The Role of Project Management Office (PMO) Functions on the Success of Information Technology (IT) Projects: The Case of Bank of Abyssinia in Addis Ababa

By: Rediet Getahun Teffera

A Research Project Work Submitted to Project Management Program Presented in Partial Fulfilment of the Requirements for Masters of Arts Degree in Project Management

Advisor: Fesseha Afework (Ph.D.)

Addis Ababa University School of Commerce
Addis Ababa, Ethiopia
June, 2021.

Declaration

I, the undersigned, hereby declare that the work contained in this Research Project Work entitled "**The Role of Project Management Office (PMO) Functions on the Success of Information Technology (IT) Projects: The Case of Bank of Abyssinia in Addis Ababa"** is my own original work and that I have not previously in its entirety or in part submitted at any university for a degree.

Rediet Getahun _____ _____

Candidate Name Signature Date

Addis Ababa University
College of Business and Economics
School of Commerce

Certification

This is to Certify that the Research Project Work prepared by **Rediet Getahun** entitled: **"The Role of Project Management Office (PMO) Functions on the Success of Information Technology (IT) Projects: The Case of Bank of Abyssinia in Addis Ababa**" submitted in **partial fulfilment of the requirements for the degree of Master of Arts in Project Management** complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the Examining Committee:

Examiner: _____ **Signature:** _____
Date: _____

Examiner: _____ **Signature:** _____
Date: _____

Advisor: _____ **Signature:** _____
Date: _____

Abstract

The main objective of this research was to examine the role of Project Management Office (PMO) and its functions on the success of Information Technology (IT) projects at Bank of Abyssinia (BoA) in Addis Ababa. The study assessed the rate of IT project success after the bank founded its PMO and the values PMO added to the organization. To assess the PMO's impact in detail, the research investigated the PMO functions and roles that contribute to the success of IT projects. A relationship between IT project success as a dependent variable and five PMO functions as independent variables was conceptualized. The five PMO functions are monitoring and controlling project performance, developing of project management competencies & methodologies, multi-project management, strategic management, and organizational learning. IT project success was measured with four constructs, which are, the triple constraints (cost, time, scope), product/system quality, user satisfaction, and organization benefit. The research employed a mixed research method. The quantitative data was collected through a self-administrated questionnaire based on a five-point Likert scale which was distributed to 60 respondents, out of which 50 responded. A semi-structured interview was utilized to gather qualitative data from 3 PMO staff members. Descriptive statistics and a paired-samples t-test were used to analyze the before-and-after effect of PMO on IT project success. Additionally, descriptive statistics and linear regression were used to determine the level of contribution and significance of each PMO function on IT project success. The quantitative data were processed using the SPSS tool and the qualitative data was analyzed using thematic content analysis. The findings revealed that before the establishment of PMO, IT project success was poor, with projects failing to fulfil requirements and achieve organizational goals. However, once PMO was implemented, it improved the rate of IT project success by reducing cost overruns, increasing customer satisfaction, enhancing end-product quality and improving financial growth of the bank. The other finding is that, out of the five PMO group functions, multi-project management contributes the most to success of IT projects. While, organizational learning function contributes the least to IT project success. Finally, as a result of the findings, it is suggested that the bank enhances its investment in PMO. In addition, to increase the success of IT projects, 16 specific activities under the five PMO functions are recommended as best practices.

Key words: Project Management Office (PMO), IT Project Success, PMO Function

Acknowledgments

First and foremost, I am eternally grateful to the Almighty God. Secondly, I would like to thank Dr. Fesseha Afework, my advisor, for his consistent and helpful advice and feedback. I would like to send my deepest gratitude to Bank of Abyssinia PMO staff and project managers for taking the time to complete the questionnaire and for their excellent cooperation throughout the interview process. I would also like to thank my family and friends for their support throughout the research process.

Table of Contents

List of Figures

List of Tables

List of Abbreviations

BoA – Bank of Abyssinia

IT – Information Technology

PMI - Project Management Institute

PMO – Project Management Office

PO – Project Office

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study

Projects, nowadays, have become highly significant in ensuring the competitive advantage of an organization (Ofer and John, 2009). Projects are able to create a product that's a new item or part of another item, a service such as a functional unit that supports production in a company, or a document that develops knowledge (PMI, 2008). Therefore, when an organization carries out projects, new products, services, and processes are assured. (Sabahi and Parast, 2020). These outputs of projects can only be achieved when the projects to be undertaken are performed within well-defined objectives and resources. Thus, projects can be defined as unique activities with a defined beginning and end that intend to accomplish a certain objective within specified resources, which are cost, time, and quality (Pinto and Slevin, 2007).

Among the different kinds of projects, Information Technology and Systems (IT/IS) projects have become important to accommodate the fast-growing and modernized business (Karlsen et al., 2005). An organization improves its realization of performance and competitive advantage by embedding Information Technology in its daily processes and activities (Marnewick, 2015). Information technology (IT) is the usage of networks and computers to transmit, receive, store and manipulate data. (Nureni, 2014).

The temporary and unique project activities are managed with an application of certain skills, knowledge, tool, and techniques. This is called Project Management (PMI, 2008). The effective implementation of project management tools, techniques, principles, practices, and methodologies is overseen and managed by an entity known as Project Management Office (PMO) (Dai and Wells, 2004). Organizations nowadays entrench a PMO in their work environment to foster the delivery of projects (Darling and Witty, 2016).

In order for organizations to reap benefits from IT projects, the projects must become successful. However, the word successful in a project context is defined from various angles. From a traditional context, a project is considered successful when it's completed within a given budget, time, and specifications (Karlsen et al., 2005). In a recent context, client satisfaction is an additional element that has been added to the traditional triangle of project success criteria (Pinto and Slevin, 2007). Another empirical study on 20 years of the literature showed that process, product, stakeholder satisfaction, operational, and business success are the constitutes that indicate an IT project success (El-Masri, 2009). Another factor that contributes to project success is the existence of a PMO in an organization. A PMO can boost the efficiency of project management by applying the lessons learned from previously completed projects to the new ongoing ones (Alblooshi, 2018).

Studies have been conducted globally to demonstrate the impact of a project management office on project success. In the national and regional context, however, the literature search revealed that previous studies had only focused either on PMO or project success. To the best of the researcher's knowledge and within the scope of the search tool, it wasn't possible to find closely related studies that looked at the relationship between PMO and its functions with IT project success in a similar way. Therefore, this research is aimed at finding out the effects of establishing a PMO on the success of IT projects. Additionally, it was intended to fill in the research gap and add input to the existing project management body of knowledge.

1.2 Background of the Organization

The Bank of Abyssinia (BoA) is an Ethiopian financial institution that was established under the National Bank of Ethiopia and has its headquarters in Addis Ababa. The bank, which was established in 1996 G.C., aspires to be a leading commercial bank in East Africa by 2030. During that time, it was devising and implementing various strategies in order to meet the demands of the banking industry while also maintaining its leadership. Following these strategies, the bank is aggressively growing its branch network and deploying various e-payment platforms such as ATM, POS, Internet banking, mobile banking, and wallet banking across various IT infrastructures to maximize its market opportunities and build satisfied customers.

The ongoing business changes, such as the global and national economic changes, the bank's internal environment, and leadership changes required the bank to devise the fifth-generation corporate strategy plan (from 2019/20 to 2023/24). In this strategic plan, one of the strategic objectives of BoA is to improve its IT/digital capabilities. The organization aims to augment its existing IT infrastructures and systems to facilitate and aid the bank's business operations. Additionally, based on the level of influence on the bank's objectives, initiating and implementing IT projects has been selected as one of the strategic initiatives to be fulfilled. The planned IT projects to be implemented include Upgrade Core Banking System, Implement Electronic Document Management System, Implement ERP Solution, Replace the existing Internet and Mobile Banking System, Implement Datawarehouse and BI Solution, and many others. The bank seeks to implement and manage these multiple IT projects that are major business drivers.

Bank of Abyssinia has a Project Management Office (PMO) which is a centralized project control structure that enables the delivery of IT projects. The department provides a project management service through subject matter experts and analysts. While leading the projects, the office is responsible for embedding project management principles across all phases of the projects, starting from initiation to project closure.

1.3 Statement of the Problem

Numerous IT projects are continuing to fail (Fagih et al., 2009). To stop projects from failing, project managers use project management processes, tools, and practices to properly initiate, plan, execute, monitor, and close project activities (Patanakul et al., 2010). Standardizing these project management practices will yield an even more reduced project failure rate (Milosevic and Patanakul, 2005). Thus, project managers are proposing the creation of a PMO department within their firms because a PMO is responsible for explicitly defining and maintaining the use of these standardized project management practices, tools, and procedures.

Despite a PMO's significance, there are many companies who are sceptical about its relevance and value (Babaeianpour and Zohrevandi, 2014). There are three reasons why PMOs are not given adequate attention that they deserve. The first one is that PMOs are considered overhead and unimportant because it is assumed that they drag business and operational processes down. Secondly, organizations report that the Return on

Investment (ROI) from a PMO is unknown and hard to validate (Kwak and Dai, 2000). Thirdly, due to the lack of practical and quantifiable data on the relationship between a PMO and project success, organizations are losing confidence in establishing and fostering a PMO and thus consider it as a waste of investment (Alblooshi, 2018). To ensure that organizations make the right decisions towards PMO investment, the researcher was motivated to examine the role of PMO and its functions in improving the success of IT projects and hence the overall performance of organizations. Therefore, the study conducted an explanatory type of research taking the case study of Bank of Abyssinia in Addis Ababa.

Bank of Abyssinia (BoA), in its previous corporate strategy plan, had planned to implement twelve IT projects. However, progress had only been made on six of them. When BoA performed an internal environment assessment, it identified that weak project management capability was the reason for the unsuccessful delivery of projects (Corporate Strategy BoA, 2019/20).

As PMO sustains the application of best project management capabilities and practices, the bank desired to increase its commitment towards cultivating the current PMO. However, to determine the necessary efforts and resources, senior managers required an understanding of the role of PMO and its functions in the success of IT projects. Therefore, by assessing the effect of the current PMO and its activities on IT project success, this research provided verifiable and quantifiable data that will aid managers in making appropriate decisions. In addition, based on the results of the research, the researcher developed possible recommendations to refine and customize the bank's PMO activities based on what best suits the organization.

1.4 Research Questions

After analysing the current problem and desired state of the bank, the research intended to answer the following research questions:

1. What is the rate of success of IT projects before and after PMO was established in Bank of Abyssinia (BoA)?
2. What are the responsibilities, functions, and activities of the PMO that affect the successful outcome of IT projects?
3. What are the values added by the PMO in enhancing IT project success and organization performance?

1.5 Research Objectives

1.5.1 General objective

The overall objective of this research is to examine the role of the Project Management Office (PMO) and its functions on the success of IT projects in Bank of Abyssinia in Addis Ababa.

1.5.2 Specific objectives

The following specific objectives are developed to specifically address the research questions.

- To examine the success of IT projects before and after PMO was established in Bank of Abyssinia (BoA).
- To identify the roles, functions, and activities of the PMO that affect IT project success.
- To determine the added values by the PMO on IT project performance and Bank of Abyssinia.

1.6 Significance of the Study

Many banks are now carrying out IT projects in order to improve their business operations and quality of services. As the demand for IT projects increases, the need for effective project procedures and centralized project management increases. A PMO plays a crucial role in realizing this goal. However, one research on 500 project managers reported that PMOs are very costly to implement (Salame, 2014). On the contrary, another research found out that after implementing PMO within their companies, the success of their projects proliferated from 16 to 26%. Thus, PMOs greatly reduced the rate of high project failures (Singh et al., 2009).

This research will be significant in contributing reasonable and reliable data for Bank of Abyssinia on the relationship between PMO and IT project success. Knowing the outcome of the relationship will certainly support the decision-making process of top management whether to invest resources or not on the PMO of the bank.

Many PMOs have limited staff members, but they perform several functions with few resources (Hobbs and Aubry, 2007). Therefore, based on the findings of the research, the bank's senior management decision could be to assign more staff to work on PMO or to allocate budget for the department or conversely to cut down resources for PMO. As PMOs are central to facilitate and practice project management, this research will also contribute to the growth and development of the project management field in Ethiopia.

1.7 Scope of the Study

It was first anticipated to conduct the research on all banks that have PMOs and are involved in IT projects in Addis Ababa. Nonetheless, the exact number of banks that have PMOs is unknown. So, the unavailability of data made it hard to estimate the sampling frame and number of samples to be taken later. Thus, the research was obliged to be limited to one specific bank, that is the Bank of Abyssinia. Geographically, the research was limited to the headquarter office of Bank of Abyssinia located in Addis Ababa. Therefore, because of the two reasons, the researcher is delimited to carry out the research on one bank that has PMO and is affiliated with IT projects here in Addis Ababa.

1.8 Limitation of the Study

The researcher believed there was a lack of up-to-date literature on PMOs in the context of Ethiopia. So, achieving the objective of the research was entirely dependent on the researcher's effort in finding relevant data. Moreover, the target population's size was another constraint. Since data was able to be acquired from the entire population, the census approach was used. However, the target population was only 60 people. This small size affected some part of the result of the analysis.

1.9 Definition of Terms

Project

A project is a unique set of coordinated tasks or activities with a distinct starting and finishing time. It utilizes resources such as manpower, budget, and equipment to achieve a certain objective or fulfill given specifications. Examples of projects include developing a new product or service, implementing a new structure in a company, acquiring a new information system (Kerzner, 2009).

Project Management

Project Management is the utilization of standards, processes, skills, tools, and techniques to project activities to attain the established project objectives (PMI, 2008). Project Management encompasses five process groups. The first one is project initiation. This process contains activities such as identifying the project benefits, selecting a project from a portfolio, assigning the project manager and team members. The second process is project planning. Tasks like defining resources and work requirements, scheduling the project activities are comprised under project planning. The third process is project execution. In this process, activities such as directing and managing the project work, monitoring and controlling the project, comparing achieved output with the expected one take place. The last process is project closure. This process has activities like closing the contract and finalizing paperwork (Kerzner, 2009).

