SCHOOL OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMENT

Determinants of IT project implementation success: the case of CBE

A project work submitted to Office of Graduate Studies of Addis Ababa University School of Commerce in partial fulfillment of the Requirements for the Degree of Master of Arts in Project Management

MA PROJECT WORK

BY:

Selam Fesha

June, 2023

Addis Ababa, Ethiopia

ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMENT

Determinants of IT project implementation success: the case of CBE

By: Selam Fesha

Advisor's Name: Dr. Tenkir

A project work submitted to Office of Graduate Studies of Addis Ababa University School of Commerce in partial fulfillment of the Requirements for the Degree of Master of Arts in Project Management

June, 2023

Addis Ababa, Ethiopia

Declaration

I declare that this project work entitled “Determinants of IT project implementation success: the case of CBE” is my original work. This project work has not been presented for any other university and it’s not concurrently submitted in candidate of any other degree and that all sources of material used for project work have been duly acknowledge.

Name: Selam Fesha

Signature …….

June, 2023

Letter of Certification

This is to certify that the Project work is prepared by Mrs. Selam Fesha entitled "Determinants of IT project implementation success: the case of CBE" and submitted in fulfillment of the requirement for the Degree of Masters of Arts in Project Management complies with the regulation of the university and meet the requirement with the respect to originality and quality.

APPROVED BY BOARD OF EXAMINERS

Dr. Tenkir,		Signature	Date
		……	…….
Dr.	,	Signature	Date
Examiner (Internal)		……	…….
Dr.	,	Signature	Date
Examiner (External)		……	…….
Dr.	,	Signature	Date
Chair Person		……	…….

Acknowledgements

I would like to begin by expressing my sincerest gratitude to the Almighty God for providing me with the strength, perseverance, and guidance to complete this project work. Without His blessings, this achievement would not have been possible.

I would also like to extend my deepest appreciation to my academic advisor, Dr. Tenkir, for his invaluable guidance, unwavering support, and constructive feedback throughout the research process. I am also grateful to Dr. Mengistu for his valuable feedback and suggestions, which have helped me, improve my research. His insights and expertise have been instrumental in shaping the direction and quality of this project work.

My research would not have been possible without the support of the Commercial Bank of Ethiopia and its employees. I would like to thank them for their cooperation, participation, and willingness to share their knowledge and expertise, which have been essential to the success of my research. I would also like to extend my heartfelt gratitude to the volunteers who took the time to fill out my questionnaire. Their generosity and willingness to contribute their time and knowledge have been invaluable to my research.

In addition, I would like to express my gratitude to my husband for his unwavering support, encouragement, and love throughout this journey. His support has been instrumental in helping me overcome the challenges and obstacles that I encountered along the way.

Finally, I would like to acknowledge the love, support, and encouragement of my family, especially my mom. Their unwavering belief in me and their constant encouragement have been a source of strength and inspiration throughout my academic journey.

In conclusion, I am deeply grateful to all those who have contributed to my academic and personal growth in one way or another. Your support and encouragement have been instrumental in helping me achieve my goals, and for that, I am forever grateful.

ABSTRACT

The objective of this study was to pinpoint the factors that contribute to the successful implementation of IT projects within the Commercial Bank of Ethiopia (CBE). Specifically, the study aimed to pinpoint the factors that influence the success of IT projects implemented by the bank from 2018 to 2022. This research seeks to examine the factors that affect the achievement of successful outcomes in IT project implementation within the PMO of CBE. The findings will offer valuable insights that can be utilized to enhance the success rate of IT projects in the bank. The research employs a quantitative and qualitative data collection and analysis method. The research design is both explanatory and descriptive seeking to form causal relationships between variables while providing a detailed and accurate description of the phenomenon. The target population of the study was five IT projects that were implemented by CBE between 2018 and 2022. A total of 73 project participants were identified, and a questionnaire was distributed to them to collect data on project success factors. Of the 73 questionnaires distributed, 55 were returned, resulting in a response rate of 75.3%. The collected data was analyzed using SPSS version 20, and multiple linear regressions were used to identify the determinants of IT project implementation success. The study identifies project management methodologies, resource allocation and management, and project team composition as key factors in IT project success in the Commercial Bank of Ethiopia, with project team composition having the most significant impact. The study showed that all three determinants of IT project success which are project management methodologies, resource allocation and management, and project team composition positively influenced the successful implementation of IT projects. The study recommends that the bank prioritize building strong and well-composed project teams, adopt a holistic approach to resource allocation and management, and customize project management methodologies to suit their specific needs. The study acknowledges limitations and suggests areas for future research to provide a more comprehensive understanding of IT project success determinants. Overall, the study provides valuable insights for organizations seeking to improve their approach to IT project implementation and increase their success rate.

Key words: Implementation, methodology, composition, allocation

List of abbreviations

ANOVA - Analysis of Variance

CBE - Commercial Bank of Ethiopia

IEEE - Institute of Electrical and Electronics Engineers

IT - Information Technology

PMO- Project Management Office

PMBOK - Project Management Body of Knowledge

PRINCE2 - Projects in Controlled Environments version 2

RBV - Resource-Based View

ROI - Return on Investment

SPSS - Statistical Package for Social Science

TAM - Technology Acceptance Model

Table of Contents

List of tables

List of figures

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The Commercial Bank of Ethiopia (CBE) is one of the largest banks in Ethiopia, with a wide range of services and operations across the country. As with many organizations in the banking sector, CBE relies heavily on information technology (IT) to support its operations and services. However, properly implementing IT projects can be a difficult process with numerous factors that can affect the project's success or failure.

Information technology projects are unique because they often involve complex technical systems and require close collaboration between IT professionals and business stakeholders. Unlike other types of projects, IT projects often have a high degree of uncertainty and can be subject to changes in technology and business requirements.

Because it illuminates the elements that affect the success or failure of IT projects in a practical setting, the study of the determinants of IT project success in the context of the Commercial Bank of Ethiopia is significant. The success of IT projects can have a substantial impact on the organization's capacity to compete and grow in the market. The banking industry is largely dependent on IT infrastructure and systems.

This study can help other businesses in the banking sector and beyond by analyzing the factors that contribute to the success of IT projects at the Commercial Bank of Ethiopia. It can assist IT specialists and project managers in identifying the critical elements that contribute to project success and in formulating plans to reduce risks and guarantee positive project outcomes. In the end, this research may help to continue to advance IT project management techniques and finally improve business outcomes for enterprises.

The Project Management Office (PMO) of CBE is responsible for overseeing the implementation of IT projects in the bank. However, despite the efforts of the PMO, many IT projects in the bank have faced challenges in implementation, resulting in delays, cost overruns, and other issues that have hindered the success of these projects.

There is a need to look into the factors that affect how IT projects are implemented given the significance of IT projects in the banking industry and the difficulties encountered in their implementation. Project managers, IT specialists, and other stakeholders can design strategies and policies to increase the success rate of IT projects in the bank by understanding the elements that affect the success of IT projects in the bank.

