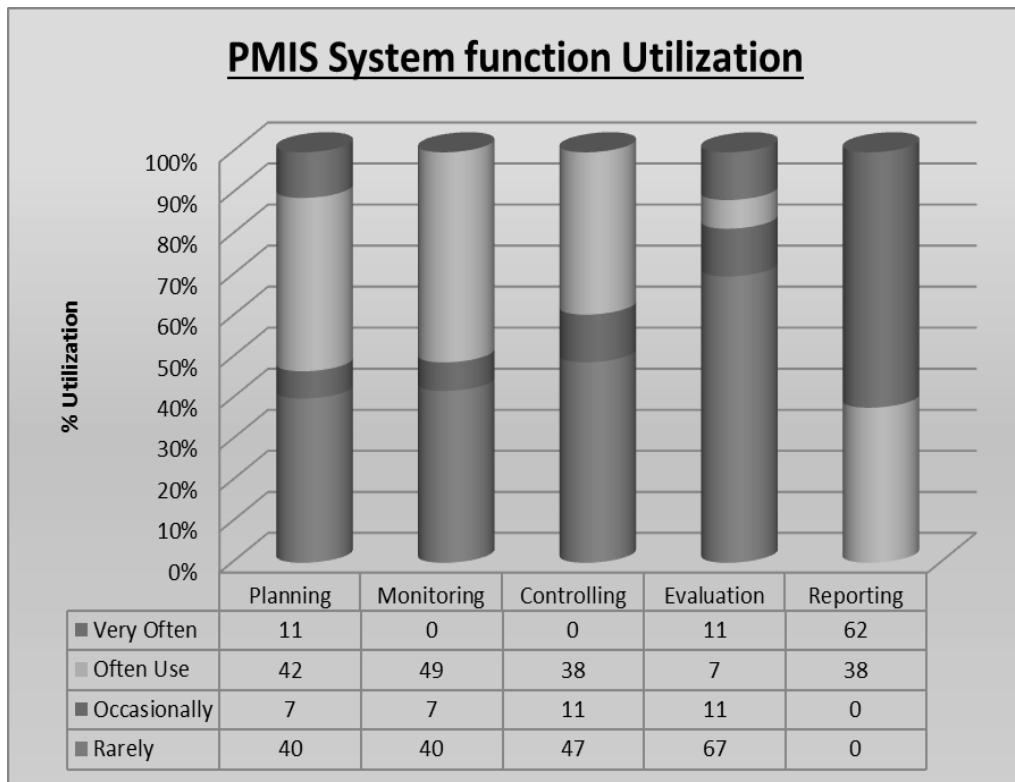
**Figure 4.5 PM response on PMIS usage duration**

Source. Field data.



#### **4.4.4 Response on PMIS function utilization**

PMIS has several functions like planning, monitoring, evaluation, control and reporting where by the researcher examined how often these functions are used by both project managers and DME officers. The functions were measured in a Likert scale in a range of very often use, often use, rarely use and occasionally use. From response obtained by project manager it shows reporting function is the one which is very often used in reporting the progress of their projects which is 62% of all the project manager response. Other functions like planning is often used by 42%, monitoring used by 49%. Control and evaluation function 47% and 67% rarely used respectively. Below are the results obtained from Project Managers. Reporting function has been rated high or very often used as this function is the main way for project managers to give out the progress of project reporting the status of their budget and the timeline of the project.