Project Management Office (PMO)

PMO evolved from what's called project office (PO). A project office is a unit formed in an organization to manage and control one or more projects. A project manager often

leads this office (Dai and Wells, 2004). According to PMI (2008) definition, a PMO is an organizational office or body that is delegated with several roles and responsibilities to coordinate and manage projects. PMO is what lies between project management and senior management providing a centralized layer of control. PMO also serves as a source of knowledge to initiate and execute more successful IT projects. In addition to upgrading project management practices, it plays a significant role in organizational innovation and transformation (Singh et al., 2009).

Information Technology (IT) Project

IT is defined as anything linked with technology, and computing. It encompasses areas such as the internet, hardware, software, networking, digital data, and so on. IT projects are activities that involve the implementation and integration of IT and its services in the processes, operations, and practices of an organization. IT projects yield high benefits for an organization (Dahlberg and Kivijarvi, 2016).

Project Success

Success in general terms can be seen as achieving something. Defining project success, however, has become multifaceted for many scholars. Many project management professionals use the iron triangle time, cost, and scope parameters to define project success (Alblooshi, 2018). But, other researchers have come up with broader measurements of project success. For instance, project success can be viewed from two angles. The first one is called internal or project factors. These are factors such as budget, time, and performance and can be controlled by the project manager from the initiation to completion stage. The second one is external or client factors. These success factors instead of controlling the project implementation, focus on measuring the usage of the project, such as client satisfaction and the impact of the project on the organization (Pinto and Slevin, 1988).

Information Technology (IT) Project Success

Sulistiyani and Tyas (2019) defined IT project success as a combination of two elements. The first one is the achievement of the IT project output and the second one is the measurement of the project outcome. Achieving budget, schedule, and scope constraints indicate output achievement. While assessing client satisfaction and

organizational benefits deliver the outcome measurement. While Delone and McLean (1992) described IT/IS project success with six dimensions, namely information quality, system quality, information use, user satisfaction, individual and organizational impact.

1.10 Organization of the Study

The rest of the paper is organized into three sections. The first section presents a detailed and elaborated review of existing literature and findings relevant to the research topic. Important concepts and variables that are necessary to understand the research's objective are defined. Moreover, the chapter contains a careful and critical review of previous empirical and theoretical studies on PMO and IT project success. The next chapter is the research methodology. This chapter provides the appropriate type of research design, measurement, data collection method and sampling technique to be used in the research. The final chapter presents data analysis, results, and discussions of the findings.

CHAPTER TWO

2. LITERATURE REVIEW

This chapter will critically discuss previous relevant literature which is important to understand the research objectives. Theoretical frameworks and empirical studies about project success, and PMO are reviewed to understand the current level of knowledge, to find the research gap, and to finally show the benefit of conducting this research.

2.1. Theoretical Review

The research's theoretical review aims to systematically study, synthesize and present the existing concepts, theories, knowledge areas, arguments, and gaps that are crucial to understanding the research objectives. The literature review is structured thematically.

2.1.1. Project Management Office

The adoption of the Project Management Office dates back to 1930 (Babaeianpour and Zohrevandi, 2014). Initially, the concept of PMO was mostly practiced with IT projects. Now, its applications have been integrated into other industries and projects as well. PMO upholds the project management process in organizations by ensuring projects are initiated and implemented according to known standards.

PMO is a functional unit in an organization that engenders efficient delivery of projects through economies of repetition. In other words, PMO allows for the extraction of lessons learned and best practices from projects that are repeatedly executed, thus improving the performance of the upcoming projects.

By channelling all necessary resources, systems, people, finance, management tools, and organization support from the early project identification phase till completion, PMO is foundational to realize successful projects (Philbin, 2016).

2.1.2. Functions of Project Management Office

In different organizations, PMOs fill various roles or functions. Kim and Yoon (2011) identified functions of PMOs such as providing project management training and consulting, maintaining project management standards and methods, providing administrative support, providing resource management, and establishing project

knowledge management. Ward and Daniel (2013) also adopted five activities of PMOs in their survey. They included activities such as identifying and quantifying the investment benefits, planning technology implementation, planning business changes and benefit delivery, post-implementation review of time, cost, quality, changes, and benefits.

According to Dai and Wells (2004), Desouzaa and Evaristo (2006), Akel et al., (2011), Kutsch et al., (2015), there are numerous disorganized lists of specific activities performed by PMOs. However, grouping them into a certain function category is relevant to yield a statistically significant research result. There are five major PMO group functions (Hoobs and Aubry, 2007).

1. *Monitoring and Controlling Project Performance:* this group function contains activities that mainly focus on monitoring, controlling, and reporting project performance. The PMO is majorly tasked with PMO governance functions.
2. *Developing of Project Management Competencies and Methodologies:* it contains activities that are related to cultivating project management competency and capability through the utilization of tools and techniques. The PMO has the role of promoting project management in general.
3. *Multi-Project Management:* the PMO is responsible for selecting, managing, and coordinating projects. This function can be seen as program or portfolio management.
4. *Strategic Management:* the activities in this group function strengthen the working relationship between PMO and top management. The PMO is mandated to incorporate the organization's strategy to project objectives.
5. *Organizational Learning:* this function contains specific responsibilities which aim to increase the overall performance of the organization as well as the PMO by providing a learning feedback loop.

2.1.3. Value of Project Management Office

Effective and successful PMOs add value to an organization by tackling serval project management problems. According to Philbin (2016), PMOs, through years of managing and delivering projects, serve as the repository for project management knowledge. Moreover, they are capable of leading an organization to an improved performance by

aligning the business strategy with the projects. When there is a PMO in an organization, there is efficient control of project information, and it is possible to track and reduce non-compliance issues through project audits. Projects are also completed within the allotted budget and schedule when activities are monitored by PMOs. Besides, uncertain tasks within projects are better handled by PMOs. Generally, PMOs increase the organization's efficacy and the satisfaction of clients.

2.1.4. Project Success Dimensions

In an article that assessed journals on project success, Ika (2009) argued that the whole concept of project success is equivocal and unclear. When discussing the topic of project success, it's not understood in an absolute form of success rather in a perceived or planned success for a project. For one given project, Lim and Mohamed (1999) found that the project's success is interpreted differently among stakeholders. The Sydney opera house is an example of a project that is completed over time and cost allocations, but, it was acknowledged as a project success for the benefits it delivered after (Steinfort and Walker, 2007). Therefore, this uncertain definition of project success has led project managers to use personal rules of thumb instead of standardized criteria (Pinto and Slevin, 1988).

The extant literature has formulated and analysed several project success models. However, consensus on project success definition and its theoretical framework haven't been reached yet. The theory of triple constraints also known as the iron triangle has been known to be one of the foremost definitions for project success. Several pieces of literature confirm that there is an agreement on what the triple constraints are: time, scope, and cost. Time indicates the duration of the project. Scope refers to the work and magnitude of the project. And the cost is all about the budget resources required to do the project (Wyngaard et al., 2012).

However, the triple constraints definition of project success has been criticized to be insufficient. In his research, Atkinson (1999) found two kinds of errors in the iron triangle. A Type I error (when something is done wrong) and Type II error (when something has not been done as well). To prevent the errors and provide a good indication of project success, the author suggested modifying the triple constraints into square-route success criteria. This criterion contains client satisfaction, an element that has been added to the iron triangle. The client refers to anyone that the project benefits.

In the end, if the final output of a project is dissatisfying for the client or consumer, then attaining a good cost and time performance has little significance (Pinto and Slevin, 1988).

An implementation success model was used by Pinto and Slevin (1988) to measure project success. It was argued that to declare a project as a success, it must pass technical validity, organizational validity, and organization effectiveness. The technical validity assesses the triple constraints of success. But the other two components focus on client satisfaction. A project that is completed within specified cost, time, and scope must also be used by its intended clients. Clients accept and are satisfied with the project's ultimate product or system because of its utility and ease of use. Furthermore, the project must create a long-lasting impact (organization effectiveness) for its users, such as smooth operation, and employee satisfaction.

Another perspective by Lech (2013) suggested that a project that only attained the iron triangle and client satisfaction criteria but failed to achieve its business objectives can't be called successful. The contemporary project management model employs a balanced scorecard model to measure project performance. The balanced scorecard model adds a strategy element in addition to the time, cost, and scope limits (Marko, 2006). The theory of the iron triangle has now evolved into a hexagon shape. In addition to the triple constraints, achieving the organization's strategy, the satisfaction of the client and stakeholder have been incorporated into the project success dimension (Ika, 2009).

Even though different projects use various means of measuring success, assessing the success of IT/IS projects, in particular, is more complex and is defined in different ways for the project managers, clients, and project sponsors (Barclay, 2008). To examine the success of IT projects, it's important to be familiar with project success frameworks, dimensions, measurement methods, and indicators. These elements are represented in the following table.

Table 1: Project Success Measurements and Dimensions

IT Project Success Dimensions	The Framework in Use	Methods of Measuring Success	Time of Measuring Success
Project Technical, Technical Validity, Project Management	Iron Triangle	Cost, Time, Quality, Scope	When the project is completed
Stakeholder Acceptance, Client Satisfaction, Organizational Validity	Technology Acceptance Model (TAM)	Usefulness, Ease of use	When the project is received and is operated the project owner
Product Quality, Organization Effectiveness	DeLone and McLean frameworks	Service or System quality, Smooth operation, Employee satisfaction	When the project is being used for a long time
Organization Benefit	Balanced Scored Board (BSC)	Financial growth, Return on Investment, Reputation, Learning & growth	Annually

Source: Sulistiyani & Tyas (2019) and Pinto and Slevin (1988)

2.1.5. Factors Influencing Project Success

Understanding the dimensions and measurements of success provides a clarified roadmap for project managers to monitor and control the project throughout its life cycle. In addition to understanding the success criteria, knowing the success factors is equally important. A criterion is a standard that something is justified by. While factor indicates an event or an influence of something to a result. Project success dimensions are therefore criteria used to justify whether the project is successful or not, and project success factors are conditions that affect the project success itself (Ika, 2019).

Baccarini (2003) considered critical success factors as influencers of project success. The author identified understanding, competent project team, communication, realistic time & cost estimates, and adequate project control as the top five factors affecting project success. Moreover, Slevin and Pinto (1986) recognized factors that affect project success. These key factors were identified within the project team and outside of the project management team. These are top management support, project mission, project plan, client consultation, personnel, technical tasks, client acceptance,

monitoring and feedback, troubleshooting, communication, environmental events, power, and politics.

According to Lamproua and Vagionab (2018), project mission, project objectives, project scope, project definition, project vision were the most frequently occurring critical success factors. By comparing previous literature, Wateridge (1995) discovered similarities and consensus among researchers regarding critical success factors. In addition, Wateridge (1995) found out, from the user side, the lack of user involvement and communication problems were factors that hindered IT project success. And from the project manager's side, poor leadership, poorly defined objectives, and poor project planning were causes for IT project failure. One of the primary reasons that brought these causes is the lack of proper project management knowledge and skills (Schmidt et al., 2001). Interestingly, an entity that works to enhance project management knowledge and skills is Project Management Office (Singh, 2009). Thus, it's consequential to investigate the Project Management Office as a critical success factor of project success.

2.1.6. Project Management Office and Project Success

In research that studied the influence of PMO performance variables on project success, Peterson (2020) used contingency theory as the research's theoretical foundation. The argument that the author posed is that projects are unique and there is no single method of managing them. For instance, software development projects are best managed by agile methodology while infrastructure projects employ the sequenced waterfall method. Selecting project management methodologies that fit the project is contingent upon internal organizational factors, environmental conditions, and other external factors. Thus, the study tried to confirm the theory by considering the project context as well as external contingencies which are factors to project success.

On the other hand, Ward and Daniel (2013) adopted management-as-practice theory as the theoretical framework to study the role of PMO in IS/IT project success and management satisfaction. This theory was chosen to emphasize the practice involvement of PMOs. Moreover, due to its limited application in the project management field, the theory was used to show the practice perspective of organizations.

2.2. Empirical Review

The empirical review provides a critical analysis of relevant literature indicating where the studies were taken, the methodology employed, the main findings, and any observed weaknesses. The review was written chronologically, that is starting from the oldest relevant study to the latest. Moreover, an empirical review on the global, African, and Ethiopian levels was carried out.

2.2.1. Empirical Literature Review in the World

According to a research paper titled "The Effect of PMO Functions on IT Project Performance", Kim and Yoon (2011) addressed that there is indeed scarce empirical literature substantiating the need for implementing PMOs. The primary objective of the research was to unravel which PMO capabilities and functions are responsible for successfully delivering projects. To effectively investigate the performance of IT project management, the authors recognized that the PMO is the ideal beginning point. The study aimed at finding out the correlation between IT project performance and PMO functions. The study utilized a survey research method targeting project managers who have IT project management experience in a PMO supporting company. Using Partial Least Squares path modelling (PLS-PM), the authors found a correlation coefficient value of 0.644, indicating a significant relationship between PMO functions and project performance.

However, more than 62% of the sample were project managers from the manufacturing and public sectors. The respondents from the financial and IT/IS industries only accounted for 8%. Thus, the research failed to provide an even representation of the sample from all sectors. Furthermore, it had gaps in providing an in-depth analysis of a certain selected sector. This research, however, focused on the financial sector and evaluated the specific impact of PMO through an in-depth analysis of one specific bank.

Another contradicting finding by Barbalho et .al, (2017) indicated that the triple indicators of project success (time, cost, and scope) are significantly affected by activities of project managers than activities of PMOs. The purpose of this research was to examine the impact of PMO functions on the iron triangle project success parameters in New Product Development (NPD) projects. A total of 31 PMO functions were

grouped into three categories, namely, support to the higher hierarchical levels, support to project managers and their teams, and portfolio management.

35 companies that have PMOs and are involved in NPD projects were analyzed through a quantitative survey. The study revealed that PMO functions such as reporting projects to senior management, and project performance monitoring and control were positively correlated with the time parameter of project success. In addition, another PMO function which is the management of benefits also correlated with cost performance. However, most of the independent variables (PMO functions) showed moderate correlation instead of high significance to project success. Barbalho et.al., (2017), based on the data, suggested that the project success measurements were more affected by project managers' activities and performance than PMO functions.