Modern firms now cannot function without information technology (IT), and IT projects are frequently used to boost productivity and acquire a competitive edge. IT projects refer to any project that involves the development, implementation, or maintenance of information systems or technology solutions, such as software applications, hardware, or networks (Chia-Ing Yu, Houn-Gee Chen, Gary Klein & James J. Jiang, 2013, p. 28). However, IT projects are often complex, risky, and prone to failure, with many studies reporting high failure rates (Kappelman, L. A., McKeeman, R., & Zhang, L., 2006). To enhance project results and boost return on investment (ROI) for enterprises, it is necessary to identify the factors that determine successful IT project implementation.

The Commercial Bank of Ethiopia (CBE) must employ technological solutions because they can assist the organization enhance services, streamline operations, and solidify its position as a market leader. With more than 1,300 branches and more than 17 million clients, CBE is the biggest commercial bank in Ethiopia (Commercial Bank of Ethiopia, n.d.). To enhance its operations and services, the bank has been spending a lot of money on IT projects.

To identify the success factors for IT projects in CBE, this project work draws on existing literature on IT project success factors. Project management methodology, resource allocation and management, and project team composition are among the success factors that can affect the outcome of IT projects. Success factors are essential for the success of IT projects, and multiple studies have found various success factors that might influence their success.

Project management methodologies are frameworks designed to guide the management of projects from initiation to closure. A crucial component of IT project success has been highlighted as the application of project management methodologies (Kappelman, L. A., McLean, E. R., Johnson, V., & Torres, R., 2013, p. 31). Project management methodologies

offer an organized manner of managing projects, which can assist guarantee that they are completed on schedule, within budget, and to the desired level of quality.

Numerous project management methodologies, such as the agile methodology and the Project Management Body of Knowledge (PMBOK), have been developed over time. The PMBOK is a widely used project management technique that makes best practices (PMI, 2017). Contrarily, the Agile methodology is an adaptable and flexible way of project management that places a focus on customer satisfaction, teamwork, and change-responsiveness (Beck, K., Beedle, M., Van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., ... & Thomas, D., 2001).

Resource allocation management is another critical success factor for IT projects. Resource allocation involves the identification, allocation, and management of resources, such as personnel, equipment, and funding, to support project activities. In order to make certain that projects have the resources they need to achieve their objectives, effective resource allocation and management is important (Chia-Ing Yu, Houn-Gee Chen, Gary Klein & James J. Jiang, 2013, p. 28).

Several factors can influence resource allocation management, such as project scope, project complexity, and organizational culture. For instance, projects with a larger scope may require more resources than projects with a smaller scope. Similar to this, more specialized resources might be needed for projects with a higher level of complexity than for projects with a lower level. Organizational culture can also influence resource allocation management, as it can impact the availability and allocation of resources (Chia-Ing Yu, Houn-Gee Chen, Gary Klein & James J. Jiang, 2013, p. 28).

Another important success factor for IT projects is the team composition. The project team often includes individuals with various specialties that collaborate to accomplish project goals. Project team composition can affect team dynamics, communication, and collaboration, which can have an impact on project success (Chia-Ing Yu, Houn-Gee Chen, Gary Klein & James J. Jiang, 2013, p. 28).

The existing literature on IT project success, while comprehensive, is not specific to the context of the Commercial Bank of Ethiopia (CBE). While some studies have explored the determinants of IT project success in the banking sector, few have focused on CBE in particular. As a result,

there is a gap in the body of knowledge regarding the factors that influence IT project success in the context of CBE.

Furthermore, while some studies have identified the critical success factors for IT projects, there is limited research on how these factors specifically apply to CBE. For instance, the distinct cultural and regulatory environment in which CBE operates may have an effect on the success of IT projects. The effectiveness of IT projects should also be examined in relation to the specific project management methodologies, resource allocation management techniques, and project team composition procedures used by CBE.

This project work seeks to fill the gap in the literature by investigating the factors that influence IT project success within the framework of CBE. Specifically, the project work investigates how project management methodologies, resource allocation management, and project team composition impact IT project success at CBE. By focusing on CBE, the study provides insights into the unique challenges and opportunities faced by the bank in implementing IT projects successfully. Ultimately, the study contributes to the ongoing improvement of IT project management practices in the banking sector and beyond.

1.2 STATEMENT OF THE PROBLEM

CBE is a significant institution that heavily depends on information technology (IT) to facilitate its operations and services. Nevertheless, the execution of IT projects in the bank has encountered difficulties, leading to setbacks, increased expenses, and other problems that have impeded the triumph of these projects. According to (Van der Linde, J., & Steyn, H., 2016, p. 151), despite the endeavors of Project Management Offices (PMO) in multiple organizations, numerous IT projects do not achieve their goals, and organizations therefore have been unable to fully capitalize on the advantages of these projects.

While PMO is accountable for supervising the execution of IT projects in the bank, it is crucial to recognize the elements that impact the triumph or downfall of these projects. Without this comprehension, project managers, IT experts, and other parties involved may not be capable of devising efficient tactics and regulations to enhance the success rate of IT projects in the bank. The purpose of this study is to determine the factors that affect how IT projects are implemented

in the PMO of CBE and to offer insights that can be used to increase the success rate of IT projects at the bank.

Project managers, IT specialists, and other stakeholders can design strategies and policies to solve the difficulties encountered in the implementation of IT projects in the PMO of CBE by identifying the elements that affect the success of IT projects in the bank. While there is a significant body of literature on project management and IT project success, there are theoretical and empirical gaps that need to be addressed to fully understand the factors that influence the success of IT projects.

The absence of an all-inclusive framework that incorporates the different aspects that affect an IT project's success is one example of a theoretical gap. As an illustration, whereas some studies concentrated on the effect of project management procedures on the success of IT projects, others stressed the significance of organizational variables like culture and leadership. A more thorough framework that incorporates these different elements could offer a more comprehensive understanding of IT project success in the context of CBE.

Lack of in-depth research explicitly focusing on IT project success in the context of CBE is one example of an empirical gap. Although there are many studies on IT project success in general, the special context of CBE may necessitate a more specialized approach to pinpointing the elements that influence IT project performance. Furthermore, empirical studies that focus on the challenges faced by project managers, IT professionals, and other stakeholders in CBE can provide valuable insights into the specific strategies and policies that can be developed to address these challenges.

In conclusion, it is crucial to comprehend the factors that affect the performance of IT projects in CBE in order to create appropriate strategies and policies to deal with the difficulties encountered during the implementation of these projects. While there may be theoretical and empirical gaps in the literature on IT project success, a more comprehensive framework that integrates various factors and empirical studies that focus on the unique context of CBE can provide valuable insights for project managers, IT professionals, and other stakeholders.

1.3 RESEARCH QUESTIONS

For the purpose of this study, the following questions are addressed

- What role do project management methodologies play in the successful implementation of IT projects in CBE?
- What is the impact of resource allocation and management on the implementation of IT projects in CBE?
- What is the relationship between project team composition and the implementation of IT projects in CBE?