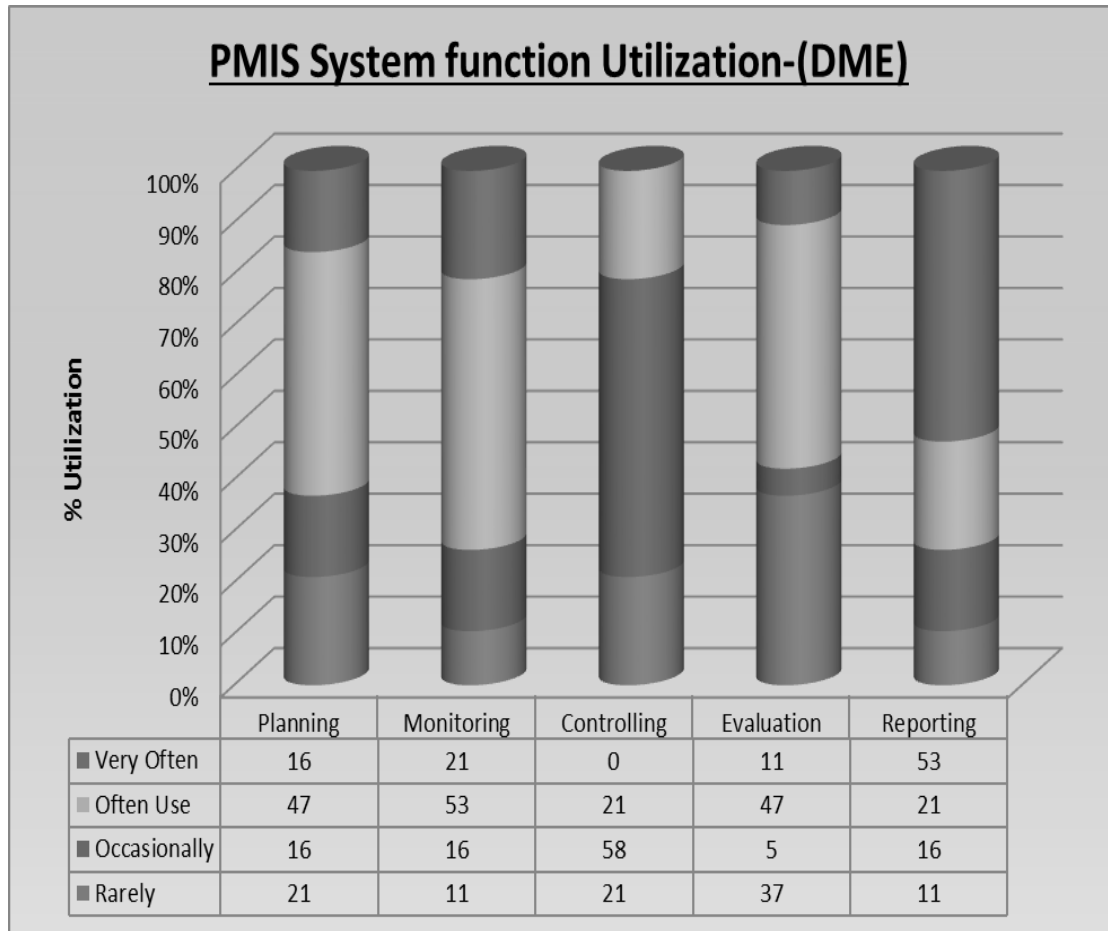


**Figure 4.6 PM response on PMIS function utilization**

Source. Field data (2015)

On the other hand response obtained from DME officers shows that 47% of all DME Officers often use PMIS for planning purposes. Another PMIS function that is often used by DME officers is Monitoring whereby 53% of all DME officers responded to that question. The controlling function is often used by 58% that's response from 11 DME officers, evaluation function has been used by 47% and last function which has been very often used by DME officers is reporting function where by 53% replied.

This obtained results implies that monitoring, controlling and reporting are the tools that are used often by DMEO in their day to day activities on the management of projects as they have more than 50% of all the responses.