Barbalho et.al., (2017) examined the effect of PMO functions based on only the triple project success constraints. However, the triple constraints success criteria for projects have been modified since the 1980s. Other factors such as benefits to stakeholders, meeting strategic objectives of the organization, and customer satisfaction have been added to project success criteria (Ika, 2009). Therefore, by observing the research gap, this research considered an up-to-date project success criteria.

Previous studies such as (Alblooshi, 2018) discovered the positive contribution of PMOs to project success. By conducting an exploratory study in a project-oriented organization, the researcher found out that if a PMO is thoughtfully planned, structured, and governed, then its establishment would add value to project success. Although, the study couldn't very this relationship with a measurable link. Data was collected using interviews only. This is because the research was restricted to one kind of research method only, that is qualitative research method. Noting the limitations of the study, this research used quantitative research method for a more comprehensive and statistical understanding of the phenomena.

Another exploratory survey study by Ward and Daniel (2013) examined the relationship between the presence of PMO and its activities with the success of IS projects and the satisfaction of top management. In contradiction to what's hypothesized, Ward and Daniel (2013) found out from the respondents that the presence of PMO by itself is inconsequential for the IS project success. However, the involvement of the PMO in project activities such as identifying and measuring project benefits at the start and end

of the project had shown a strong correlation towards project success. To measure the project's success, a self-reported approach was chosen. That means the respondents had to estimate the rate of the project's success. This affected the measurement's reliability.

2.2.2. Empirical Literature Review in Africa

In an attempt to investigate the effects of PMO on IT project success, Francis, (2015) conducted exploratory research in a Tanzanian financial institution called National Microfinance Bank. The research was a case study and it experimented with 30 project managers and IT employees of the company. More than 60% of the respondents agreed that PMO has a positive influence on project time, cost, and scope management. Through questionnaires and semi-structured interviews, the study concluded that project success factors were better managed after PMO implementation. To analyse and assess the data, Francis (2015) only employed the descriptive statistics method and didn't use any other analysis techniques to find out to what extent PMO affects IT project success.

A case study in a South African mining company discovered that due to the infusion of a PMO in their organization, the company's ability to execute projects increased from 50% to 81% (Linde and Steyn, 2016). The study analyzed the project and organization performance before and after the establishment of PMO. Due to the PMO, project management best practices (all 39 of them) were attained. Projects were well planned and monitored. Moreover, there was strong coordination among projects. The study also pointed out this value of the PMO was realized as a result of the combined effect of PMO functions.

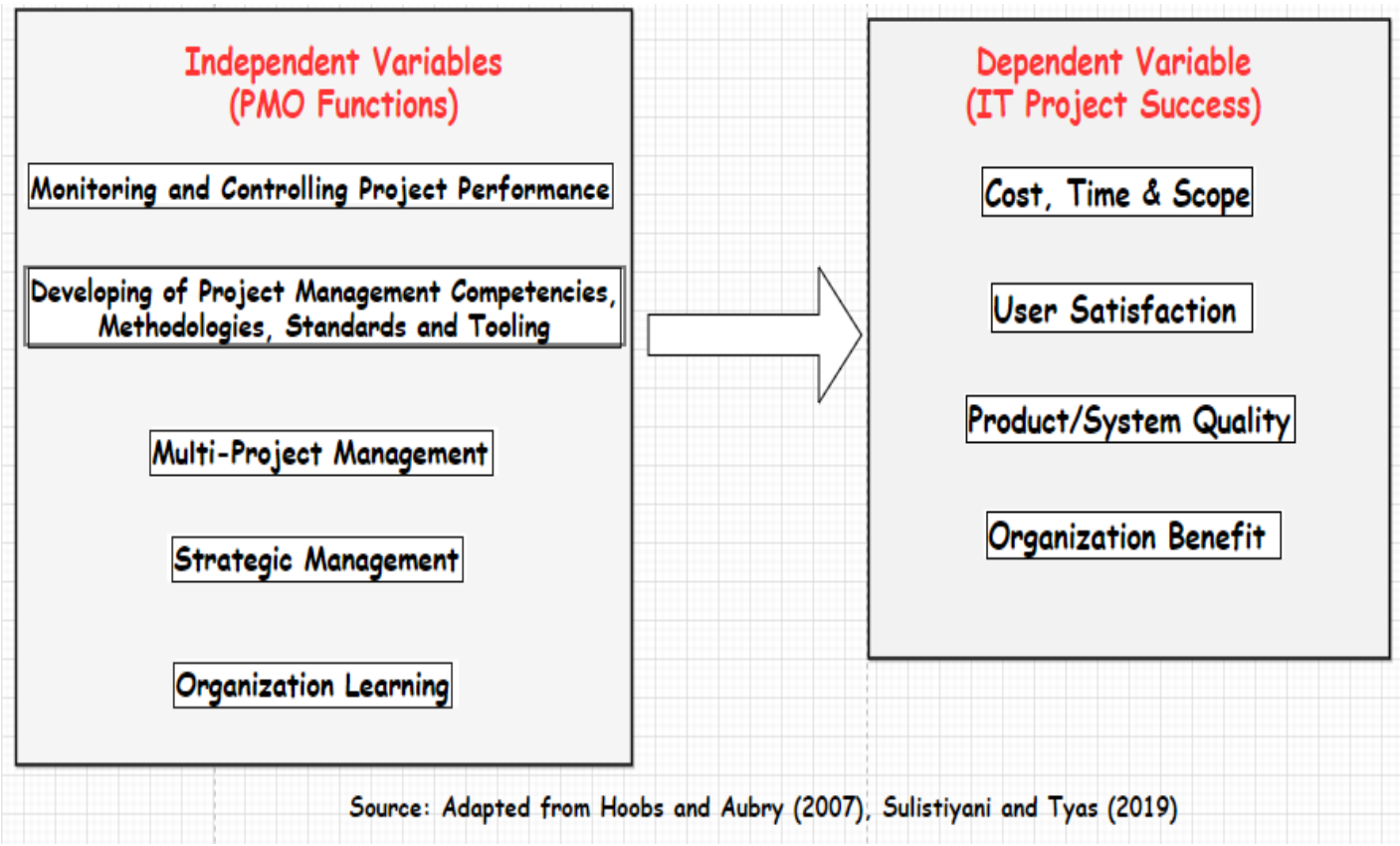
2.2.3. Empirical Literature Review in Ethiopia

It wasn't possible to find previous studies that are close to this research area of topic. However, Aberra (2018) evaluated the relationship between PMO and Organizational Project Management (OPM) of Bank of Abyssinia. Aberra (2018) found that the operational maturity level of Bank of Abyssinia's PMO is relatively higher than the strategic and tactical levels. Additionally, one study assessed the project management practices of the Bank of Abyssinia and the results showed that project management is well-practiced in the bank and few additional improvements would advance its performance (Borga, 2020).

2.3. Conceptual Framework

By adopting the PMO group functions that were formulated by Hoobs and Aubry (2007) and combining it with the IT projects success criteria given by Sulistiyani and Tyas (2019), the researcher has developed the following conceptual framework to guide the research study.

Figure 1: Conceptual Framework - "The Role of Project Management Office Functions on the Success of IT Projects"



The independent variable in this study is Project Management Office (PMO). The impact of PMO is conceptualized by five PMO function indicators. These are Monitoring and Controlling Project Performance, Development of Project Management Competencies, Multi-Project Management, Strategic Management, and Organizational Learning. The dependent or outcome variable is IT project success and it is measured using four constructs, these are Cost, Time & Scope, User Satisfaction, Product/System Quality, and Organization Benefit.

CHAPTER THREE

3. RESEARCH METHODOLOGY

This chapter discusses the overall research methodology that was used in the research. The chapter explains why specific research approaches, strategies, methods, and tools were preferred over others.

3.1. Research Design

A good research design is known for its characteristics of providing efficient information and answers for the problem under study (Kothari, 2014). The purpose of the research and the way research questions are developed direct the researcher to choose the right research design. For instance, exploratory research design answers why questions but not what and how research questions. While explanatory research studies a phenomenon to assess and explain the relationship between two or more variables. This research studied the impact of PMO activities on IT project success. Therefore, it employed an explanatory research design.

3.2. Research Strategy

After selecting the research design, the research strategy must be chosen as well. Selecting the right strategy is dependent upon the available time and costs to do the research and understanding the research objectives. There are different research strategies such as surveys, case studies, and experimental. This research used a case study research strategy.

A case study is capable of giving specific and precise answers for why, how, and what research questions. It's also mostly utilized in explanatory and exploratory researches. In addition, the strategy grants the researcher a rich understanding of the problem under study (Saunders et al., 2017). As the Bank of Abyssinia (BoA) has a functioning PMO that is responsible for managing IT projects, the case in BoA was selected for the research.

3.3. Research Approach

The research approach refers to the choices that guide the process of data collection and data analysis of the research. There are quantitative, qualitative, and mixed-method approaches. The approaches are differentiated by the type of data they generate. Using a quantitative approach gives numerical data to answer the research questions and the qualitative method gives data presented in word or image format.

For this research, a mixed-method approach was utilized. It is an approach that uses both quantitative and qualitative methods sequentially or at the same time. When incorporating both methods, data is collected and analysed separately. For instance, quantitative data is analysed using quantitative data analysis techniques only.

Using multiple data collection and analysis techniques gives strong validation for the research findings. Furthermore, when a case study research strategy is used, it is advised to use different sources of data and triangulate them to corroborate research results (Saunders et al., 2017).

3.4. Research Instrument

A research instrument is a data collection tool that is used to collect and measure data from the research target. Since this research followed a mixed research approach, to get the qualitative data, a semi-structured interview was used, and to get the quantitative data, the research instrument was a self-administered questionnaire.

3.4.1 Self-administered Questionnaire

The self-administered questionnaire included category and rating questions. The rating questions were based on a five-point Likert scale, in which the participant was asked how strongly he or she disagreed or agreed with a question. The instrument was distributed in a paper-based approach.

3.4.2 Semi-structured Interview

The interview was one-to-one and a face-to-face interview. A semi-structured interview was selected because of the flexibility it gives to ask the respondents follow-up and additional questions after each conversation. This aided the researcher to exploit more relevant data that was helpful to answer the research questions.

3.5. Sources of Data collection

The type of data that was used in this research were both primary and secondary data. To test the hypothesis, primary data was collected from the target population

3.5.1 Primary data

It is the data that is observed, measured, and collected for the first time (Kothari, 2014). The research collected primary data using a questionnaire from PMO employees and project management professionals who participated and worked on IT projects of the bank.

3.5.2 Secondary data

This refers to the data that has been already measured and collected by other researchers. The research utilized unpublished researches, documents, and project reports related to the topic of the study.

3.6. Target Population and Sample Size

The population is a subset of all cases from which a sample is taken from. When adopting a case study strategy in research, the researcher has to select a sample organization and a sample of employees to collect data. Selecting a sample organization grants more time to design the research instrument, and check the accuracy of data before doing analysis (Saunders et al., 2017).

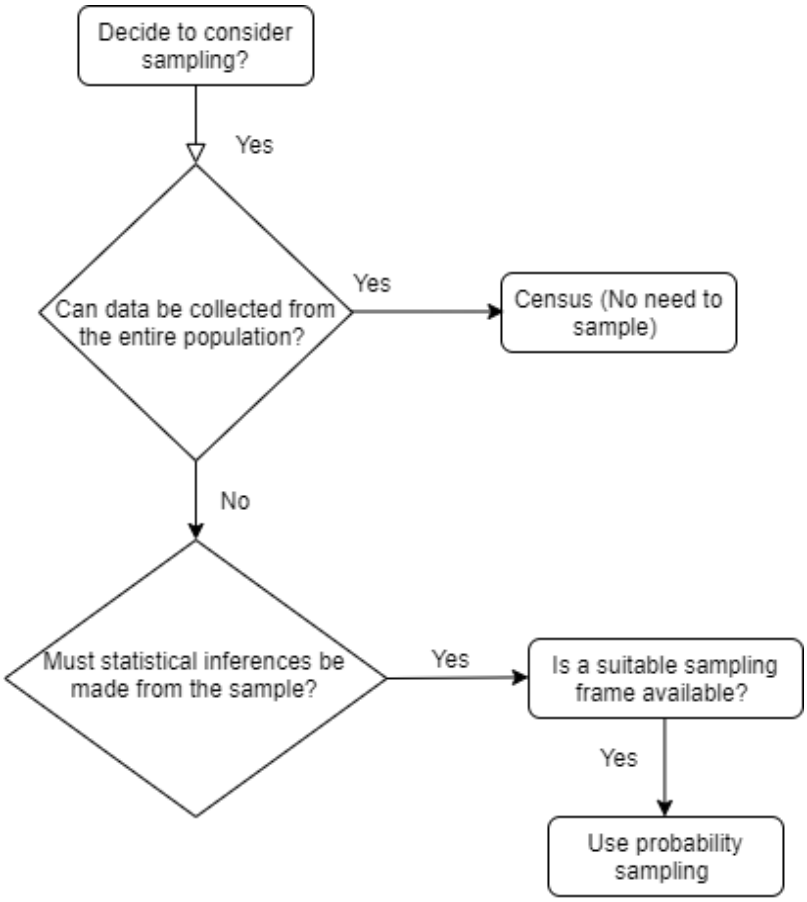
For this study, the target population is the PMO staff members, project managers, and project team members who took part in IT projects. The total target population comprises 60 people. As data can be collected from the entire target population, the sample size of this research was 60.

3.7. Sampling Technique

Sampling techniques are divided into two kinds: probability and non-probability sampling. Probability sampling is a technique where samples are selected at random. It is applied when a statistical inference has to be made from a sample about a population. While non-probability sampling or non-random sampling is employed when samples

have to be selected from a population based on judgment. For this research, data can be collected from the entire sample size, thus, the technique that was employed is census (Saunders et al., 2017).

Figure 2 Method of Choosing Sampling Technique



Source: Modified from Saunders et al., (2017).

Using the Census sampling technique has many advantages. The first one is it provides an opportunity for all target employees to participate. Secondly, it is capable of minimizing sampling errors and produces an accurate representative result.