1.4 RESEARCH OBJECTIVES

The general objective of the study is

- To identify the key determinants that impact the successful implementation of IT projects in CBE.

The specific objectives of the research paper are:

- To evaluate the role of project management methodologies on the successful implementation of IT projects in CBE.
- To evaluate the impact of resource allocation and management on the successful implementation of IT projects in CBE.
- To analyze the impact of project team composition on the successful implementation of IT projects in CBE.

1.5 SIGNIFICANCE OF THE STUDY

- **Practical contribution**: This study offers practical insights for project managers, team leaders, and IT professionals in the Commercial Bank of Ethiopia (CBE). It identifies critical success factors for IT projects, improving management methodologies, resource allocation, and team composition. The findings can be applied to other Ethiopian banks, enhancing IT project management and benefiting stakeholders in the banking industry.
- **Theoretical contribution**: This research enhances existing knowledge on project management and IT project execution in Ethiopia's banking industry. It provides empirical evidence on factors influencing IT project success, laying the groundwork for future research. The study identifies potential and problems faced by banks in executing

IT projects, guiding the development of effective project management strategies tailored to the Ethiopian banking sector.

- **Organizational benefits**: The study helps CBE improve project management practices and efficiency in IT projects by identifying critical elements. It helps optimize methodologies, resource allocation, and team composition, enhancing the success rate of IT projects. The findings can identify areas for improvement and implement corrective measures to enhance the performance of the PMO. The findings can benefit the organization's PMO function and be applied by other banks in Ethiopia and beyond, enhancing the overall effectiveness of IT projects in the banking industry.
- **Social benefits:** The study identifies best practices for IT project management, promoting Ethiopia's IT industry growth and competitiveness in the global market. It can be applied by CBE, banks, and IT firms to improve project management practices, enhancing the quality of services and products. The findings can influence the entire IT sector, establishing a basis for IT project management standards and practices, leading to a more robust and standardized framework, improving overall project quality and efficiency.
- **Educational benefits**: Students, researchers, and academics with an interest in the implementation of IT projects can use the study as a reference. The findings of the study can be used to develop academic programs and courses that focus on project management and IT project implementation, thereby contributing to the development of the next generation of IT professionals in Ethiopia.

1.6 SCOPE OF THE STUDY

❖ Geographical scope

The Commercial Bank of Ethiopia (CBE), the biggest bank in Ethiopia, is the subject of the investigation. With branches and offices spread over Ethiopia, the bank is present throughout the country.

❖ Temporal scope

The study covers a period of five years, from 2018 to 2022. IT projects from this period are used to collect data on the implementation of IT projects in CBE and to analyze the factors that impact their success.

- **Subject scope**

The study focuses on the determinants of IT project success in CBE. This includes an analysis of project management methodologies, resource allocation and management, as well as project team composition and challenges faced by the projects and their impact on the successful implementation of IT projects.

- **Methodological scope**

The study uses a quantitative research method that involves the use of surveys and statistical analysis of data, and qualitative research method that incorporates open ended questions with in the surveys.

1.7 LIMITATIONS OF THE STUDY

The constraints of a study are factors that could influence how the study's findings should be interpreted and might restrict how broadly the conclusions can be applied.

- **Limited sample size:** The study's sample size may be constrained, which could have an impact on how generalizable the results are to different contexts or companies. As the temporal scope of the study is from 2018 to 2022 and there are 5 projects that fit in to this category, the sample size may be limited.
- **Time constraints:** The study's time constraints may have an impact on the breadth and depth of the research and the capacity to gather extensive data.
- **Availability of resources:** The study could be constrained by the resources available, such as funding, personnel, or access to information, which may affect the scope and quality of the research.
- **Organizational culture:** The study may be limited by the organizational culture of the Commercial Bank of Ethiopia (CBE), which may affect the implementation of IT projects in ways that are unique to the organization and not generalizable to other contexts.

1.8 ORGANIZATION OF THE STUDY

Six chapters make up the structure of this study. The first chapter provides an overview and introduction to the subject, a statement of the problem, the research questions, the research objectives, the significance of the investigation, scope of the study, constraints of the study, and definitions of key words. The second chapter presents different local and international literature reviews that are conducted by different scholars which presents discussions and critiques of topics related. Chapter three reviews methodologies that are be used in this research including a description of terminologies relating methodologies used. The study's findings are presented in Chapter 4 along with the study's conclusions. Chapter 5 is about the summaries and recommendations and then there are references and appendices respectively.

1.9 DEFINITION OF TERMINOLOGIES

Implementation: Implementation is the execution or practice of a plan, a method or any design, idea, model, specification, standard or policy for doing something. As such, implementation is the action that must follow any preliminary thinking for something to actually happen.

Methodology: a body of methods, rules, and postulates employed by a discipline. Particular procedure or set of procedures.

Composition: the different parts or people that combine to form something.

Allocation: refers to the act or process of distributing or assigning resources, tasks, or responsibilities to specific individuals, groups, or entities.

CHAPTER TWO

2 REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

This chapter presents a review of the literature related to the topic being studied. There is extraction of information from earlier studies thought to be closely related to the topic and concepts under study.

2.2 PROJECT DEFINITION

A temporary undertaking made to produce a special good, service, or outcome is known as a project. This definition is given by the Project Management Institute (PMI), a world-wide organization for project management specialists. Creating a special product, service, or outcome is the purpose of a project, according to the PMI. A project is temporary since its scope and resources are predetermined and have a clear beginning and end. A project is distinct from continuing operations or procedures, according to the PMI. Unlike projects, which have a definite start and finish date and a defined set of deliverables that must be completed within that timeframe, operations and procedures are continual and recurring in nature.

2.3 IT PROJECT SUCCESS

IT project success refers to the achievement of desired outcomes and objectives in information technology (IT) projects. This could entail the execution of IT solutions that satisfy the company's stated goals and requirements, the effective completion of project deliverables within the allotted budget and timetable, and stakeholder and end-user satisfaction. Effective planning, implementation, monitoring, and control of project activities are all essential components of successful IT project management, as are the management of project risks, resources, and stakeholders.

IT project success may be described as the degree to which a project meets the expectations of its stakeholders while achieving its goals and objectives within the given time, cost, and quality restrictions. This definition takes into account the key determinants of IT project success, including project management methodologies, resource allocation and management, and project team composition.

According to (Venkatesh, V., & Davis, F. D., 2000, p. 186), IT project success can be measured in terms of two key factors: user acceptance and system usage. The degree to which users think the system is practical and simple to use is referred to as user acceptance. The degree to which users actually use the system to carry out their tasks is referred to as system usage.

The accomplishment of project goals and objectives within the allocated timetable, budget, and quality requirements can be referred to as an IT project's success. To put it another way, an IT project is successful if it fulfills or exceeds the expectations of its stakeholders and helps the firm in a demonstrable way (Agarwal, N., & Rathod, U., 2006, p. 358). There are different dimensions of IT project success, including technical success, organizational success, and user satisfaction. The capacity of the project to adhere to its technical standards and requirements is referred to as technical success. Organizational success refers the contribution of the project to the overall goals and strategy of the organization. User satisfaction refers to the extent to which the project meets the needs and expectations of its users.