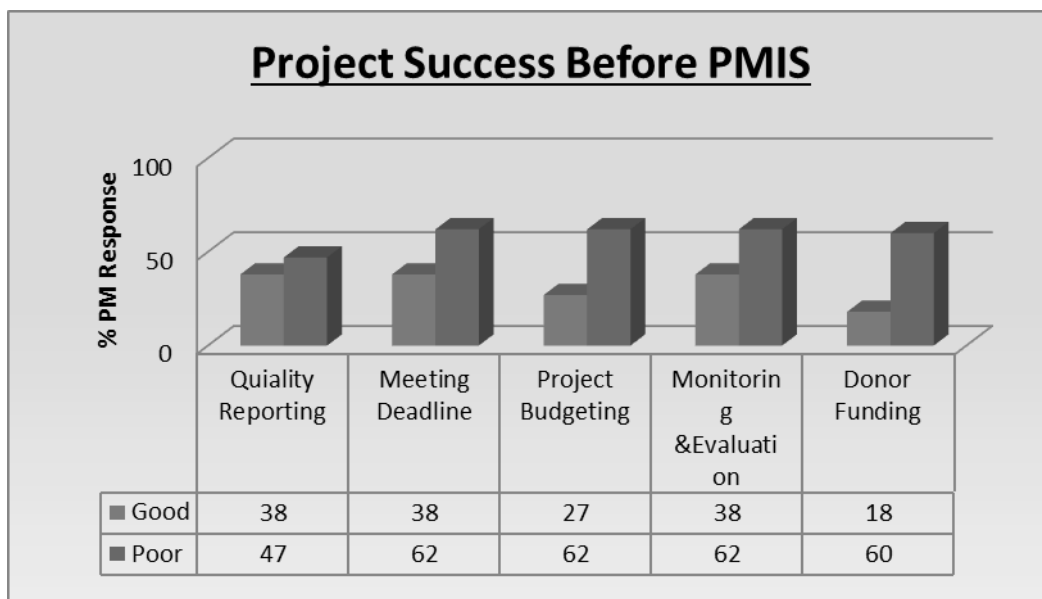


**Figure 4.7 DME responses on PMIS function utilization**

Source. Field data (2015)

#### **4.5 Project Success**

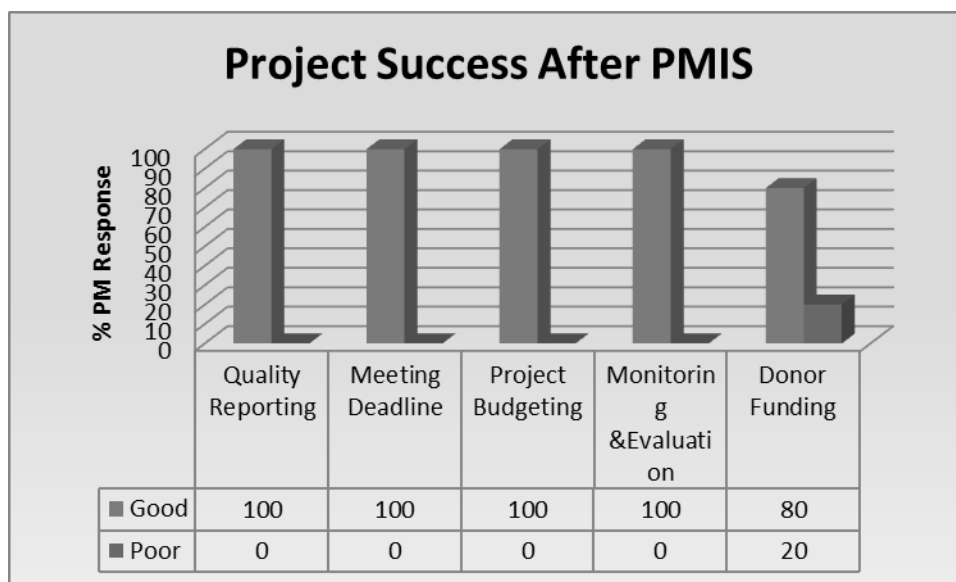
In this study the dependent variable that the researcher did investigate on, is Project Success. In this variable the researcher was checking how good or poor are several project success areas before the use of PMIS and after the use of PMIS, these areas are quality of report submitted, meeting project deadlines, meeting project budget, monitoring and evaluation and donor funding. Response obtained from project managers on project success before the implementation of PMIS shows that 47% of the respondents said before the implementation of PMIS quality of report was poor, 62% said before the implementation of PMIS it was hard to meet deadlines, 62% said there was poor project budgeting, 62% said there was poor M&E and 60% said there was poor donor funding. These results show that the management of project with the manual system of reporting, handling project budget etc was very difficult and hence there were no good results on project success. This is in agreement with what was said by Raymond & Bergeron (2007) that these systems were found to have direct impacts on project success, as they contribute to improving budget control and meeting project deadlines as well as fulfilling technical specifications. Below figures depicts well the results.



**Figure 4.8 PM response on project success before the use of PMIS**

Source. Field data (2015)

The same project success areas were measured after the use of PMIS, and the results were much more different from when PMIS was not used. All PMs' making 100% said quality of reporting, meeting project deadline, project budgeting and M&E was good, while 80% rated good on donor funding. The use of automated system for managing projects has been helpful to project managers and DMEOs as it simplifies their work and yielded higher results and quick decision making towards project success. These findings support the findings of Raymond & Bergeron (2007) that these systems were found to have direct impacts on project success, as they contribute to improving budget control and meeting project deadlines as well as fulfilling technical specifications