3.8. Reliability of the Instrument

When the research instrument yields consistent and robust findings when used at different times, it is called reliable.

3.8.1 For Qualitative Data

The research ensured the reliability of the qualitative data by minimizing respondent error, respondent bias, and researcher bias. To minimize respondent error, the

researcher selected a neutral time for all participants to conduct the interview. The researcher ensured the answers of the participants wasn't biased or wasn't in favour of the organization they are working for. This was done by assuring the respondents that their answers from the interview was kept confidential. This method greatly avoided respondent bias. In order to make sure the researcher wasn't biased; the interview was conducted in a similar manner with all the respondents.

3.8.2 For Quantitative Data

There are different ways of checking the reliability of quantitative data. For this research, an internal consistency test was used. The internal consistency test evaluates the consistency of responses of each question in the questionnaire with other questions. The research used Cronbach's alpha test to calculate the internal consistency.

It is critical to compute and report Cronbach's alpha coefficient for internal consistency reliability when utilizing Likert-type scales. As a general rule of thumb, an acceptable value for Cronbach's alpha coefficient is a number above 0.70 (George and Mallery, 2003). The following tables show the calculated Cronbach's alpha values for the items incorporated in the research instrument by using SPSS statistical software tool.

Table 2 Result of Cronbach's alpha for the dependent variable constructs

Dependent Variable Constructs	**Cronbach's Alpha Value**	**N of items**
Cost, Time and Scope	0.762	3
Product/System Quality	0.859	3
User Satisfaction	0.781	6
Organization Benefit	0.815	5

Source: Own Survey, 2021

As indicated in the table (2), all of the items in the dependent variable constructs have a Cronbach's alpha coefficient greater than 0.70. Cronbach's alpha value for the three questions in the Cost, Time, and Scope section is 0.762. The Product/System Quality construct has the same number of items with an alpha value of 0.859. Cronbach's alpha for the six questions in the User Satisfaction construct was 0.781. Finally, the

Organization Benefit construct's five items yielded a Cronbach's alpha value of 0.815. As a result, the scale and items of the dependent variable utilized in this study are considered reliable.

Table (3) shows the internal consistency test result for the independent variable items used in the research instrument

Table 3 Result of Cronbach's alpha for the dependent variable constructs

Independent Variables	**Cronbach's Alpha Value**	**N of items**
Monitoring and Controlling Project Performance	0.824	3
Developing of Project Management Competencies and Methodologies	0.712	7
Multi-Project Management	0.862	4
Strategic Management	0.796	3
Organizational Learning	0.744	7

Source: Own Survey, 2021

The table above demonstrates that the questions within the five independent variables also satisfy the acceptable value for Cronbach's alpha. Overall, the research instrument used in this study is reliable.

3.9. Validity of the Instrument

Testing the validity of the research means checking if the findings are really what the research intended to measure in the beginning. To test the research's internal, construct, and content validity, pilot tests were administered with selected respondents. The research chose 3-4 participants for the pilot test. This test was important because it enabled the participants to comment on the content and structure of the questionnaire. Through this process, unclear questions were identified and amended.

3.10. Data Analysis

The collected data from the questionnaire and interview was analysed separately. For the quantitative data, descriptive statistics and linear regression methods were used. Descriptive statistics was used to understand the quantitative sets of data, to describe the sample data, and make summaries from it. Paired t-test analysis was used to analyse the before-after effect of PMO on IT project success. T-tests are commonly used to determine if two groups of data are different from each other. It compares the means of the two data and determines how significant the differences are.

For this research, a paired-samples t-test was used. Paired t-test is used to compare the mean scores of the same group of people in two different situations (Pallant, 2011). This data analysis technique was chosen because data was gathered from only one company (Bank of Abyssinia) and it was collected under two different conditions (before and after PMO was established in the bank). In addition, linear regression was used to determine the relative contribution of each independent variable of PMO functions on IT project success. Statistical Package for the Social Sciences (SPSS) software tool was used to analyse the quantitative data. The data gathered from the interview was analysed by developing themes and summarizing meanings from words.

3.11. Ethical Considerations

The researcher maintained the confidentiality of the respondents' responses and refrained from making personal biases while evaluating data. Items in the questionnaire that were disrespectful and immoral were avoided. Moreover, any inquires and comments from the respondents was addressed.

CHAPTER FOUR

4. RESULTS AND DISCUSSION

4.1. Introduction

To meet research objectives, the proposed research methodology in the previous chapter was followed. Accordingly, data was collected and analysed. The questionnaire that was used to gather quantitative data was adopted from Dai (2001), Stewart (2010), Irfan et. al., (2019), Hoobs & Aubry (2007). However, it was modified to ensure it answered the research questions. After the pilot test was conducted, respondents provided comments and corrections on some of the items in the questionnaire. Some ambiguous questions were omitted, and some were restated. This warranted the validity of the instrument. Then, the total number of items in the questionnaire became 46. The collected data was then analysed using SPSS Version 26 software tool. Additionally, to gather the qualitative data, an interview was conducted with 3 Project Management Office (PMO) staff members.

This chapter presents the analysis and results of the collected data from the target population. The first section demonstrates the results of the overall demographic representation of respondents. The second section shows the results of each research question. The data in the result is presented using tables, and a description for each table is also provided. The third section presents the results for the qualitative data. Finally, the last section discusses the meanings and interpretation of the results and will compare the findings with that of previous researches.

4.2. Demographics of the Respondents

Primarily, the research intended to collect data from 60 project managers, PMO staff members, technical and administrative project team members of Bank of Abyssinia. Nonetheless, out of 60 distributed questionnaires, only 50 of them responded. The rate of response can be calculated by dividing the number of people who returned the questionnaire by the number of people to whom the questionnaire was distributed for. Therefore, the rate of response is 0.833 or multiplied by 100%, it becomes 83.3%. It can be said that, out of the total target population, 83.3 percent of participants responded.

Table 4 General Demographics Data

Demographic Variables		**Frequency (f)**	**Percent (%)**
Gender	Male	42	84.0
	Female	8	16.0
	Total	50	100.0
Education Level	Bachelors	22	44.0
	Master's	28	56.0
	Total	50	100.0
Have taken Project Management related training.	Yes	36	72.0
	No	14	28.0
	Total	50	100.0
Types of IT Projects that were executed.	For external customers or users only	2	4.0
	For internal employees of the bank only	0	0
	both	48	96.0
	Total	50	100.0

Source: Own Survey, 2021

Table (4) provides the demographics of the participants for the data that was used to answer the research questions.

The general demographics data demonstrates that most of the participants were male. That is, 84% of the respondents account for males. Whereas, the rest 16% of respondents amounted to females. From table (4), it can be understood that 44% of the participants had a bachelor's degree when responding to the questionnaire and 56 percent of the participants, that is, (f = 28) had a master's level of education when answering the questions. The demographics data also indicates that most of the respondents, that is, (f= 36, 72%) took training in project management and similar related topics. The rest 28% (f = 14) didn't take any kind of project management

trainings. 96 % of the IT projects that the respondents participated in focused on serving the needs of both external customers as well as internal employees of the bank.

Table (5) shows the demographics data for the position that respondents had when involving in IT projects. It is presented in a separate table because the question allowed respondents to provide more than one answer. For instance, if a respondent had the role of project manager and if he/she was a PMO staff member in the bank, then the respondent ticked more than one answer choice.

Table 5 Demographics of Roles of Respondents in IT projects

Multiple-Choice Item		**Responses**	
		N	**Percent**
Position in IT projects	Project Management Office (PMO) Staff	8	16%
	Project Manager	14	28%
	Support Manager on Project Team	1	2%
	Project Coordinator	0	0%
	Project Team Member (technical)	35	70%
	Project Team Member (administrative)	9	18%
	Member of the business unit affected by the project	5	10%
Total		72	100%
N – number of ticks			

Source: Own Survey, 2021

72 is the total number of ticks that respondents made on the multiple-choice item question. The number 72 is greater than the total number of respondents 50. This shows that a participant ticked more than one answer option. Thus, (N = 8) ticks for the PMO staff option were selected, and this indicates that 16% of the respondents were Project Management Office (PMO) staff members. Most respondents (70%) ticked the project team member (technical) position in addition to the project manager or support manager on the project team role. About 28% of the participants were project managers. There

were no project coordinators among the participants. 18% of the respondents had project team member (administrative) roles, while 10% of them were members of other business units affected by the IT project.

4.3. Results of Research Questions

This section presents the quantitative data results for the research questions. The analysed data through SPSS software is illustrated using tables. A written description of the data in the table is also provided. The first part of this section demonstrates the results for the research question, 'what is the rate of success of IT projects before and after PMO was established in Bank of Abyssinia?' The second part presents the results for the research question, 'what are the specific responsibilities, functions, and activities of the PMO that affect the successful outcome of IT projects?' The final third section displays the findings for the research question, 'what are the values added by the PMO in enhancing IT project success and organization performance?"

4.3.1 What is the rate of success of IT projects before and after PMO was established in Bank of Abyssinia (BoA)?

To investigate the role of PMO on IT project success, data was gathered on IT project success before and after PMO was implemented at the bank. As it was depicted on the conceptual framework, project success was measured using four constructs. These constructs are Cost, Time and Scope, Product/System Quality, User Satisfaction, and Organization Benefit. To assess IT project success, three or more questions were developed for each construct. 17 questions in total were used to measure project success. Each item was rated on a five-point Likert scale, with (1) strongly disagreeing and (5) strongly agreeing. If the question didn't apply to respondents, a not applicable choice (N/A) was also supplied.

4.3.1.1 IT Project Success Before PMO was Established in BoA

To assess and evaluate the role of PMO on IT project success, data was gathered from the participants on IT project success before PMO was established in the bank. The tables from (6) to (9) present the descriptive statistic results for the measurement of IT project success before PMO was established.

1. Cost, Time & Scope Items

Table 6 Results for cost, time, and scope items before PMO

Frequency (f), Percent (%), Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5), Not Applicable (N/A), Standard Deviation (SD)								
Before PMO was established	**1**	**2**	**3**	**4**	**5**	**N/A**	**Mean**	**SD**
IT projects were completed on time.	f =10, 20%	f =31, 62%	f =7, 14%	f =1, 2%	f =0, 0%	f =1, 2%	2.06	0.86685
IT projects were completed within the dedicated cost.	f =13, 26%	f =26, 52%	f =8, 16%	f =0, 0%	f =1, 2%	f =2, 4%	2.12	1.11831
IT projects have had minimum number of scope changes.	f =9, 18%	f =30, 60%	f =8, 16%	f =1, 2%	f =0, 0%	f =2, 4%	2.18	1.02400

Source: Own Survey, 2021

Before PMO was established in BoA, the majority of the participants 62% (f =31) didn't agree that IT projects were completed on the planned time. Additionally, more than half of the respondents 52% (f =26) also disagreed that IT projects were completed within the dedicated cost. While 2% agree that IT projects had experienced only minor scope changes, 60% (f= 30) of them indicated that IT projects went under major scope changes before completion.

2. Product/System Quality Items

Table 7 Results for product/system quality items before PMO

Before PMO was established	1	2	3	4	5	N/A	Mean	SD
The outcome of the IT projects meets the initial objectives.	f =7, 14%	f =31, 62%	f =7, 14%	f =3, 6%	f =0, 0%	f =2, 4%	2.28	1.05056
The output of IT projects seems to do the best job of solving the initial problem.	f =0, 0%	f=26, 52%	f =16, 32%	f =6, 12%	f =0, 0%	f =2, 4%	2.72	0.96975
The results of IT projects improved the way users used to perform tasks in the office.	f =0, 0%	f =30, 60%	f =12, 24%	f =6, 12%	f =0, 0%	f =2, 4%	2.64	0.98478

Source: Own Survey, 2021

Before the implementation of PMO in BoA, the question claiming that the output of IT projects met the initial objectives elicited a strong disagreement response from 14% of the participants. In response to the same question, 62 percent (f =31) also expressed their disagreement. Around 52% of respondents disagreed that IT project outcomes solved the problems that were supposed to be solved before the initiatives started. Only 12% of participants felt that IT project outcomes increased user performance, whereas the majority 60% (f =30) disagreed.

3. User Satisfaction Items

Table 8 Results for user satisfaction items before PMO

Before PMO was established	1	2	3	4	5	N/A	Mean	SD
The outcome of the IT projects has increased employee effectiveness.	f =6, 12%	f = 28, 56%	f =8, 16%	f =6, 12%	f=0, 0%	f =2, 4%	2.44	1.10951
The outcome of the IT projects has improved employee performance.	f =10, 20%	f =23, 46%	f =10, 20%	f =5, 10%	f =0, 0%	f =2, 4%	2.36	1.15635
The outcome of the IT projects has improved employee decision making.	f =4, 8%	f=27, 54%	f =14, 28%	f =3, 6%	f=0, 0%	f =2, 4%	2.48	1.01499
The outcome of the IT projects has brought a positive impact on employees who use it.	f =2, 4%	f =26, 52%	f=17, 34%	f=3, 6%	f =0, 0%	f =2, 4%	2.58	0.97080
The outcome of the IT projects has benefited customers.	f =1, 2%	f =12, 24%	f =15, 30%	f =18 ,36%	f =2, 4%	f =2, 4%	3.28	1.06981
The outcome of the IT projects has brought a positive impact on customers who use it.	f =2, 4%	f =8, 16%	f=22, 44%	f=14, 28%	f =2, 4%	f =2, 4%	3.24	1.04119

Source: Own Survey, 2021

For IT projects which were carried out for the internal employees of the bank, employee effectiveness, performance, and decision making were the measurement items that measured user satisfaction construct. Based on the collected data, 34 employees or 68% of the respondents disagreed as well as strongly disagreed that IT projects' outcomes increased their effectiveness before PMO arrived at the bank. Furthermore, with only 10% agreement and 20% neutrality, 66 percent of respondents disagreed and strongly disagreed that the IT projects' end system improved their performance at work. Thus, employee performance, with a mean of 2.36 obtained the lowest mean score. Moreover,

54% (f = 27) of respondent employees did not believe that IT initiatives improved their decision-making abilities. On the contrary, 40% (f= 20) of them agreed that IT projects had benefited customers even before the PMO was founded. Therefore, out of the six items that examined user satisfaction, the item that inquired if the outcome of IT projects resulted in customer benefits got the highest mean score with values (M = 3.28, SD = 1.06981).