Both of these definitions take into account the key determinants of IT project success; including project management methodologies, resource allocation and management, and project team composition. IT projects have the potential to benefit stakeholders and improve the company as a whole by being successful in each of these areas.

IT project success is heavily influenced by project management methodologies. These methodologies provide a structured approach to managing projects, which includes defining project goals, creating project plans, allocating resources, and monitoring progress. By following a clearly defined project management methodology, project teams may ensure that projects are delivered on time, within budget, and in accordance with the intended level of quality. According to study findings, the use of project management approaches is positively related to project success. A study by (Shenhar, A. J., Levy, O., & Dvir, D., 2001, p. 111) found that using project management methodologies was a key indicator of project success. Additionally, the study discovered that project management methodologies performed more effectively than generic ones when they were tailored to the particular needs of the project (Shenhar, A. J., Levy, O., & Dvir, D., 2001, p. 111).

A study by (Rozenes, 2011, p. 64) examines the correlation between project management methodologies and the performance of a project. Five alternative project management methodologies—PMBOK, PRINCE2, Agile, Rational Unified Process, and Scrum—are examined in the study, and their effects on project performance are examined as well. The study's findings imply that the performance of projects is favorably correlated with the usage of project management methodologies. The study indicated that while the use of Rational Unified Process and Scrum had a moderately favorable influence on project performance, the usage of PRINCE2 and Agile methodologies had a significantly beneficial impact. It was discovered that PMBOK had a negligible impact on project performance. The article also discusses the importance of selecting the best project management strategy based on the specifics of the project, such as its size, complexity, and scope. According to the survey, businesses must adapt their project management strategies and processes to suit the unique requirements of each project.

Effective resource allocation and management is critical for successful IT project management. This includes allocating resources such as time, money, and personnel, as well as managing and monitoring resource usage throughout the project lifecycle. Research studies have shown that effective resource allocation and management is positively correlated with project success (Zabaleta, N., Ruiz, M., & Elorza, U, 2018, p. 305). In addition, studies have found that resource allocation and management practices that are aligned with project goals and objectives are more effective than those that are not (Shenhar, A. J., Tishler, A., Dvir, D., Lipovetsky, S., & Lechler, T., p. 111).

The project team's makeup can be very important in deciding the project's success. This covers elements like team size, diversity, and specialization. Project teams with a variety of talents and experiences are more likely to be successful, according to studies (Açıkgöz, A., Günsel, A., Kuzey, C., & Seçgin, G., 2016, p. 90).

According to the firm's resource-based perspective, the availability and effective management of crucial resources result in a competitive advantage and project success (Barney, J., Wright, M., & Ketchen Jr, D. J., 2001, p. 625). Resources like funding, time; personnel, technology, etc. are key inputs to any project. Proper allocation and optimization of these scarce resources is crucial for project success.

2.4 THORETICAL REVIEW

IT projects relate to the creation and deployment of information technology systems and solutions, whereas project management is the process of planning, carrying out, and closing projects to achieve certain goals and objectives. As organizations rely more on technology to support their objectives and operations, project management has taken on a greater significance in recent years.

According to (Kerzner, 2013), project management is a complex process that involves multiple phases, including initiation, planning, execution, monitoring and control, and closing. To ensure the project's effective completion, each of these phases demands particular skills, tools, and techniques. In addition, project management involves managing stakeholders, risks, budgets, schedules, and resources, among other factors.

The technical complexity of the systems involved, the rapid pace of technological change, and the requirement to tie IT projects to corporate goals make project management particularly difficult in the context of IT projects. According to (Fayaz, A., Kamal, Y., Amin, S., & Khan, S., 2017, p. 73), IT projects often face unique challenges, such as scope creep, technical difficulties, and resistance to change, which require specialized skills and expertise from project managers.

Numerous companies have implemented project management methodologies and frameworks like PRINCE2, Agile, and Waterfall to address these issues. These techniques offer an organized strategy for managing projects, with particular procedures and rules for every stage of the undertaking. For example, agile methodologies emphasize flexibility, collaboration, and iterative development, while Waterfall methodologies emphasize planning, documentation, and sequential phases.

Overall, the literature suggests that project management is a critical component of IT projects, requiring specialized skills, methodologies, and tools to ensure success. Project management likely plays a bigger part in IT projects in the future as businesses continue to rely on technology to support their strategy and operations.

On the implementation of IT projects and the factors that affect their performance, several studies have been done. These studies have identified a number of variables, such as

organizational, environmental, and technical variables, that might affect an IT project's success or failure.

2.5 EMPIRICAL REVIEW

Recent research has demonstrated how crucial it is for project management offices (PMOs) to successfully implement IT projects if businesses are to succeed. However, the factors that determine the success of such projects are complex and multifaceted, and can vary depending on the context of the organization. Therefore, it is crucial to perform empirical research to pinpoint the factors that affect how IT projects are implemented in PMOs and to comprehend how these factors may be handled to increase project success.

The article by (Amade, B., Ogbonna, A., & Kaduru, C., 2012) which examines the factors of effective project execution in Nigeria is one empirical study that is pertinent to this topic. According to a survey of the project management literature, project planning, project team structure, project leadership, monitoring and control, communication, and project risk management are some of the crucial elements that influence a project's success. The authors then conduct a survey of project managers in Nigeria to determine the extent to which these factors are perceived to be important in successful project implementation. The survey results indicate that the most crucial factors influencing the effectiveness of project implementation in Nigeria are project planning, project team composition, and project leadership. The study concludes with recommendations for improving project management practices in Nigeria, including the need for effective project planning, team building, and leadership development.

These studies provide valuable insights into the determinants of successful IT project implementation in different contexts. However, an additional empirical study is required to pinpoint the factors that influence how IT projects are carried out in PMOs, specifically in the context of the Commercial Bank of Ethiopia (CBE). This research contributes to the development of best practices for managing IT projects in PMOs and improving project success.

2.6 THEORETICAL FRAMEWORK

The study was based on general and strategic management ideas that were applicable to project management. Technology Acceptance Model (TAM), Resource-Based View (RBV), Project Management Body of Knowledge (PMBOK), and Institutional Theory are among the theories

that were explored in this study. These theories were examined to show how each can be integrated into project management more so for effective implementation of IT projects.

Technology Acceptance Model (TAM): The factors affecting the adoption and utilization of new technology in businesses can be understood using this model. It can assist in identifying the elements, such as perceived utility, perceived usability, and attitude toward technology use, that affect the adoption and execution of IT projects in PMOs.

The Technology Acceptance Model (TAM) is a conceptual framework that clarifies how people come to accept and use new technology. Fred Davis created the concept in the 1980s, and it has since been widely applied in the study of information systems. The TAM is predicated on the idea that crucial elements influencing a technology's adoption and use are its perceived usefulness and simplicity of use.