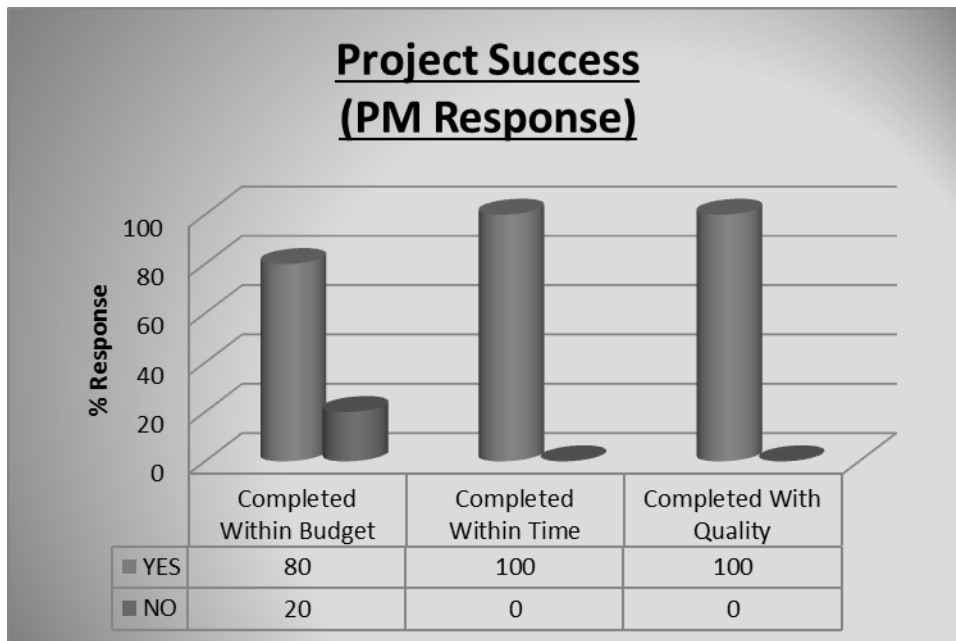
**Figure 4.9 PM response on project success after the use of PMIS**

Source. Field data (2015)

#### **4.5.1 Project success- Triple Constraints**

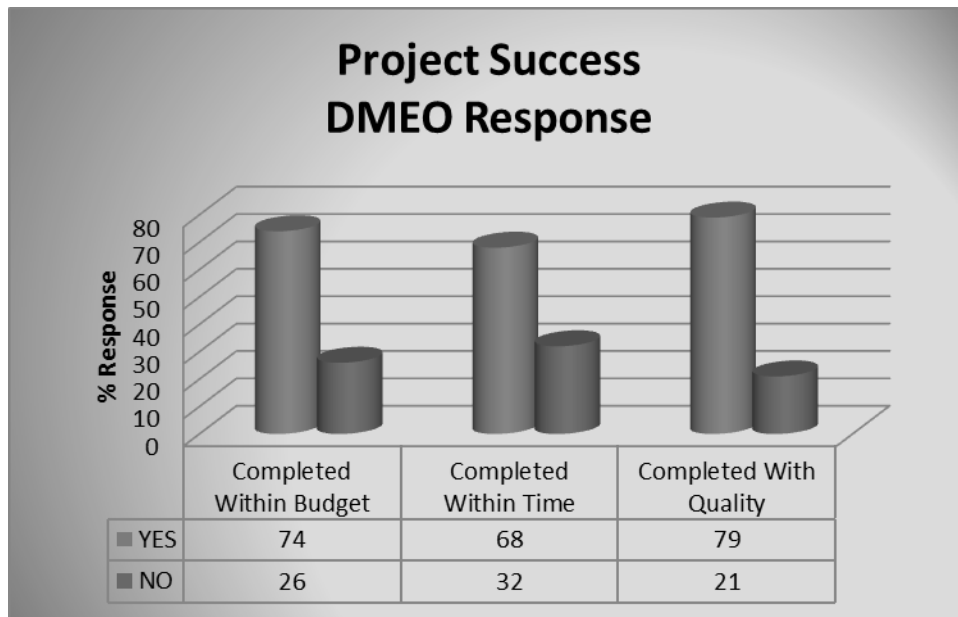
Project success was also measured in terms of project completed within budget, project completed within time and achieved project quality. The researcher set this question with a Yes/No response to both project manager and DME officers. 100% project managers responded with YES to project Completed within time, project completed with quality and only 80% responded that project was completed within budget. For response obtained from DME officers, only 74% agreed that project were completed within budget, 68% agreed that project were completed within time and 79% responded that it achieved project quality. Obtained results shows that, all project were successful as they met all the three triple constraints factors that is the budget of the project and time frame of the project they were all managed by PMIS that's why the project were successful.