4. Organization Benefit Items

Table 9 Results for organization benefit items before PMO

Before PMO was established	1	2	3	4	5	N/A	Mean	SD
The completed IT projects have met organizational goals and business strategies which were set in the beginning.	f =8, 16%	f =29, 38%	f =11, 22%	f =0, 0%	f =0, 0%	f =2, 4%	2.22	0.99571
The IT projects helped the bank learn and gain knowledge.	f =10, 20%	f =31, 62%	f =4, 8%	f =3, 6%	f =0, 0%	f=2, 4%	2.16	1.07590
The IT projects have improved the bank's organization capability.	f =11, 22%	f =28, 56%	f =9, 18%	f =0, 0%	f =0, 0%	f =2, 4%	2.12	1.02300
The IT projects have increased the financial performance and revenue of bank.	f =19, 38%	f =20, 40%	f =8, 16%	f =1, 2%	f =0, 0%	f =2, 4%	1.98	1.13371
Past and current IT projects enable other IT project works in the future.	f =0, 0%	f =13, 26%	f =14, 28%	f =21 ,42%	f =0, 0%	f=2, 4%	3.28	0.99057

Source: Own Survey, 2021

To claim that a project is successful, the company that invested in it or for whom it was carried out must attain particular benefits, such as accomplishing corporate strategic goals, generating revenue, or boosting staff capacity. As a result, the items above assessed whether Bank of Abyssinia benefited in any way from the IT initiatives that were completed. Considering the time when PMO was not yet created in the bank, 38%

(f=29) of respondents stated that the finished projects fell short of the business goals and strategies outlined at the outset. The majority of participants 62% (f =31) also responded that the projects did not assist them in gaining knowledge. Around 22% strongly disagreed, and 56% disagreed that the projects performed advanced the bank's competence. Furthermore, 38% (f=19) strongly disagreed that IT projects improved the bank's financial performance and revenue before the PMO was founded. However, 42 % (f =21) of the respondents agreed that without PMO, the organization was able to initiate future IT project works as a result of past IT projects. Out of the complete 17 items that measured project success before PMO, the item that measured the bank's financial performance and revenue earned the lowest mean of 1.98, with a standard deviation of 1.13371,

4.3.1.2 IT Project Success After PMO was Established in BoA

In order to recognize and clearly assess the practical role of PMO on IT project success, it was also vital to collect data considering the time after PMO was formed. Respondents were asked to judge the success of the IT project on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5) using the same research instrument.

1. **Cost, Time & Scope Items**

Table 10 Results for cost, time, and scope items after PMO

Frequency (f), Percent (%), Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5), Not Applicable (N/A), Standard Deviation (SD)								
After PMO is established	**1**	**2**	**3**	**4**	**5**	**N/A**	**Mean**	**SD**
IT projects are completed on time.	f =0, 0%	f =2, 4%	f =3, 6%	f=28, 56%	f=16, 32%	f =1, 2%	4.22	0.76372
IT projects are completed within the dedicated cost.	f =0, 0%	f =1, 2%	f =8, 16%	f=18, 36%	f=21, 42%	f =2, 4%	4.3	0.86307
IT projects have had minimum number of scope changes.	f =0, 0%	f =0, 0%	f =5, 10%	f =25 ,50%	f =19 ,38%	f =1, 2%	4.32	0.68333

Source: Own Survey, 2021

As depicted in the table (10), following the establishment of the PMO, 88% of respondents (f = 44) strongly agreed and agreed that IT projects are completed on time. Over 78 percent (f = 39) of those polled agreed and strongly agreed that IT projects are completed on budget. According to half of the respondents 50% (f = 25), IT projects experienced a minimal number of scope revisions.

2. **Product/System Quality Items**

Table 11 Results for product/system quality items after PMO

After PMO is established	1	2	3	4	5	N/A	Mean	SD
The outcome of the IT projects meets the initial objectives.	f =0, 0%	f =0, 0%	f =3, 6%	f=26, 52%	f =21 ,42%	f=0, 0%	4.36	0.59796
The output of IT projects seems to do the best job of solving the initial problem.	f =0, 0%	f =0, 0%	f =5, 10%	f=26, 52%	n =19 ,38%	f =0, 0%	4.28	0.64015
The results of IT projects improved the way users used to perform tasks in the office.	f =0, 0%	f =0, 0%	f =6, 12%	f =23 ,46%	f =20 ,40%	f =1, 2%	4.32	0.71257

Source: Own Survey, 2021

The above table shows the ranking values, the mean, and standard deviation of product/system quality questions. After BoA PMO was established, 52% of the respondents (f= 26) agreed that the outcomes of IT projects met the initial target project goals. Around 38% of the participants (f= 19) strongly agreed that the results of IT projects completely solved the primarily observed problems. Furthermore, 46% (f=23) of the respondents agreed that the outcomes of IT project improved the way users used to accomplish office duties.

3. User Satisfaction Items

Table 12 Results for user satisfaction items after PMO

After PMO is established	1	2	3	4	5	N/A	Mean	SD
The outcome of the IT projects has increased employee effectiveness.	f =0, 0%	f =0, 0%	f =5, 10%	f =19 ,38%	f =26 ,52%	f =0, 0%	4.42	0.67279
The outcome of the IT projects has improved employee performance.	f =0, 0%	f =1, 2%	f =3, 6%	f =22 ,44%	f =23 ,46%	f=1, 2%	4.4	0.72843
The outcome of the IT projects has improved employee decision making.	f =0, 0%	f =2, 4%	f =3, 6%	f =25 ,50%	f=18, 36%	f =2, 4%	4.3	0.81441
The outcome of the IT projects has brought a positive impact on employees who use it.	f =0, 0%	f =0, 0%	f =3, 6%	f=21, 42%	f =26 ,52%	f =0, 0%	4.46	0.61312
The outcome of the IT projects has benefited customers.	f =0, 0%	f =0, 0%	f =2, 4%	f =17 ,34%	f =31 ,62%	f =0, 0%	4.58	0.57463
The outcome of the IT projects has brought a positive impact on customers who use it.	f =0, 0%	f =0, 0%	f =3, 6%	f=19, 38%	f =28 ,56%	f =0, 0%	4.5	0.61445

Source: Own Survey, 2021

The items of user satisfaction construct that judged project success following the introduction of PMO are shown in the table above. Employee effectiveness has increased as a result of IT projects, according to 52% of respondents. In addition, 46% (f=26) of employees responded that the IT systems delivered by the projects improved their performance. Half of the respondents also agreed that the project's end systems helped them make better decisions. With 62% of respondents strongly agreeing, participants responded that the implemented IT projects helped and benefited Bank of

Abyssinia customers. 56% (f = 28) also believed that the projects had a favorable influence on the end product or system users. Out of the complete 17 items that measured project success after PMO, the item that measured customer benefit held the highest mean value of 4.58.

4. Organization Benefit Items

Table 13 Results for organization benefit items after PMO

After PMO is established	1	2	3	4	5	N/A	Mean	SD
The completed IT projects have met organizational goals and business strategies which were set in the beginning.	f =0, 0%	f =0, 0%	f =5, 10%	f =23 ,46%	f =22 ,44%	f =0, 0%	4.34	0.65807
The IT projects helped the bank learn and gain knowledge.	f =0, 0%	f =0, 0%	f =2, 4%	f=25, 50%	f =23 ,46%	f =0, 0%	4.42	0.57463
The IT projects have improved the bank's organization capability.	f =0, 0%	f =0, 0%	f =2, 4%	f =26 ,52%	f =22 ,44%	f =0, 0%	4.4	0.57143
The IT projects have increased the financial performance and revenue of bank.	f =0, 0%	f =1, 2%	f =6, 12%	f =17 ,34%	f =26 ,52%	f =0, 0%	4.36	0.77618
Past and current IT projects enable other IT project works in the future.	f =0, 0%	f =0, 0%	f = 4, 8%	f =17 ,34%	f =29 ,58%	f =0, 0%	4.5	0.64681

Source: Own Survey, 2021

The questions in the table (13) assessed if the bank has been benefited from IT projects after the formation of PMO. 46% (f= 23) of the participants revealed their agreement that after PMO, IT projects helped the bank achieve its goals and business strategies which were set in the beginning. Moreover, 52% (f = 26) agreed that the completed projects increased the bank's capability. 50% (f = 25) strongly agreed that they gained knowledge from the completed IT projects.

Furthermore, after PMO arrived at their firm, 52% (f=26) of them highly agreed that IT projects improved the bank's financial performance and revenue. While 34% (f =17) of respondents believed that with the help of PMO, IT projects were able to initiate future IT project work as a result of previous IT projects.

A paired-samples t-test analysis was used for pre and post-PMO results in order to examine, compare, and achieve a statistically significant result. The t-test results for IT project success constructs are shown in Table (14).

Table 14 Results of Paired Sample t-test

Paired-Samples T-test							
IT Project Success Constructs		**Mean**	**N**	**Std. Deviation**	**t**	**df**	**Sig. (2-tailed)**
Pair 1	Cost, Time & Scope Before PMO	6.36	50	2.56952	13.613	49	.000
	Cost, Time & Scope After PMO	12.80	50	1.74964			
Pair 2	Product/System Quality Before PMO	7.64	50	2.65545	13.240	49	.000
	Product/System Quality After PMO	13.00	50	1.27775			
Pair 3	User Satisfaction Before PMO	16.38	50	5.43567	12.891	49	.000
	User Satisfaction After PMO	26.96	50	2.43243			
Pair 4	Organization Benefit Before PMO	11.76	50	4.47469	14.105	49	.000
	Organization Benefit After PMO	22.24	50	2.28178			

Source: Own Survey, 2021

The first pair result shows that there was a statistically significant increase in scores of cost, time, and scope from the time before PMO (M = 6.36, SD= 2.56952) to time after PMO (M = 12.80, SD = 1.74964).

1. Reported one-sample = t(49) = 13.613, *P*<.001

The second pair result shows that there was a statistically significant increase in scores of product/system quality from the time before PMO (M = 7.64, SD= 2.65545) to time after PMO (M = 13.00, SD = 1.27775).

2. Reported two-sample = t(49) =13.240, $P < .001$.

The third pair result shows that there was a statistically significant increase in scores of user satisfaction from the time before PMO (M = 16.38, SD= 5.43567) to time after PMO (M = 26.96, SD = 2.43243).

3. Reported three-sample = t(49) =12.891, $P < .001$

The fourth pair result shows that there was a statistically significant increase in scores of organizations benefit from time before PMO (M = 11.76, SD= 4.47469) to time after PMO (M = 22.24, SD = 2.28178).

4. Reported four-sample = t(49) =14.105, $P < .001$

4.3.2 What are the responsibilities, functions, and activities of the PMO that affect the successful outcome of IT projects?

The findings above indicate that the presence of PMO in the Bank of Abyssinia has a significant positive impact on IT project success. The impact is justified not just by the PMO's existence and structure, but also by the activities it undertakes and the role it plays in assuring project success. This section summarizes the findings of the research question, which sought to determine the PMO roles and responsibilities that influence IT project success. As noted in the literature review, specific PMO activities are categorized under five PMO group functions. Each specific PMO activity was designed as an item in the research instrument and it was measured using a five-point Likert scale. The group PMO functions are monitoring and controlling project performance, developing of project management competencies and methodologies, multi-project management, strategic management, and organizational learning (Hoobs & Aubry ,2007). The tables from (15) to (19) exhibit the frequencies, percentages, and descriptive statistics results of the collected data.

1. Monitoring & Controlling Project Performance - PMO Function 1

Table 15 Results of PMO function 1 items

Frequency (f), Percent (%), Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5), Not Applicable (N/A), Standard Deviation (SD)								
Items	**1**	**2**	**3**	**4**	**5**	**N/A**	**Mean**	**SD**
IT project performance was monitored and controlled, and this contributed to IT Project success.	f =0 0%	f =0, 0%	f =1, 2%	f =31, 62%	f =18, 36%	f =0, 0%	4.34	0.51942
In each IT project, project status was reported to top management and this contributed to the success of IT Projects.	f =0 0%	f =0, 0%	f =2, 4%	f =27, 54%	f =21, 42%	f =0, 0%	4.38	0.56749
For each IT project, a project scoreboard (simple visual software illustrating the progress and status of a project) was developed and maintained, and it contributed to IT Project success.	f =4, 8%	f =14, 28%	f =15, 30%	f =14, 28%	f =3, 6%	f =0, 0%	2.96	1.06828

Source: Own Survey, 2021

As shown in table (15), the monitoring and controlling project performance function contained three items. For the item that asked if IT project performance was monitored and controlled, and if it contributed to IT Project success, 62% of the participants agreed that the activity was performed by BoA PMO and it also contributed to IT project success. Around 42% of them strongly agreed with a mean score of 4.38, and a standard deviation of 0.56749 that project status was reported to upper management and this had positive effects on IT project success. However, 36 percent (f = 18) strongly disagreed and disagreed that a project scoreboard or visual software was used to monitor IT projects and this had minor significance on the project success.