The TAM defines perceived usefulness as the degree to which a user thinks technology aids them in achieving their objectives or enhancing their performance. The degree to which a user perceives a technology to be simple to use and comprehend is referred to as perceived ease of use. According to the TAM, these two elements are the key predictors of user acceptance and technological use.

Several studies have supported the validity and reliability of the TAM in predicting user acceptance and use of technologies. For example, a study by (Venkatesh, V., & Davis, F. D., 2000, p. 186)found that the TAM was effective in predicting user acceptance and use of a new software application in a large organization. Another study by (Lee, Y., & Kozar, K. A., 2012, p. 450) found that the TAM was effective in predicting user acceptance and use of mobile banking applications.

Resource-Based View (RBV): This theory can be used to understand how organizations can use their resources and capabilities to gain competitive advantage. It can be used to pinpoint the assets and skills required for the effective execution of IT projects in PMOs, including IT infrastructure, human capital, and organizational culture.

According to a study by (Barney, 2001) the Resource-Based View (RBV) is a management philosophy that contends a company's assets and capabilities are what really determine its

competitive advantage and long-term performance. According to the RBV strategy, a company's resources and competencies are distinctive, challenging to mimic, and can therefore result in a prolonged competitive advantage.

According to the RBV method, businesses should concentrate on enhancing and utilizing their special resources and capabilities in order to generate value for their stakeholders and customers. Technology, brand reputation, intellectual property, staff skills and knowledge, and financial capital are examples of resources that might be physical or intangible (Barney, 2001). The ability of a company to innovate, manage its supply chain successfully, and forge enduring bonds with clients and partners are examples of capabilities. Capabilities also relate to the firm's capacity to utilize its resources effectively to generate value.

To apply RBV effectively, firms must identify their unique resources and capabilities and develop strategies to leverage them to create value. Firms must also be aware of their competitors' resources and capabilities and develop strategies to maintain their competitive advantage (Kraaijenbrink, J., Spender, J. C., & Groen, A. J., 2010, p. 349).

Project Management Body of Knowledge (PMBOK): The best practices in project management, including the knowledge domains, workflows, and project management tools and methodologies, may be understood using this framework. Project planning, risk management, and quality management are a few of the project management techniques that must be used successfully for IT projects to be implemented in PMOs.

Project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project communications management, project risk management, project procurement management, and project stakeholder management are among the ten knowledge areas that make up the PMBOK guidebook. To successfully manage a project, each of these knowledge domains is further divided into particular processes and activities.

To apply the PMBOK framework effectively, project managers must have a strong understanding of project management principles and practices. They must also be able to modify the PMBOK framework to meet the unique requirements of their project and company.

Institutional Theory: This theory can be used to analyze how organizations are influenced by their external environment, which includes industry and societal conventions, values, and regulations. It can assist in identifying institutional forces that influence the adoption and delivery of IT projects in PMOs, such as stakeholder expectations, the regulatory environment, and organizational cultural norms.

Institutional theory is an approach to management that asserts that organizations are influenced by their institutional environment's norms, values, and expectations. According to institutional theory, companies are influenced by external elements such as the legal and regulatory framework, industry norms, and public expectations in addition to their internal environment.

Institutional theory also suggests that organizations can use institutional isomorphism, or the process of becoming more similar to other organizations in their institutional environment, to gain legitimacy and improve their chances of success. Institutional isomorphism can take one of three different forms: coercive isomorphism, which happens when organizations are forced to conform to norms and expectations through legal or regulatory means; mimetic isomorphism, which happens when organizations copy the strategies of other successful organizations in their industry; and normative isomorphism, which happens when organizations conform to norms and expectations because they believe it is the right thing to do.

2.7 CONCEPTUAL FRAMEWORK

The goal of this study is to investigate the factors that influence how Ethiopia's commercial bank implements information technology projects. The determinants constituting the independent variables are the use of project management methodologies, Resource allocation and management, and Project team composition all tackled towards the successful implementation of information technology projects.

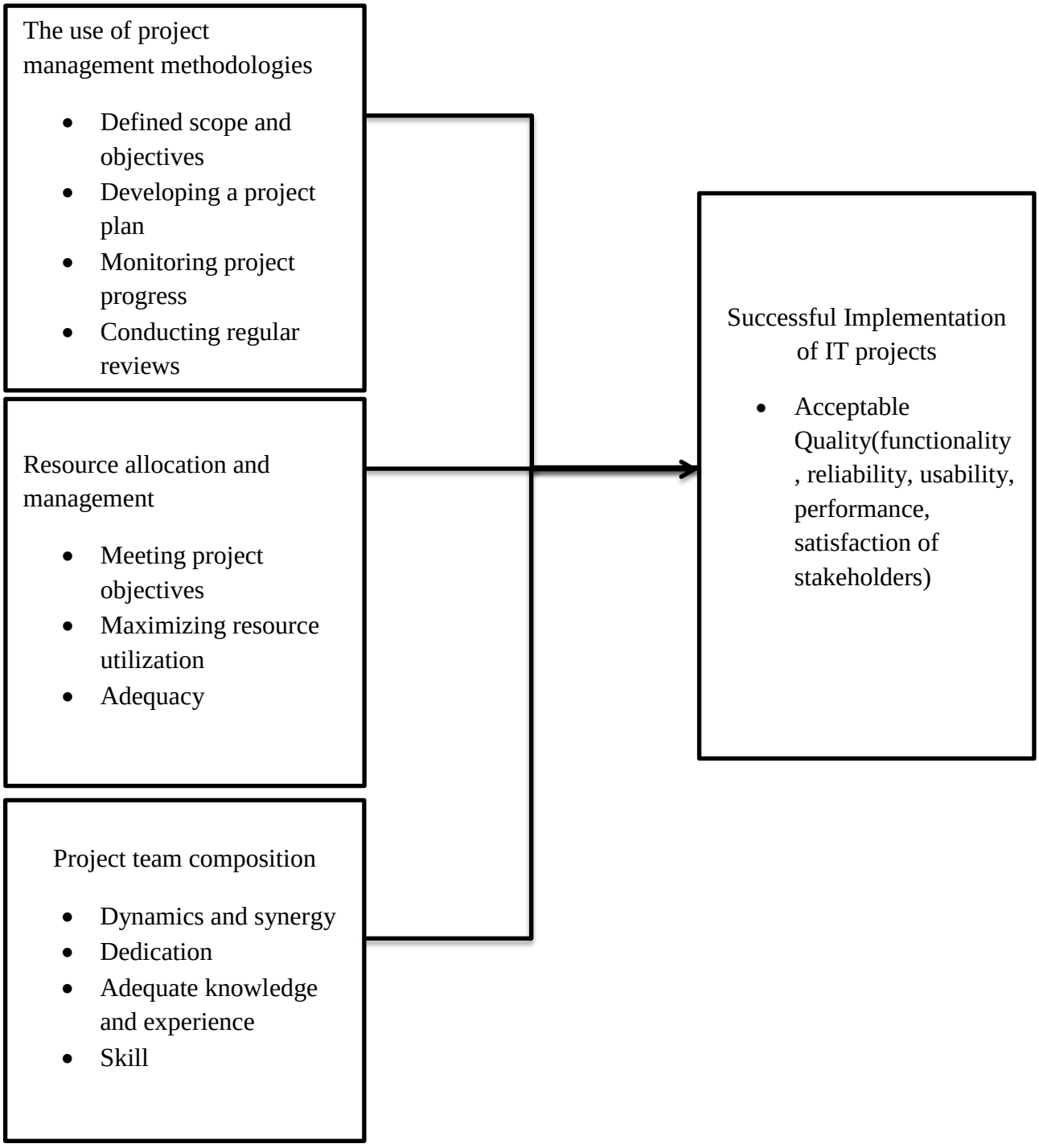

Figure 1: Conceptual framework

2.8 RESEARCH HYPOTHESIS

The following hypotheses serve as the study's guide.