These findings supports the findings of Kahura (2013) that, project performance improvement like staying within the project budget, timeline and quality specifications may be achieved through the use of the system by the user to perform project tasks.



**Figure 4.10 PM response on project success.**

Source. Field data (2015)



**Figure 4.11 DME Response on project success.**

Source. Field data (2015)

#### **4.6.1 Challenges faced when using PMIS**

Both DMEO and PMs were asked to give out several challenges they face on their day to day usage of PMIS. This was an open ended question with multiple answers and each respondent gave out their opinions. Researcher compiled the feedback into groups and found that internet connection has been the leading challenge to both PMs and DMEO. 82% of DMEO said poor internet connection has been a big challenge, followed by five 45% of respondent who said system failure has been the second leading challenge on the use of PMIS.



On the other hand response from PMs showed that the leading challenge is internet connection, where by four 47% of all PMs who responded on the same question gave those feedbacks, followed by 38% of respondents who said the second big challenge is system failure. Below figures depicts the results. From above mentioned challenges it tell us that project management system as one of information system if its surrounding environment that makes its run smooth are not well prepared, not well emphasised and maintained system will not be running well. Also since this is an online system organization has to ensure internet connection is up all the time failure to that, system users will always face challenge on usage.

**Table 4.8 Percentage DME response on PMIS challenge**

<b>Challenges</b>	<b>Percentage (%)</b>
Poor Internet Connection	82
System Failure	45
Lack Of Information	27
Incurate Information	18
Less Training	18

Source. Field data (2015)

**Table 4.9 Percentage Of PM response on PMIS challenge**

<b>Challenges</b>	<b>Percentage (%)</b>
Poor Internet Connection	47
System Failure	38
Less Training	16

Source. Field data (2015)

#### **4.6.2 Recommendation on PMIS Improvement**

The researcher also needed to get feedback from project managers and DME officers on their recommendation for improvement of PMIS and the surrounding environment for smooth running of the project management. DMEO recommended that PMIS should be more user friendly, all the modules associated should be easily used and integrated to each other. Furthermore they said there should be improvement in internet connection, PMIS system capacity to be improved to hold much information. On the other hand project managers added that More Capacity building to be done on the use of PMIS. Below figures shows the order of the recommendation from both DMEO and PMs.

This implies that since PMIS is a web based database system whereby project managers and DME officer can post their reports and make monitoring respectively, there should be guaranteed and uptime of internet connection throughout. Also since users are not technological knowledgeable, system should be made as simple as it can be to easier and quicken the process and time to time training should be made to staff.

**Table 4.10 Percentage Of DME response on PMIS improvement**

<b>Recommendation</b>	<b>Percentage (%)</b>
Improve Network Connectivity	47
Improve System Capacity	29
Make System User Friendly	12
Test System Modules	12
Increase Capacity Building	45

Source. Field data (2015)

**Table 4.11 Percentage Of PM response on PMIS improvement**

<b>Recommendation</b>	<b>Percentage (%)</b>
Increase Capacity Building	47
Improve Network Connectivity	29
Improve System Capacity	12
Make System User Friendly	12

Source. Field data (2015)

## **CHAPTER FIVE**

### **CONCLUSION AND RECOMMENDATION**

#### **5.1 Overview**

This chapter provides a summary of the findings in the conclusion and recommendation to PMIS users. This study revealed that the system that has been used for managing projects-PMIS was of good quality and the information generated by the PMIS was of good quality too, PMIS users (PMs & DMEO) have well been trained on the use of the PMIS and are very confident on the use of the system that's finally PMIS has been of great success factor toward project performance. The study further revealed that PMIS has been a tool which has enhanced positively on the success of Projects.

#### **5.2 Summary of Findings**

The aim of this study was to examine the impact of PMIS on project success. More specifically the study aimed at analyzing the quality of PMIS software, analyze the quality of information output by PMIS and examining PMIS utilization level by project team.

The study employed a simple survey technique, whereby responses obtained from DMEO and PMs from 45 World Vision Projects in 10 Regions at Tanzania. Primary data through questionnaires was analyzed using statistical package for social scientists (SPSS) and Microsoft excel.