2. Developing of Project Management Competencies & Methodologies - PMO Function 2

Table 16 Results of PMO function 2 items

Items	1	2	3	4	5	N/A	Mean	SD
For the IT projects, standard project management methodology was developed and implemented, and it has positively affected IT Project success.	f =0, 0%	f =1, 2%	f =6, 12%	f =26, 52%	f =16, 32%	f =1, 2%	4.2	0.75593
Project management within the organization was developed, and it positively contributed to IT Project success.	f =0, 0%	f =1, 2%	f =8, 16%	f =19, 38%	f =21, 42%	f =1, 2%	4.26	0.82833
Project management software and tools (MS Project, Gantt Chart) was made available for use, and this contributed to the success of IT Projects.	f =0, 0%	f=0, 0%	f=5, 10%	f =29, 58%	f =15, 30%	f =1, 2%	4.24	0.65652
Risk assessment procedures were established, and this positively affected IT Project success.	f =2, 4%	f =23, 46%	f =17, 34%	f =7, 14%	f =0, 0%	f =1, 2%	2.66	0.91718
Documentation standards (progress/status reports, and time sheets, etc..) were used, and this contributed to IT Project success.	f =3, 6%	f=22, 44%	f =9, 18%	f =14, 28%	f =1, 2%	f =1, 2%	2.82	1.10083
Project closeout process were used, and this positively affected the IT Project success.	f=0, 0%	f =0, 0%	f =6, 12%	f =34, 68%	f =9, 18%	f =1, 2%	4.1	0.61445
Competency of personnel including training and mentoring for project managers and team members was provided, and this contributed to the success of IT Projects	f =0, 0%	f =0, 0%	f =4, 8%	f =40, 80%	f =6, 12%	f =0, 0%	4.04	0.44994

Source: Own Survey, 2021

Seven PMO activities were included in the second group function. Developing project management received the highest mean score of 4.26 among the activities. 42% of respondents strongly agreed that the BoA PMO's project management practice had an impact on the success of IT projects. Similarly, 32% strongly agreed that standard project management practices had a significant impact on project success. While 46% of them disagreed that the PMO implemented risk assessment procedures, and this activity had the lowest mean score of (M= 2.72, SD = 1.03095). According to 58% (f=29) distribution data, respondents agreed that the PMO provided project management application software tools such as MS Project, and its utilization was an influential factor of project success. In addition, with 80% of agreement, participants responded that PMO arranged competency training for allocated project managers and team members before projects were carried out.

3. Multi-Project Management - PMO Function 3

Table 17 Results of PMO function 3 items

Items	1	2	3	4	5	N/A	Mean	SD
Multiple IT projects were properly coordinated and managed, and this has an effect on IT Project success.	f =1, 2%	f =0, 0%	f =6, 12%	f=24, 48%	f =16, 32%	f =3, 6%	4.26	0.89921
New IT projects were identified, selected, and prioritized, and this has a positive effect on the success IT Projects.	f =0, 0%	f =0, 0%	f =4, 8%	f =27, 54%	f =17, 34%	f =2, 4%	4.34	0.68839
Resources between IT projects were allocated, and this contributed to the success of IT Projects.	f =0, 0%	f=1, 2%	f=3, 6%	f =28, 56%	f =16, 32%	f =2, 4%	4.3	0.73540
One or more portfolios (a set of projects) were managed, and this has contribution to IT Project success.	f =0, 0%	f =0, 0%	f =5, 10%	f=33, 66%	f =10, 20%	f =2, 4%	4.18	0.66055

Source: Own Survey, 2021

In the third PMO function, four activities were included as questions. More than half of the participants agreed that all of the roles in this category play an important role in IT project success. Managing several IT projects was viewed as a positive influencer of project success by 48% agree response from respondents, identifying and prioritizing new projects by 54% of agree response, and distributing resources between projects by 56% of agree response from respondents.

4. Strategic Management- PMO Function 4

Table 18 Results of PMO function 4 items

Items	1	2	3	4	5	N/A	Mean	SD
For IT projects, PMO participated in strategic planning and management, and this contributed to IT Project success.	f =0, 0%	f =3, 6%	f =10, 20%	f =30, 60%	f =5, 10%	f =2, 4%	3.86	0.83324
Advice to top management about IT projects was provided, and this has an effect on the success of IT projects.	f =0, 0%	f =0, 0%	f =7, 14%	f =33, 66%	f =9, 18%	f =1, 2%	4.08	0.63374
Benefits management was done, and this has contribution to IT Project success.	f =12, 24%	f =19, 38%	f =12, 24%	f =4, 8%	f =1, 2%	f =2, 4%	2.38	1.22708

Source: Own Survey, 2021

Table (18) indicates the responsibilities of BoA PMO under the strategic management function group. According to 38% of participants, the benefits management activity for projects didn't affect project success at all. Additionally, the PMO's involvement in strategic planning and management was viewed as neutral by 20% of respondents. However, 66% believed that the PMO did provide project guidance to upper management, and this activity had the highest mean score of 4.08 among the three activities under the function 4 category.

5. Organizational Learning- PMO Function 5

Table 19 Results of PMO function 5 items

Items	1	2	3	4	5	N/A	Mean	SD
Project documentation was archived and managed, and this has contribution to success of IT projects.	f =1, 2%	f =2, 4%	f =5, 10%	f =30, 60%	f =11, 22%	f =1, 2%	4.02	0.86873
Project audits were conducted, and this has an effect on the overall success of IT projects.	f =5, 10%	f =25, 50%	f =9, 18%	f =8, 16%	f =0, 0%	f =3, 6%	2.64	1.22491
Post-project reviews were conducted, and this has contribution to IT Project success.	f =11, 22%	f =22, 44%	f =10, 20%	f =4, 8%	f =1, 2%	f =2, 4%	2.36	1.20814
A database of lessons learned was implemented and managed, and this affected the success of IT Projects.	f =11, 22%	f =20, 40%	f =10, 20%	f =7, 14%	f =2, 4%	f =0, 0%	2.38	1.10454
A risk database was implemented, and this has an effect on IT Project success.	f =10, 20%	f=29, 58%	f =8, 16%	f =3, 6%	f =0, 0%	f =0, 0%	2.08	0.77828
Project team members received adequate training on relevant project management software packages, and this contributed to IT Project success.	f =1, 2%	f =8, 16%	f =9, 18%	f =26, 52%	f =6, 12%	f =0, 0%	3.56	0.97227
The performance of the PMO was monitored and controlled, and this has an effect on IT Project success.	f =0, 0%	f =2, 4%	f =10, 20%	f=25, 50%	f =12, 24%	f =1, 2%	4.00	0.83299

Source: Own Survey, 2021

Organizational learning function comprised of 7 specific roles of PMO. Participants in the BoA gave each activity a score based on how important it was to the project's success. Out of the seven, four were scored poorly: completing project audits by 50% of disagree response from respondents, post-project reviews by 44% of disagree response, risk database implementation by 58% of disagree response, and lessons

learned implementation by 40% of disagree response from respondents. However, as contributing to project success, the remaining three roles namely maintaining project documentation, providing proper training on project management software, and monitoring PMO performance, were given agree response by 60%, 52%, and 50% of respondents respectively. Of the 24 items of PMO function measurements, implementing risk database earned the lowest mean score (M = 2.08, SD= 0.77828).

To analyse the contribution of PMO group functions on IT project success, linear regression was performed on the variables. First, the mean scores of the items in each independent variable were calculated. Secondly, the items in each dependent variable construct were added together to get a total score for four IT project success constructs. Following that, the four constructs were summed to get one continuous dependent variable, that is project success. Table (20) presents the results of the linear regression which includes the model summary, ANOVA table, and the coefficient values for each independent variable against the dependent variable IT project success.

Table 20 Linear regression result

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.570[a]	.325	.248	4.85852
a. Predictors: (Constant), Multi-Project Management, Developing of Project Management Competencies & Methodologies, Monitoring & Controlling Project Performance, Strategic Management, Organizational Learning,				

Source: Own Survey, 2021

In the above model summary table, the value under R square heading is 0.325. R square value indicates how much of variance in the dependent variable (IT project success) is explained by the independent variables (PMO functions). To convert the R square value of 0.325 into a percentage, it is multiplied by 100. As a result, the model accounts for 32.5% of variation in IT project success. An R-square value greater that 0.26 indicates a high variation in the dependent variable (Cohen, 1988). Therefore, 32.5% R square value indicates a substantial variance explained by PMO functions on IT project success.

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	499.369	5	99.874	4.231	.003[b]
	Residual	1038.631	44	23.605		
	Total	1538.000	49			
a. Dependent Variable: IT Project Success						
b. Predictors: (Constant), Multi-Project Management, Developing of Project Management Competencies & Methodologies, Monitoring & Controlling Project Performance, Strategic Management, Organizational Learning,						

Source: Own Survey, 2021

The above table which is the ANOVA table assesses the statistical significance of the model. If the model achieves a statistical significance value of Sig < 0.05, the model is significant and hence the PMO functions are good predictors of IT project success. With a value of [F (49) =4.231, *P*= 0.003], the result shows that PMO functions are good predictors of IT project success.

Independent Variables	Total Mean Score	Unstandardized Coefficients B	Standardized Coefficients Beta	Sig.
Multi-Project Management	4.27	4.285	.473	.001
Developing of Project Management Competencies and Methodologies	3.9433	5.331	.373	.008
Monitoring and Controlling Project Performance	3.8933	2.283	.213	.137
Strategic Management	3.44	1.462	.174	.228
Organizational Learning	3.0057	-1.109	-.105	.466

Source: Own Survey, 2021

According to the above regression table, the independent variables are ranked based on their contribution level towards IT project success. The variable with largest beta value ($\beta = 0.473$, $P < .01$) and the highest mean value (M = 4.27), is the multi-project management variable (PMO function 3). This suggests that the multi-project management function is the most important factor in explaining IT project success.

With a mean value of (M = 3.94) and a beta value (β = 0.373, $P < .01$), developing of project management competencies and methodologies is the second important variable in contributing to project success. On the third level, monitoring and controlling project performance function obtained a mean value of (M= 3.9833) with (β = 0.213, $P > .05$). Strategic management (PMO function 4) obtained a mean value of (M = 3.44) and a beta value (β = 0.174, $P > .05$). Organizational learning (PMO function 5) received a mean value of (M =3.0057) and a small beta value (β = -0.105, $P > .05$).

4.3.3 What are the values added by the PMO in enhancing IT project success and organization performance?

From the quantitative analysis, the data was assessed and it was discovered that PMO significantly affects IT project success in BoA. However, the quantitative results only indicate the numeric finding. After determining the PMO's positive impact on project success, it was also equally important to finding out the added values which were brought due to PMO's effect. Therefore, to answer this research question, the qualitative data from the interview was analysed using thematic content analysis.

4.3.3.1 Results of Qualitative Data

The Bank of Abyssinia Project Management Office is a dedicated organization unit for projects within the bank that is responsible for managing and directing projects from start to finish. The PMO is divided into two main departments: business analysis and program management. Three PMO staff managers were interviewed in a semi-structured manner to answer the research questions.

For the interview question that asked about the value and contribution of PMO on IT project success, the results showed that excellence in project management is the most important added value by the established PMO. Additionally, the presence of a PMO structure has enabled the bank to exercise project governance. Due to PMO, BoA was able to implement and use the ten project management knowledge areas that contribute to project success.

Additionally, prior to PMO, simply designating project managers to deal with risks and changes in projects didn't help achieve projects' original objectives. Because IT projects are dynamic and involve many stakeholders such as clients, vendors, and external consultants, they are frequently subjected to changes in time, cost, scope, and user requirements. However, after PMO was established, BoA met at least 80% of the IT

projects’ initial objectives. That's because PMO offers value by coordinating stakeholders and effectively managing any change requests that could affect the project's outcome and, ultimately, the satisfaction of project users.

PMO also delivers value by prioritizing and selecting suitable IT initiatives and rejecting those that aren't. Furthermore, PMO distributes resources to a specific IT project, such as selecting appropriate finance department expertise to participate in a finance-related IT project.

For the interview question that asked what the practiced responsibilities and functions of the BoA PMO are, the following is the response: the PMO's business analysis team is in charge of initiating and planning new IT initiatives. In addition, it creates a project charter. The program department, on the other hand, is in charge of project implementation and is responsible for following the project from beginning to end. It will then hand over the project to the responsible business unit once it is completed.

The project managers and team members monitor and control the project's performance in accordance with the plan or contract that was initially proposed with the solution-providing vendor. When circumstances don't go as planned, such as when a project's scope changes, budget varies, or time runs out, the PMO notifies top management and works to resolve the problem.

In addition, when the project implementation begins, the PMO ensures that vendors provide adequate training for project team members. When the project is completed, the PMO also follows up with the vendor to arrange for usable training for all project team members.

4.4. Interpretation and Discussion

The interpretation and meanings of the findings derived from the collected data are discussed in this section.

1. **What is the rate of success of IT projects before and after PMO was established in Bank of Abyssinia?**

According to the mean scores of the IT project success components, before PMO was founded, projects were never completed on time, were always over budget, and experienced substantial scope modifications.

Most notably, viewing the item with the lowest mean score of M = 1.98 revealed that due to the lack of PMO, the bank suffered substantially from poor financial performance. This was as a result of cost overruns in IT projects, and it was justified on cost, time, and scope items, where executing IT projects on budget received a low mean score of M =2.12. Pre-PMO, except for two items, all the items in the triple project constraints, product/system quality, and user satisfaction obtained low mean scores. The distribution results for agree response of the two exception items (f=40 for customer benefit) and (f=32 for positive impacts on customers) revealed that, even without PMO, external customers of Bank of Abyssinia gained benefits from the completed IT projects. Additionally, the projects' output had a beneficial impact on the customers who used them. With these findings, the distribution findings of 42% (f = 21) demonstrated that without PMO presence, the firm was then able to initiate future IT project work as a result of previous IT projects.

After the PMO was developed in BoA, there was a significant improvement in project cost, time, and scope, user satisfaction, and organization performance. The mean project time score of M=4.22 indicates that, on average, participants agreed that the presence of PMO improved the project completion time. The average score of M=4.3 for project cost also suggests that projects did not have cost overruns after PMO. The mean score increments for scope change went from M= 2.18 (pre-PMO) to M= 4.32 (post-PMO), indicating that IT projects had low scope modifications following PMO. When assessing the product and system quality items, for instance, the mean score for fulfilling initial project objectives went from M=2.28 (before PMO) to M=4.36 (after PMO), indicating that after PMO, project outputs better met the stated original objectives.

One of the project success measurement elements is user satisfaction. So, it was necessary to assess the level of satisfaction of IT project users (internal employees of the bank and customers) before and after PMO. To declare that the bank's internal employees are pleased with the IT projects, their performance and efficacy must improve as a result of the IT system or facility implemented for them. Employee performance item increased its mean score from M= 2.36 (pre-PMO) to M=4.4 (post-PMO). A score of M= 4.4 indicates a high level of agreement about the favourable impact of PMO on improving employee performance. After PMO, employee effectiveness scored M= 4.42 from M = 2.44 and employee decision-making scored M=4.3 from 2.48, respectively. This shows that, on average, most participants agree that the solution, system, or product developed as a consequence of IT projects has enhanced employees' work effectiveness and decision-making ability.