- The use of project management methodologies has a positive effect on the successful implementation of IT projects in CBE.
- Resource allocation and management significantly impacts the successful implementation of IT projects in CBE.
- Project team composition has a significant impact on the successful implementation of IT projects in CBE.

CHAPTER THREE

3 RESEARCH METHODOLOGY

3.1 INTRODUCTION

This section explains the research methodology, research design, population and sample, data type and source, data collection instruments, data collection procedures, and data analysis techniques. The many scientific techniques that are applied to achieve the goals of the study are briefly discussed.

3.2 RESEARCH APPROACH

The research approach for this study is a mixed-methods approach that combines qualitative and quantitative data collection and analysis methods. This approach allows for a comprehensive understanding of the determinants of successful IT project implementation in the context of CBE.

The study gets started with a thorough examination of the body of knowledge regarding what factors influence the implementation of IT projects successfully in PMOs. In addition to appropriate journals and conference proceedings, the literature review is undertaken using internet sources including Google Scholar, Science Direct, and IEEE Xplore. The review of literature gives the study a theoretical foundation and point out any gaps in the body of knowledge that the study can fill.

The study then uses a survey to collect quantitative data from project stakeholders in CBE. The survey is designed to collect data on project management practices, organizational support, user involvement, and project success. To guarantee convenience and data collection, the survey was delivered online. In order to determine the factors that contribute to the implementation of successful IT projects in CBE, the survey results are evaluated statistically using techniques like regression analysis and correlation analysis. Open-ended survey questions are also used by the study to gather qualitative information from project stakeholders in CBE in addition to the survey.

Finally, the study employs a case study approach to examine how one particular IT project was implemented in CBE. The case study provides an in-depth understanding of the determinants of successful IT project implementation in the context of CBE. Data on the implementation of the

IT project is gathered for the case study using a combination of open-ended surveys, document analysis, and observation. The data is also analyzed using qualitative techniques to determine the factors that contribute to the success of the IT project implementation in CBE.

Overall, the mixed-methods approach adopted in this study gives a thorough understanding of the factors that influence the implementation of IT projects successfully in CBE and enable the development of evidence-based suggestions for enhancing project success in the PMO.

3.3 RESEARCH DESIGN

The research design is both explanatory and descriptive seeking to see causal relationships between variables while providing a detailed and accurate description of the phenomenon.

A mixed methods research approach can produce a robust understanding of the research problem by including both qualitative and quantitative data (Creswell, 2014). For example, a researcher can first collect and analyze qualitative data through interviews or open-ended survey questions to explore participants' experiences in depth. Then, the researcher can develop and administer a quantitative instrument such as a Likert scale survey based on the themes that emerged from the qualitative data. By then statistically analyzing the quantitative data, the research can determine the frequency and intensity of those themes in a larger sample (Creswell, 2014). Using a mixed methods approach provides breadth and depth to understand a research problem.

The purpose of the explanatory research design is to examine the cause-and-effect correlations between variables, making it appropriate for this study. An explanatory research design allows for the examination of the variables that affect the success or failure of IT projects in the Commercial Bank of Ethiopia since the research question is concentrated on finding the determinants of IT project execution. This helps in identifying the causal relationships between the variables and provides insights into why and how certain0 phenomena occur (Trochim, W. M., & Donnelly, J. P., 2001).

Since the goal of descriptive research is to characterize the features of a population or phenomena, it is ideal for this project work. The use of descriptive research design allows for the collection of data on the characteristics of IT projects in the Commercial Bank of Ethiopia, including the types of projects, their scope, and the project management practices used (Fraenkel, J. R., Wallen, N. E., & Hyun, H. H., 2012, p. 429). This gives a thorough and accurate account of

the topic under study and assist in identifying the important variables affecting how IT projects are implemented.

For this project's work, the use of explanatory and descriptive research design methodologies is suitable because these approaches are the most effective for examining the cause-and-effect relationships between variables and outlining the specifics of the IT projects under investigation. These study design techniques offer insightful information about the variables that affect the implementation of IT projects and assist in the development of strategies and policies to deal with the difficulties encountered in the Commercial Bank of Ethiopia.

3.4 POPULATION AND SAMPLING

3.4.1 TARGET POPULATION

This research is carried out in the Commercial bank of Ethiopia (CBE) which deals with the determinants of IT project success.

For this study, success factor that determine the implementation of IT projects are identified for projects undertaken in the Commercial bank of Ethiopia. Currently there are 17 IT projects under PMO of CBE that are being implemented to improve the banks operations, enhance customer experience, increase efficiency, and stay competitive in the industry. The population of the study incorporates 5 projects that are done with in the span of 2018-2022 and have reached a final stage where operation is tested.

Each project's sample population contains the following individuals.

- **Project Managers:** These are the people in charge of planning, executing, and closing IT projects inside the PMO. According to (PMI, 2017) the project manager is in charge of project planning, execution, and closure. They are in charge of overseeing the project team, stakeholders, and resources.
- **Project Team Members:** These are people allocated to work on IT projects inside the PMO and are responsible for accomplishing specified project tasks and deliverables.
- **Business analysis:** According to the (Blokdyk, 2018) the business analyst is in charge of translating business needs into functional requirements for the IT system.

They collaborate with stakeholders to identify business needs, examine processes, and offer solutions.

- **IT Staff:** These are individuals who provide technical support and expertise for IT projects within the PMO.
- **Senior Management:** These are individuals who are responsible for overseeing the PMO and making strategic decisions about IT project implementation within CBE.
- **Other Stakeholders:** These may include vendors, customers, or other individuals who are affected by IT projects within the PMO.

3.4.2 SAMPLING TECHNIQUE

The five IT projects under CBE's (Commercial Bank of Ethiopia) scope of 2018-2022 are the study's target population. In this study, a census sampling technique is utilized, which entails gathering data from every individual or unit in the population of interest. In this scenario, the population of interest is the five IT projects that CBE has implemented between 2018 and 2022.