The results were presented using frequency distributions to discuss the impact of each independent variable on dependent variable

### **5.2.1 Quality of PMIS software**

The research findings confirmed that the quality of PMIS used by Project Managers and DMEO is good, as all function that was in the system was well used by project team and were highly satisfied with its operation.

### **5.2.2 Quality of information output by PMIS**

It was found that the information generated by the PMIS was of good quality, Project managers and DMEO acknowledge that the consistency and trustworthiness (Reliability) of the information generated from PMIS was a very key factor in performing their tasks in a much professional manner. From interview done to DME Officers revealed that their work at high percent depended on the information that has been placed in the PMIS that help them to make evaluation of projects and end hence come up with proper decisions.

### **5.2.3 PMIS utilization level by project team**

Furthermore it was found that all PMIS users (PMs & DMEO) have well been trained on the use of the PMIS and are very confident on the system, all respondents have been exposed on the system for more than two years, this gave them a wide experience with the system.

PMIS has several Functions but of all the mostly used function is reporting, highly used by PMs on day to day reporting and giving project development status.

With DMEO the mostly used is monitoring and planning, the information available on the system which has been uploaded by PMs helps DMEO to monitor the progress of projects and the information help them on planning for future projects.

#### **5.2.4 Project success**

The research findings confirmed PMIS has been of great success factor toward project success as before the organization has implemented this automated system projects struggled to meet deadlines, there was poor project planning, poor M&E and low donor funding. But after the organization started using PMIS there has been abruptly change and hence resulted in quality reporting, project meeting deadlines, good project budgeting etc. Also in terms of project triple constraints it is concluded that PMIS has resulted in timely accomplishment of projects, Project performed within planned budget and the quality output of the project was achieved.

#### **5.3 Conclusion**

From the findings it can be concluded that well trained PMIS users have the capacity to utilize effectively the system which is of good quality and ensure proper input of the information which will lead to quality decision making by management and hence results to successful projects.

#### **5.4 Recommendations**

PMIS has been a tool which has enhanced positively on the success of projects. It is recommended that:-

- Organizations should adopt the use of PMIS in the management of their projects. PMIS guarantees better management of project since it generates quality information needed for the management of the project. The environment for smooth running of the system should highly be prioritized.
- More emphasis to be placed on user capacity building and on each system module that will be developed as an update to the system users should be well informed on it. Lastly since PMIS is an online web-based system network infrastructure should be highly improved.

#### **5.5 Directions for Future Studies.**

Although this study provides insight into the use of project management software and its relationship with project success, it has some limitation. This study covered one non-government organization and only 45 Projects responded which might not have the desired results on measuring the impact of PMIS on project success, the researcher recommends future studies to widen the area of research and to survey what is been done by government/public sector projects.

Also since project management information system is not the only factor that leads to project success the study did not go deep in seeing other factors that lead to project success. Researcher recommends future studies to investigate other success factors towards project success.



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## **APPENDICES**

### **QUESTIONNAIRES**

#### **Appendix 1. Project Managers questionnaire**

Dear respondent

The researcher is a student of The Open University of Tanzania (OUT) undertaking Masters Degree in Project Management, conducting a research on the “**Impact of Project Management Information System in Project Success**”. It is compulsory to conduct a research paper during the second year as a partial fulfillment of the course. Be assured that all information to be obtained from you will be used for academic purposes and treated confidentially not otherwise.

#### **Basic Information**

Date\_\_\_\_\_

Project Name \_\_\_\_\_

Project Duration\_\_\_\_\_

Your Gender; Male [  ] Female [  ]

There are several answers next to each question. Answer each question by ticking in the square drawn next to each answer.

**Question 1**

Do you use PMIS for Managing Projects?

YES

NO

**Question 2**

If your answer above is YES, for how long have you been using PMIS?

More than Four Years

2 To 4 Years

Less than 1 Year

**Question 3**

Does the training acquired give you enough confidence on using the system?

YES

NO

**Question 4**

Which of the following PMIS Functions do you use in your day to day project management?

Planning Function	<input type="checkbox"/>
Monitoring Function	<input type="checkbox"/>
Controlling Function	<input type="checkbox"/>
Evaluation Function	<input type="checkbox"/>
Reporting Function	<input type="checkbox"/>

**Question 5**

Of the Function selected above, how often do you use them?

<b>PMIS Function</b>	<b>Rarely Use</b>	<b>Occasionally Use</b>	<b>Often Use</b>	<b>Very Often</b>
Planning				
Monitoring				
Controlling				
Evaluation				
Reporting				

**Question 6**

Measuring the Quality of the PMIS. Tick appropriate measure for each PMIS Quality category.