When PMO came to the bank, it was also important to find out whether customers were still getting the same benefits and value as they were before PMO. Interestingly, with a 4.58 mean score value, the item that measured customer benefits post-PMO held the highest mean score of all the project success measurement items. It is worth noting that, pre-PMO, this item also held the highest mean score of 3.28 from all the measurement items. Thus, it can be stated that the arrival of PMO further boosted the satisfaction of customers.

Additionally, with a mean score increment from M =2.16 (before-PMO) to M= 4.42 (after PMO), it was discovered that the bank was able to learn and gain knowledge from IT projects. Similarly, the mean score increments for financial performance and revenue increased from M= 1.98 (pre-PMO) to M= 4.36 (post-PMO), demonstrating that PMO assisted the bank in realizing financial growth from IT projects.

According to table 14, four IT project success constructs were analysed using a paired samples t-test to examine if there was a significant difference and effect between the results obtained before and after PMO. For all IT project success constructs, a Sig value of 0.0005 is obtained. This value is substantially smaller than the standard significance level of p-value, that is, $P < 0.05$. Therefore, this indicates that there is a significant difference in IT project success from the pre-PMO period to post-PMO. For the cost, time, and scope construct, the mean difference value increased from 6.36 (before PMO) to 12.8 (after PMO) which indicates that the project cost, time, and scope significantly

improved and better controlled after the PMO was established. Similarly, the mean difference value for the product/system quality construct increased from 7.64 (before PMO) to 13.00 (after PMO), indicating that the quality of systems and products of IT projects has improved as a result of PMO. Furthermore, the user satisfaction level (both employees and customers) improved to a sound mean score of 26.96, up from 16.38 previously.

For organization benefit construct, seeing the rise of mean score from 11.76 to 22.24, it may be deduced that BoA's overall performance improved by roughly 88 percent, or twice from what it had been prior to PMO. Linde and Steyn (2016) also stated that based on a survey that was done before and after the establishment of PMO, the maturity of the organization grew from 22% (pre-PMO) to 44% (after-PMO). The organization benefit construct has a t-value of 14.105. This t-value is significantly higher than the others. Because of the large magnitude of the t-value, this construct has a substantially larger significant difference in its post-PMO result than the others.

2. **What are the responsibilities, functions, and activities of the PMO that affect the successful outcome of IT projects?**

Following the discovery that the presence of a project management office had an impact on project success, it was important to assess which specific PMO roles, services, responsibilities, and activities have contributed to that success. When the mean score values of the items are ranked, the roles with the highest scores contribute significantly to the project's success. These roles are: reporting project status to top management (M=4.38), monitoring IT project performance and prioritizing new IT projects (M =4.34), allocating resource for projects (M = 4.3), developing project management and managing multiple projects (M=4.26), providing project management software (M= 4.24), adopting standard project management methodology (M=4.2), managing portfolios (M= 4.18), utilizing project closure process (M = 4.1), advising top management on projects (M=4.08), training project managers and team members (M = 4.04), and monitoring the performance of PMO (M=4.00).

Among the PMO activities, reporting project status to top management obtained the highest mean score. This suggests that project success is most likely when the PMO promptly discloses and discusses with top management any unexpected scope modifications, risks, cost variations, or other issues. This means that for any problems

that cause projects to fail, rapid decisions and solutions can be made. This finding is consistent with that of Hoobs & Aubry (2007), who found that 83% of PMOs agreed that reporting project status to top management was given the highest level of importance among the 24 PMO-specific functions.

The least important roles in contributing to IT project success are implementing risk database (M=2.08), conducting post-project reviews (M=2.36), implementing benefits management (M=2.38), executing project audits (M= 2.64), and developing risk procedures (M=2.66). Participating in strategic planning and management (3.86), using project scoreboards (M=2.96) and standardizing documents (M=2.82), and providing specific training on project management software (M=3.56) moderately contributed to the project's success. According to this study's findings, implementing benefits management did not add to the success of IT projects. This contrasts with the findings of Barbalho et al., (2017), who found that management of benefits was linked to cost performance, which is one of the project success metrics.

After calculating the mean scores of the items under each independent variable, their overall contribution towards project success was calculated using beta values. Due to the highest mean and beta value (M = 4.27 and $\beta = 0.473$), multi-project management (PMO function 3) has the highest contribution in explaining IT project success. The tasks in the multi-project management role enable the PMO to determine where a project is feasible for implementation and will reap advantages before it begins. Following the selection of a project, this task ensures adequate resources are allocated for the project. If this task is not given enough attention, the project might be under budget or behind schedule. Other new projects may emerge while implementing a given project. This function assigns the PMO the responsibility of determining whether new projects can be combined with the present one and which should be abandoned. As a result, this function is a determining and primary factor for the success or failure of the project. The result ($\beta = 0.473$, $P < .01$) indicates that, at a significant level, for a one-unit increase in multi-project management, there would be a 0.473 average increase in IT Project success.

Developing of project management competencies and methodologies (PMO function 2) is the second important independent variable in contributing to project success. The successful completion of a project is also aided by the use of project management

practices, methods, and tools. Using project management software tools, for example, is critical to conduct scheduling, cost control, and change management. The result (β = 0.373, $P < .01$), indicates that, at a significant level, for a one-unit increase in PMO function 2, there would be a 0.373 average increase in IT Project success.

For a one-unit increase in monitoring and controlling project performance (PMO function 1), there would be a 0.213 average increase in project success. But, the statistical significance level of $P < .05$ was not met. This is because the combined effect of the group function has concealed the major contribution of individual tasks like reporting project status to top management. There are other activities in the group functions that yielded a lower mean score, as a result, a reduced contribution to success. On this group function, the activity that caused the group effect to decrease is developing and using a project scoreboard.

Similarly, strategic management (PMO function 4) did not meet the $P < .05$ significance level. Although specific actions such as providing advice to top management obtained a 4.08 mean score, doing benefits management obtained one of the lowest mean values of 2.38. This has an impact on the group function's overall effect. However, due to the positive β value (β = 0.174), there is a positive contribution and relationship between the dependent and independent variable. Organizational learning (PMO function 5) has a negative sign and a small beta value (β = -0.105). This can be understood to mean that the activities within the organizational learning PMO function have a negative impact on project success. Thus, for a one-unit increase in the ordinal scale of organizational learning, the result indicates there would be a 0.105 average decrease in the dependent variable IT Project success.

CHAPTER FIVE

5. SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1. Introduction

This chapter presents a brief summary of the research, conclusions from significant findings, recommendations for Bank of Abyssinia PMO, and suggestions for further study based on the findings reported.

5.2. Summary

When working on several projects, it's critical to assess and measure the success of each one before moving on to the next. However, not only is it vital to measure success, but it is also critical to understand what drives success. Employing project management principles in a project has known to be a major determinant of project success. It is also worth noting that Project Management Office and its functions are central to the development and implementation of project management principles. As a result, it is important to investigate PMOs as an essential factor of project success.

The research evaluated the impact of the presence of a PMO and its functions on the success of IT projects at the Bank of Abyssinia. Based on multiple researched literature, a study instrument was sent to Bank of Abyssinia PMO staff, project managers, project team members, and other personnel affected by IT projects. Only 50 people out of a total of 60 responded. That is, a total of 83.3 percent of the target population responded to the questionnaire. When it came to answering the questions, 56% of the participants possessed a master's degree, while 72% of them received training in project management and associated areas.

Then, the information gathered was entered into SPSS and analysed. Descriptive statistics, a paired sample t-test, and regression analysis were used to determine if the PMO and its roles have contributed to the success of IT projects. The results from the analysis revealed that with a mean rise of 12.8 (post-PMO) from 6.36 (pre-PMO), project cost, time, and scope were better controlled after PMO. The product/system quality construct having a mean increment of 13.00 (post-PMO) from 7.64 (pre-PMO) indicates, the quality of systems and products of IT projects improved as a result of PMO. Similarly, for user satisfaction construct, a mean increment of 26.96 (post-PMO)

from 16.38 (pre-PMO) was achieved. The mean for organization benefits construct also increased from 11.76 (pre-PMO) to 22.24 (post-PMO).

Out of the five PMO functions, with the highest mean & beta value (M = 4.27 and β = 0.473), multi-project management contributes the most to IT project success. The second contribution to IT project success was attained by developing of project management competencies & methodologies function. However, organizational learning function with a mean & beta value (M =3.00 and β = -0.105) obtained a negative impact on IT project success.

5.3. Conclusion

Conclusions are derived from the findings based on the obtained and examined data. The majority of those who responded are educated, have completed project management training, and have worked on IT projects. This assured that the target population had sufficient knowledge on the area of study to respond to the questionnaire. Only 16 % of the respondents accounted for Project Management Office (PMO) staff. When compared to the number of project managers and project team members, this is a fairly small number. This concludes that the bank has only a few dedicated and permanent PMO staff members.

Before the PMO, the findings of project success measuring items led to four key conclusions. The first is that before the PMO was implemented, the bank barely satisfied the iron triangle (cost, time, and scope) constraints. It failed to meet deadlines on projects. In addition, between project phases, there were significant cost overruns and significant scope changes.

Second, the IT projects did not meet the project objectives or organizational strategies that were originally envisioned. Furthermore, they did not solve the problems that were intended to be solved. These two findings conclude that, before PMO, the IT projects' outcomes were of poor product and system quality. Besides, as a result of the bad outcomes of projects, the capability and performance of the bank declined. It was also difficult to pinpoint the lessons acquired from each project. Most importantly, the bank's financial development slowed as a result of multiple project cost overruns.

Finally, in contrast to these findings, the results demonstrated that customers were satisfied and benefited from IT projects even before PMO, thus fulfilling one of the

project success dimensions which is user satisfaction. This concludes that IT projects were able to satisfy their users at the cost of losing company resources and not meeting organization goals. Despite the bank's project failures, it was nevertheless able to initiate future new projects.

All of the IT project success measurement constructs after PMO have mean values higher than the ones before PMO. After the PMO was established in BoA, project cost, time, and scope are better controlled. Since PMO is responsible for prioritizing, managing, and implementing the right IT projects, the output of the projects delivers the right IT system or product. As a result, this system will enhance the working performance and efficacy of the bank employees. Finally, the findings demonstrated that, as a result of PMO, BoA's total capacity, financial growth, and performance increased twofold.

The findings of the study confirmed that the presence of a PMO in the bank had a good impact on IT project success and thus considerably improved it. In order to thoroughly assess the PMO's impact on project success, it was also necessary to investigate which PMO role and function contributed the most to IT project success. According to the data, the PMO function 3 (multi-project management), which has a high mean and beta value, contributes the most to the success of IT projects. This is supported by the qualitative finding that prioritizing and selecting IT projects enhances value by eliminating projects that result in infeasible project results and resource waste.

The second factor to IT project success is PMO function 2 (developing project management competencies & methodologies). Particularly, the roles such as developing project management, implementing standard project management methodologies, utilizing project closure process, providing training and mentoring for project managers and team members, and using project management software tools significantly affect project success. On the other hand, establishing risk assessment procedures and employing standardized documentation like timesheets has little impact on project success.

The activities in PMO function 1 (monitoring and controlling project performance) contributed on a third level. As a result of monitoring project performance, the PMO has been able to successfully handle any scope adjustments and budget variances that may arise throughout project execution. Changes are also regulated by reporting arising

issues and project status to upper management. This contributes to the project's success. Although the research discovered that the PMO doesn't use project scoreboard or visual tools to display the progress and status of a project when reporting the status.

PMO function 4 (strategic management) contributed significantly less. Benefit management, which involves tracking and realizing benefits from an IT project, is a poor contributor to IT project success. The PMO function 5 (organizational learning) contributes the least to the success of IT projects. Conducting project audits and post-project reviews have little impact on project success. Furthermore, adopting a risk database and having a lesson learned database had no bearing on the project's success. The quantitative findings from the questionnaire are compared to the qualitative data retrieved from the interview. As a result, three of Bank of Abyssinia's PMO group functions (1, 2, and 3) have a higher impact on the success of IT projects than the rest.

5.4. Recommendations

The following recommendations are based on the research findings and conclusions. The study examined the effects of the current BoA PMO and its roles on IT project success and offered verifiable and quantifiable data. The results concluded that PMO does affect IT project success. Thus, as a result of the research findings, senior managers will now have a better knowledge of the PMO's influence and value in executing successful IT projects. The insights will help senior management make decisions for expanding efforts to cultivate the current PMO. Accordingly, it is recommended that upper management expand the number of staff members in the PMO who are the backbone of carrying out the project success contributing activities.

From what has been observed in the paired-samples t-test, PMO's presence in the bank highly proliferated the performance of IT projects, and hence the bank's growth. To obtain an even more improved project success rate, it is recommended that the bank increases its effort in developing and fostering its current PMO.

Under the five PMO group functions, there are 24 specific PMO roles. 16 of them contributed to the success of IT projects, while the remaining eight did not. The roles which are discovered to have an impact on IT project success should be deemed best practices. PMOs should verify that they are fulfilling these duties.

It also suggested that the bank's PMO look into why some of its tasks, such as risk assessment, post-project reviews, and benefits management contributed the least to project success. Moreover, the research has demonstrated that adopting standard project management processes and software tools improve IT project success. So, it is advised that the PMO facilitates more project management competency training to project managers and team members.

5.5. Suggestion for Further Study

Based on quantitative and qualitative data, this study focused on examining the impact of PMO functions on IT project performance. The following suggestions are provided for further research.

This study used a case study research method and focused on only one organization. It is suggested that more studies be conducted with several banks that deploy IT projects and have PMOs. Moreover, the PMO functions that contributed significantly at the Bank of Abyssinia may not produce the same results in other banks. Thus, it is suggested that subsequent research be conducted using different banks and a bigger sample size.