Census sampling is a method of sampling in which the complete population is sampled. In other words, every member of the population is examined, and no smaller subset of the population is chosen. When the population size is small or the sample cost is low, this strategy is appropriate (Gravetter, F. J., Wallnau, L. B., Forzano, L. A. B., & Witnauer,, 2020).

In the case of this project work titled "Determinants of IT Project Implementation Success: The Case of Commercial Bank of Ethiopia," the population for the study is the total number of IT projects undertaken by the bank between 2018-2022. Since there are only 5 projects to be selected, which is a relatively small subset of the population, it may be appropriate to use a census sampling technique to study the entire population.

Furthermore, since there are only 73 people involved in these 5 projects, using a census sampling technique would be feasible and practical. This would provide a comprehensive and accurate representation of the population being studied, and eliminate the possibility of sampling error.

The use of census sampling in this study is appropriate as it ensures that all the IT projects within the specified time frame and all individuals involved in the implementation of these projects are

included in the data collection process. This provides a comprehensive and accurate picture of the determinants of IT project success in CBE. As noted by (Kothari, 2004), census sampling is appropriate when the population is small and easily accessible, as in the case of the five IT projects in CBE.

Furthermore, the use of a census sampling technique ensures a high level of accuracy in the data collected, which is essential in identifying the determinants of IT project success in CBE. This is supported by (Creswell, 2014), who notes that census sampling is preferred when high accuracy is required.

In this study, a total of 73 individuals who are involved in the selected IT projects are surveyed through a questionnaire. This includes project managers, project team leaders, business analysts, IT staff, and other stakeholders who are involved in the implementation of the selected projects.

The use of census sampling is also appropriate in this study as the population is small and easily accessible. This is in line with the recommendations of (Kothari, 2004), who notes that census sampling is appropriate when the population is small and easily accessible. As such, census ensures that all the relevant individuals are included in the study.

By collecting data from this population, the research can gain a comprehensive understanding of the determinants of successful IT project implementation in the context of CBE. This information can be used to develop recommendations for improving IT project implementation within the PMO of CBE and potentially other organizations with similar contexts.

3.4.3 DATA SOURCE, DATA TYPE AND DATA COLLECTION INSTRUMENTS

This project work uses a mixed-methods research design that combines both quantitative and qualitative data collection methods. Questionnaires were employed as data sources for the quantitative component. Questionnaires are common research instruments for gathering data from a large number of individuals. They are a sort of survey in which participants answer a series of pre-determined questions in writing. One of the main advantages of questionnaires is that they are relatively easy to administer. They can be distributed to a large number of participants, either in person, by mail, or online, and participants can complete them at their own convenience (Trochim, W. M., & Donnelly, J. P., 2001). Questionnaires allow for a high degree of standardization in data collection, as all participants receive the same set of questions. This

can help to ensure that the data is consistent and reliable, and can make it easier to analyze and compare results (Bowling, 2005, p. 281). Questionnaires are often a cost-effective way of collecting data, as they do not require the same level of resources as other data collection methods such as interviews or focus groups. They can also be easily replicated and distributed, making them a useful tool for large-scale studies (Gable, 1994, p. 112).

The study questionnaire is prepared integrating both open ended and close ended questions. The questionnaire is to be distributed to each project at their respective offices and workshops.

For the qualitative component, data sources include open-ended questions included in the questionnaire that was forwarded to the sample population which included project managers, project team leaders, team members, IT staff, senior management, and other stakeholders involved in IT project implementation within the bank. The type of data collected from these sources is textual data that is open-ended survey responses.

Additionally, a literature review is conducted to gather secondary data sources, such as academic articles, reports, and case studies related to IT project implementation in PMOs. These sources provide contextual information and insights into best practices for IT project implementation within PMOs, and are be used to support the research findings. By utilizing a variety of data collection techniques, the research can gain a comprehensive understanding of the determinants of successful IT project implementation in the context of CBE.
For the project work " Determinants of IT project Implementation success: the case of CBE " both primary and secondary data collection techniques are used.

Primary data collection techniques involve collecting original data directly from the target population. Some examples of primary data collection techniques that could be used for this project work include surveys, open-ended surveys, observation, and case studies. Surveys can be used to collect quantitative data from a large number of individuals involved in IT project implementation within the PMO of CBE. Open-ended survey questions can be used to collect qualitative data from individuals involved in IT project implementation within the PMO of CBE. Observation can be used to collect data on the behavior and interactions of individuals involved in IT project implementation within the PMO of CBE. Case studies can be used to collect both qualitative and quantitative data on IT project implementation within the PMO of CBE.

Data that has already been gathered and released by other sources is obtained using secondary data collection techniques. Literature reviews, document analysis, and data mining are a few examples of secondary data collection methods that could be employed for this project work. Literature reviews can be used to gather information from previously published academic articles, reports, and case studies related to IT project implementation in PMOs. Document analysis can be used to collect data on project documentation, such as project plans, project reports, and project budgets. Data mining can be used to extract data from large datasets related to IT project implementation within the PMO of CBE. In order to fully comprehend the determinants of successful IT project implementation in the context of CBE, the research uses both primary and secondary data collection techniques.

3.5 DATA ANALYSIS METHODS

in accordance with completeness, uniformity, and clearance. A statistical package for social science (SPSS 20) Windows version is used to enter data. Data is reviewed for accuracy, consistency, and clearance after the data gathering procedure.

1. For the quantitative data:

Descriptive statistics: This technique can be used to synthesize information acquired from surveys and project documentation relevant to the implementation of IT initiatives within the bank. Descriptive statistics may be useful in identifying patterns, relationships, and trends in data. Descriptive statistics can assist researchers understand and summarize data. It provides a summary of the data and can be used to identify trends and relationships that may not be obvious from the raw data. Descriptive statistics can be used in a range of contexts, from scientific research to business analytics, to help guide decisions and improve outcomes. Summary measures are used in descriptive statistics to offer a summary of the data. Variability measures, such as the standard deviation and range, represent the spread or dispersion of the data, whereas central tendency measures, such as the mean, median, and mode, describe the average value of the data. Percentiles and quartiles are two more summary measurements that give information on the data's distribution (Trochim, W. M., & Donnelly, J. P., 2001). In descriptive statistics, graphical displays such as histograms, boxplots, and scatterplots are used to provide a visual representation of the data. Graphical displays can assist uncover patterns and trends in data and make comparing different variables or groups easier (Field, 2013).