<b>Quality Categories</b>	<b>Very Poor</b>	<b>Poor</b>	<b>Good</b>	<b>Very Good</b>	<b>Excellent</b>
<b>Response Time.</b> <i>(Time it takes to respond to a given command)</i>					
<b>Ease Of Use</b> <i>(user friendly)</i>					
<b>Ease Of Learning</b>					
<b>Accessibility</b>					
<b>Flexibility</b>					
<b>System Integration</b> <i>(links more than one function tool)</i>					

**Question 7**

What is your satisfaction level with PMIS quality?

Very Low	<input type="checkbox"/>
Low	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
High	<input type="checkbox"/>
Very High	<input type="checkbox"/>

**Question 8. Project success/ impact of PMIS**

How poor or good are below project success areas can be compared before and after the use of PMIS

<b>Before PMIS</b>	<b>After PMIS</b>	
	<b>POOR/GOOD</b>	<b>POOR/GOOD</b>
Quality Of Report Submitted		
Meeting Deadlines		
Project Budgeting		
Monitoring & Evaluation		
Donor funding (amount)		



**Question 9.** With reference to recent completed projects, did quality, budget and time factor achieved at completion?

<b>Project Success In Terms Of</b>	<b>YES/NO</b>
Completed Within Budget	
Completed Within Time	
Achieved Project Quality	

**Question 10.** What challenges you face when using PMIS?

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**Question 11.** What should be done so that PMIs will yield higher performance?

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## Appendix 2. DME Personnel questionnaires

Dear respondent

The researcher is a student of The Open University of Tanzania (OUT) undertaking Masters Degree in Project Management, conducting a research on the “**Impact of Project Management Information System in Project Success**”. It is compulsory to conduct a research paper during the second year as a partial fulfillment of the course. Be assured that all information to be obtained from you will be used for academic purposes and treated confidentially not otherwise.

### Basic Information

Date\_\_\_\_\_

Project Name \_\_\_\_\_

Project Duration\_\_\_\_\_

Your Gender; Male [ ] Female [ ]

### Question 1

Do you use PMIS for DME Purposes?

YES

NO

**Question 2**

If your answer above is YES, for how long have you been using PMIS?

More than Four Years

2 To 4 Years

Less than 1 Year

**Question 3**

Does the training acquired give you enough confidence on using the system?

YES

NO

**Question 4**

PMIS Function, how often do you use them?

<b>PMIS Function</b>	<b>Rarely Use</b>	<b>Occasionally Use</b>	<b>Often Use</b>	<b>Very Often</b>
Planning				
Monitoring				
Controlling				
Evaluation				
Reporting				

**Question 5**

Measuring the Quality of the PMIS. Tick appropriate measure for each PMIS Quality category

<b>Quality Categories</b>	<b>Very Poor</b>	<b>Poor</b>	<b>Good</b>	<b>Very Good</b>	<b>Excellent</b>
<b>Response Time.</b> <i>(Time it takes to respond to a given command)</i>					
<b>Ease Of Use</b> <i>(user friendly)</i>					
<b>Ease Of Learning</b>					
<b>Accessibility</b>					
<b>Flexibility</b>					
<b>System Integration</b> <i>(links more than one function tool)</i>					

**Question6**

For quality Monitoring and Evaluation of Projects it depends on the quality information uploaded in the system by Project Managers. Rate the quality of information uploaded in the system.

<b>Information Quality</b>	<b>Very Poor</b>	<b>Poor</b>	<b>Good</b>	<b>Very Good</b>	<b>Excellent</b>
<b>Availability</b> ( <i>at disposal when needed</i> )					
<b>Relevance</b> ( <i>appropriate to the matter at hand</i> )					
<b>Accuracy</b> ( <i>Correctness</i> )					
<b>Reliability</b> ( <i>sound and dependable</i> )					

**Question7.** With reference to recent completed projects, did quality, budget and time factor achieved at completion?

<b>Project Success In Terms Of</b>	<b>YES/NO</b>
Completed Within Budget	
Completed Within Time	
Achieved Project Quality	

**Question 8.** What challenges do you face when using PMIS?

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**Question 9.** What should be done so that PMIs will yield higher performance?

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**THANK YOU FOR YOUR RESPONSE**