Furthermore, the case organization that is chosen for this research is limited to the banking sector. Additional research can be conducted with the participation of other manufacturing, business, and IT companies. Research on Project Management Office (PMO) is a new field of study, particularly in Ethiopia. As a result, it is suggested that project management professionals and practitioners take the initiative to conduct studies in the field. Finally, the Bank of Abyssinia should perform internal research to track and evaluate the continual impact of the Project Management Office (PMO) on project success.

References

Alblooshi, Amna. (2018). “Effect of PMO and its Attributes on Project Success.”

Alsadeq, I., Akel, M., and Hamamo, N. (2011). “Establishing a Project Management Office (PMO) Using the Agile Approach”

Athanasios Lamproua and Dimitra Vagionab. (2018). “Success Criteria and Critical Success Factors in Project Success: A Literature Review.”

Babaeianpour, Marzieh and Zohrehvandi, Shakib. (2014). “Using Project Management Office (PMO) To Improve Project Management Abilities”, International Journal of Business and Economics, Vol. 6, pp. 153-165

Baccarini, David and Collins, Adam. (2003). “Critical Success Factors for Projects.”

Barclay, Corlane. (2008). “Towards an Integrated Measurement of IS Project Performance: The Project Performance Scorecard”, Information Systems Frontiers, Vol. 10, pp. 331-345

Biruk Dage Borga (2020). “Assessment of Project Management Practices in Case of Bank Of Abyssinia PMO IT Projects”

Christine Xiaoyi Dai and William G Wells. (2004). “An Exploration of Project Management Office Features and Their Relationship to Project Performance”, International Journal of Project Management, Vol. 22 No. 7, pp. 523-532

Cohen, J. (1988). “Statistical Power Analysis for The Behavioural Sciences” (2nd ed.). Hillsdale, NJ, NJ: Lawrence Erlbaum

Dahlberg, Tomi and Kivijärvi, Hannu. (2016). “Towards an Integrative, Multilevel Theory for Managing the Direct and Indirect Impacts of IT Project Success Factors”

Darling Eric and Whitty Jonathan. (2016). “The Project Management Office: It’s Just Not What It Used to Be”, International Journal of Managing Projects in Business. Vol. 9, pp. 282-308

Delone, William and McLean, Ephraim. (1992). “Information Systems Success: The Quest for the Dependent Variable”, Information Systems Research, Vol. 3, pp. 60-95

Desouza, Kevin and Evaristo, J. (2006). “Project Management Offices: A case of knowledge-based archetypes”, International Journal of Information Management. Vol. 26, pp. 414-423

El-Masri, Mazen. (2009). “A Model of IS Project Success”

E. Sulistiyani and S. Y. Tyas. (2019). "Success Measurement Framework for Information Technology Project: A Conceptual Model.” Icomitee, pp. 43-48,

George, D., and Mallery, P. (2003). “SPSS for Windows Step by Step: A Simple Guide and Reference.”

Hobbs B & Aubry M. (2007). “A Multi-Phase Research Program Investigating Project Management Offices (PMOS) The Results of Phase 1”, Project Management Journal, Vol. 38 No. 1, pp. 74-86

Jan Terje Karlsen, Jeanette Andersen, Live S. Birkely And Elise Ødegård. (2005). “What Characterizes Successful IT Projects”, International Journal of Information Technology & Decision-Making, Vol. 04 No. 04, pp. 525-540

John Wateridge. (1995). “IT Projects: A Basis for Success.” International Journal of Project Management, Vol. 13 No. 3, pp. 169-172,

Kim W Petersen (2020). “Project Management Office Performance Variables That Influence Project Success: A Correlational Study”

Kothari, C.R. (2004). “Research Methodology: Methods and Techniques.”

Kutsch, Elmar & Ward, John & Hall, Mark & Algar, John. (2015). “The Contribution of the Project Management Office: A Balanced Scorecard Perspective”, Information Systems Management, Vol. 32, pp. 105-118.

Lech, Przemysław (2013). “Time, Budget, And Functionality? — IT Project Success Criteria Revised Time, Budget, And Functionality? — IT Project Success.”

Leonancy Francis (2015). “The Influence of Project Management Office on Information Technology Project Success: Case of National Microfinance Bank Plc.”

Lim, C.S and Zain, Mohamed. (1999). “Criteria of project success: An exploratory re-examination”, International Journal of Project Management, Vol. 17, pp. 243-248

Linde, J and Steyn, H (2016). “The Effect of a Project Management Office on Project and Organisational Performance: A Case Study”, South African Journal of Industrial Engineering, Vol. 27 No. 1, pp. 151-161

Marnewick, Carl. (2015). “Benefits of Information System Projects: The Tale of Two Countries”, International Journal of Project Management, Vol. 34

Mihić Marko, Petrović Dejan, and Obradović Vladimir (SCG). (2006). “Strategic Project Management – New Management Approach”

Milosevic, Dragan & Patanakul, Peerasit. (2005). “Standardized Project Management May Increase Development Project Success”, International Journal of Project Management, Vol. 23, pp. 181-192

Nureni, Yekini. (2014). “Information Communication Technology (ICT) Concepts and Application.”

Ofer Zwikael & John Smyrk. (2009). “The Role of Projects in Organizations – an Executive Leadership Approach”

Pallant, J. (2011). “SPSS survival manual: A step by step guide to data analysis using the SPSS program”. 4th Edition

Patanakul P, Iewwongcharoen B, Milosevic D. (2010). “An Empirical Study on the use of Project Management Tools and Techniques across Project Life-Cycle and their Impact on Project Success”, Journal of General Management, Vol. 35 No. 3, pp. 41-66

Pinto, Jeffery and D.P Slevin. (1988). “Project Success: Definitions and Measurement Techniques”, Project Management Journal

Philbin, Simon. (2016). “Exploring the Project Management Office (PMO) – Role, Structure and Processes.”

Project Management Institute (PMI). (2008). “A Guide to the Project Management Body of Knowledge, Project Management Institute.”

Roger Atkinson. (1999). “Project Management: Cost, Time and Quality, Two Best Guesses and A Phenomenon, It’s Time to Accept Other Success Criteria”, International Journal of Project Management, Vol. 17 No. 6, pp. 337-342

Salameh, H., (2014). “A Framework to Establish A Project Management Office”, European Journal of Business and Management, Vol. 6 No. 9, pp. 19-26

Saunders, M., Lewis, P. & Thornhill, A. (2009). “Research Methodology for Business Studies.”

Schmidt Rc, Lyytinen K, Keil M and Cule Pe. (2001). “Identifying Software Project Risks: An International Delphi Study.”

Sima Sabahi & Mahour Mellat Parast. (2020). “The Impact of Entrepreneurship Orientation on Project Performance: A Machine Learning Approach”, International Journal of Production Economics, Vol. 226

Singh, Rajendra & Keil, Mark & Kasi, Vijay. (2009). “Identifying and Overcoming the Challenges of Implementing A Project Management Office”, No.18, pp. 409-427

Slevin, Dennis and Pinto, Jeffrey. (1986). “The Project Implementation Profile: New Tool for Project Managers”, Project Management Journal, Vol. 17 No. 57

Steinfort, Paul & Walker, Derek. (2007). “Critical Success Factors in Project Management Globally and How They May Be Applied to Aid Projects.”

Tesfaye Admassie Aberra. (2018). “The Relationship between Project Management Office Maturity and Organizational Project Management Maturity: The case of Bank of Abyssinia Information Systems Project Management Office.

Wyngaard, C.V., Pretorius, J., & Pretorius, L. (2012). “Theory of The Triple Constraint — A Conceptual Review Formation Systems Project Management Office.”, IEEE International Conference on Industrial Engineering and Engineering Management, 1991-1997

Appendices

QUESTIONNAIRE

ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMENT

Dear Respondents,

At first, I would like to thank you for your consent to participate on this questionnaire. This questionnaire was created to collect data for my research which aims to solve Bank of Abyssinia's current problem. The research titled by, "The Effect of Project Management Office on the Success of IT Projects: The Case of Bank of Abyssinia in Addis Ababa" studies the effect of Bank of Abyssinia's current Project Management Office (PMO) on IT project success.

For the purposes of this survey, A Project Management Office (PMO) is described as an organizational entity created to assist project managers and teams across the organization in implementing project management concepts, procedures, methodologies, tools, and techniques.

I want to reassure you that the information you provide on the questionnaire will be kept completely confidential. Thank you for taking the time to respond and for being candid.

Please think of a completed project in which you have recently been involved. An example would be:

- **IT infrastructure design and development project**
- **Application system development project**
- **Web development project**

Part 1: General Information

1. Gender

   ☐ Male ☐ Female

2. What is the highest educational degree you have attained??

   ☐ Bachelors

   ☐ Masters

   ☐ PhD

3. Have you taken Project Management Professional (PMP) related trainings?

   ☐ Yes

   ☐ No

4. Which of the following best describes your role in the IT projects that you participated in? (Select all that applies)

   ☐ Project Management Office (PMO) Staff

   ☐ Project Manager

   ☐ Support Manager on Project Team

   ☐ Project Coordinator

   ☐ Project Team Member (technical)

   ☐ Project Team Member (administrative)

   ☐ Member of business unit affected by the project

5. The IT Project was primarily to serve the needs of:

   ☐ internal employees of the bank

   ☐ external customers or users

   ☐ both

   ☐ unknown

Part 2: Questions on IT Project Success

The following questions relate to your evaluation of the ultimate performance of the completed IT projects in which you have recently been involved**. Before and After Bank of Abyssinia established a Project Management Office (PMO), how successful were the IT projects?**. **Please circle the number showing the extent to which you agree or disagree** with the following statements as they relate to the outcome of the completed IT project.

1 - Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 -Strongly Agree N/A – Not Applicable												
IT Project Success	**Before PMO was established**						**After PMO is established**					
IT projects were completed on time.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
IT projects were completed within the dedicated cost.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
IT projects have had minimum number of scope changes.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The outcome of the IT projects meets the initial objectives.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The output of IT projects seems to do the best job of solving the initial problem.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The results of IT projects improved the way users used to perform tasks in the office.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The outcome of the IT projects has increased employee effectiveness.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The outcome of the IT projects has improved employee performance.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The outcome of the IT projects has improved employee decision making.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**

IT Project Success	Before PMO was established						After PMO is established					
The outcome of the IT projects has brought a positive impact on employees who use it.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The outcome of the IT projects has benefited customers.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The outcome of the IT projects has brought a positive impact on customers who use it.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The completed IT projects have met organisational goals and business strategies which were set in the beginning.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The IT projects helped the bank learn and gain knowledge.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The IT projects have improved the bank's organization capability.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
The IT projects have increased the financial performance and revenue of bank.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
Past and current IT projects enable other IT project works in the future.	1	**2**	**3**	**4**	**5**	**N/A**	1	**2**	**3**	**4**	**5**	**N/A**
Source: Adapted from Stewart (2010) and Irfan et. al., (2019)												

Part 3: Questions on PMO Functions

The second part of this questionnaire attempts to obtain information with respect to your organization's current Project Management Office (PMO) functions and services. The following table lists the responsibilities and activities of a PMO when doing projects. **For each IT project Bank of Abyssinia (BoA) carried out, please circle the number showing the extent to which you agree or disagree on the activities and responsibilities performed by BoA PMO.**

1 - Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 -Strongly Agree N/A – Not Applicable							
Project Management Office (PMO) Functions		**Circle the answers**					
Monitoring & Controlling Project Performance	IT project performance was monitored and controlled, and this contributed to IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
	In each IT project, project status was reported to top management and this contributed to the success of IT Projects.	1	**2**	**3**	**4**	**5**	**N/A**
	For each IT project, a project scoreboard (simple visual software illustrating the progress and status of a project) was developed and maintained, and it contributed to IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
Developing of Project Management Competencies & Methodologies	For the IT projects, standard project management methodology was developed and implemented, and it has positively affected IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
	Project management within the organization was developed, and it positively contributed to IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
	Project management software and tools (MS Project, Gantt Chart) was made available for use, and this contributed to the success of IT Projects.	1	**2**	**3**	**4**	**5**	**N/A**
	Risk assessment procedures were established, and this positively affected IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
	Documentation standards (progress/status reports, and time sheets, etc..) were used, and this contributed to IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**

	Project closeout process were used, and this positively affected the IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
	Competency of personnel including training and mentoring for project managers and team members was provided, and this contributed to the success of IT Projects.	1	**2**	**3**	**4**	**5**	**N/A**
Multi-Project Management	Multiple IT projects were properly coordinated and managed, and this has an effect on IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
	New IT projects were identified, selected, and prioritized, and this has a positive effect on the success IT Projects.	1	**2**	**3**	**4**	**5**	**N/A**
	Resources between IT projects were allocated, and this contributed to the success of IT Projects.	1	**2**	**3**	**4**	**5**	**N/A**
	One or more portfolios (a set of projects) were managed, and this has contribution to IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
Strategic Management	For IT projects, PMO participated in strategic planning and management, and this contributed to IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
	Advice to top management about IT projects was provided, and this has an effect on the success of IT projects.	1	**2**	**3**	**4**	**5**	**N/A**
	Benefits management was done, and this has contribution to IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
Organizational Learning	Project documentation was archived and managed, and this has contribution to success of IT projects.	1	**2**	**3**	**4**	**5**	**N/A**
	Project audits were conducted, and this has an effect on the overall success of IT projects.	1	**2**	**3**	**4**	**5**	**N/A**
	Post-project reviews were conducted, and this has contribution to IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
	A database of lessons learned was implemented and managed, and this affected the success of IT Projects.	1	**2**	**3**	**4**	**5**	**N/A**
	A risk database was implemented, and this has an effect on IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**

	Project team members received adequate training on relevant project management software packages, and this contributed to IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
	The performance of the PMO was monitored and controlled, and this has an effect on IT Project success.	1	**2**	**3**	**4**	**5**	**N/A**
Source: Adapted from Stewart (2010) and Hoobs & Aubry (2007)							

Interview Questions

1. What are the direct responsibilities and roles of Bank of Abyssinia PMO?
2. How would you rate the PMO's contribution and value to your organization in general?
3. How effective are your organization's IT projects now that PMO has been implemented??
4. What are the PMO practices in your organization that are related to IT project success?

Source: Own, 2021