Inferential statistics: Based on the sample data acquired, this method can be used to test hypotheses and make predictions about the target population. Inferential statistics can help evaluate the significance of variable correlations and generalize findings to the target population. Inferential statistics is a useful technique for drawing conclusions about a population from a small sample of data. It entails drawing inferences about the population and testing hypotheses using probability theory, hypothesis testing, and confidence intervals. Inferential statistics is frequently used in scientific research, corporate analytics, and other sectors where conclusions about a population must be drawn based on a sample of data. Inferential statistics relies on sampling, which is the process of selecting a subset of a population to serve as a representative sample. To ensure that the inferences drawn from the sample are valid for the population as a whole, the sample should be chosen in an impartial and representative manner (Trochim, W. M., & Donnelly, J. P., 2001). Inferential statistics employs probability theory to draw conclusions about the population based on a sample. The sampling distribution is used to calculate the likelihood of receiving a specific sample mean or other value, given the hypothesis is correct. This probability is used to test the hypothesis and make demographic conclusions (Field, 2013). Inferential statistics also includes hypothesis testing, which is the process of testing a hypothesis about the population based on sample data. The hypothesis is that there is no significant difference between the sample and the population, while the alternative hypothesis is that there is a significant difference. The p-value is used to decide whether or not a hypothesis can be rejected (Lipovetsky, 2020). It also involves the use of confidence intervals, which are a set of values that, with a certain degree of certainty, contain the true population parameter. Confidence intervals are used to quantify the precision of a sample statistic and derive population conclusions (Tabachnick, B. G., Fidell, L. S., & Ullman, J. B., 2013, p. 497).

Regression analysis: Regression analysis is a statistical method for investigating the relationship between two or more variables. It is used to forecast the value of a dependent variable by modeling the connection between the dependent variable and one or more independent variables. Regression analysis can assist in identifying the characteristics that contribute to the successful implementation of an IT project.

2. for the qualitative data:

Content analysis: This method can be used to assess open-ended questions with project managers, team members, IT personnel, senior management, and other stakeholders involved in CBE's PMO's IT project execution. Themes, patterns, and meanings in data can be identified via content analysis.

Case study analysis: This method can be used to examine the case study of CBE and determine the aspects that lead to the successful implementation of an IT project. Case study analysis can aid in providing a detailed and in-depth understanding of the context and procedures involved in CBE's PMO IT project implementation.

Overall, the adoption of a mixed-methods study design can provide a thorough examination of the factors influencing effective IT project implementation in the context of CBE.

3.6 RELIABILITY AND VALIDITY OF THE RESEARCH INSTRUMENT

3.6.1 RELIABILITY ANALYSIS

The reliability analysis results indicate that the measures used in this study are reliable and internally consistent. The obtained Cronbach's alpha values for each construct are higher than the generally recognized cutoff point of 0.7, suggesting good reliability. With Cronbach's alpha values of 0.885, 0.778, 0.782, and 0.899, respectively, the metrics of project management methodologies, resource allocation and management, project team composition, and successful implementation of IT projects exhibit high levels of internal consistency. These results suggest that the measures used to assess each construct are consistent and reliable indicators of their respective domains. The high level of reliability of the measurements adds to the study's validity and supports the findings' robustness. Overall, the reliability analysis results demonstrate that the measures used are reliable and can be used with confidence to explore the determinants of IT project success in the Commercial Bank of Ethiopia.

Variables	Cronbach's Alpha	Comment
Project management methodologies	0.885	Accepted
Resource allocation and management	0.778	Accepted
Project team composition	0.782	Accepted
Successful Implementation of IT projects	0.899	Accepted

Table 1: Cronbach's Alpha Values for Survey Variables.

3.6.2 VALIDITY OF THE RESEARCH INSTUMENT

A pilot study was done using a sample of respondents who were not included in the real survey to assess the validity of the research instrument. These respondents had participated in IT projects that were studied in this study. The pilot study was carried out to assess the research instrument's validity and to detect any potential problems with the survey questions or response alternatives. The pilot study revealed important information about the research instrument's validity. It let the researcher to assess the clarity and comprehensibility of the survey questions and response options, as well as their relevance to the research objectives. The feedback received from the pilot study participants enabled the researcher to refine and improve the survey instrument, ensuring that it accurately captured the constructs of interest and was relevant to the study population. Overall, the pilot study provided a critical step in validating the research instrument used in this study. It helped identify and address any potential issues with the survey questions and response options, ensuring that the instrument was clear, comprehensive, and relevant to the research objectives. As a result, it can be said with confidence that the survey instrument used in this study is valid and accurately measures the constructs of interest.

3.7 INFERENTIAL ANALYSIS

When two or more independent variables in a multiple regression model have a strong correlation with one another, multicollinearity arises. Regression analysis problems could come from this, including inflated standard errors, unstable coefficients, and difficulty deciphering the findings. Inaccurate predictions and conclusions can also result from multicollinearity (Hair, 2009). The technique of identifying and treating multicollinearity in multiple regression models is known as multicollinearity analysis. Multicollinearity is a problem in regression analysis that results in inflated standard errors, unstable coefficients, and difficulty interpreting the results

when two or more independent variables in a multiple regression model have a high correlation with one another (Farrar, D. E., & Glauber, R. R., 1967, p. 92).

Multicollinearity analysis entails recognizing and treating multicollinearity in a multiple regression model. Multicollinearity happens when two or more independent variables in the model are substantially associated with one another. This can lead to a number of problems, including:

- **Inflated standard errors:** The standard errors of the regression coefficients can be inflated due to multicollinearity, making it difficult to discern which independent variables are strongly connected to the dependent variable (Fox, 2015).
- **Unstable coefficients:** It might be challenging to determine the genuine link between the independent variables and the dependent variable due to the tendency of multicollinearity to produce unstable coefficients (Fox, 2015) .
- **Difficulty in interpretation**: It can be challenging to interpret the individual impacts of independent variables on the dependent variable due to multicollinearity (Fox, 2015).

In a multiple regression model, the variance inflation factor (VIF) is a metric for multicollinearity. When two or more independent variables in the model have a strong correlation with one another, multicollinearity arises. VIF gauges the degree to which multicollinearity has inflated the variance of the estimated regression coefficients. (Hair, 2009).

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.394	.823		1.695	.096		
	Project management methodologies	-.086	.190	-.058	-.454	.652	.920	1.087
	Resource allocation and management	.159	.194	.113	.817	.418	.790	1.266
	Project team composition	.517	.166	.432	3.117	.003	.787	1.271

a. Dependent Variable: Successful Implementation of IT projects

Table 2 Collinearity Statistics

All three independent variables have relatively high tolerance values (above .7), which suggests that there is not a high degree of multicollinearity among them. The VIF values are also relatively low (all below 1.3), which further supports the conclusion that multicollinearity is not a significant issue in this model. In general, a tolerance value close to zero or a VIF value greater than 10 is considered indicative of significant multicollinearity. In this case, the tolerance values are all well above .1 and the VIF values are all well below 10, indicating that there is no significant multicollinearity in the model. The estimates of the coefficients are likely to be stable, and the effects of each independent variable on the dependent variable can be interpreted with some confidence, according to the Collinearity statistics, which generally indicate that the independent variables in the model are not highly correlated with one another. Table 2 indicates that Project management methodologies has a VIF of 1.087(less than 10), resource allocation and management 1.266 (less than 10), project team composition 1.271 (less than 10), therefore all variables are suitable.

3.8 STATISTICAL MEASUREMENT MODEL

A statistical method known as multiple regression analysis is used to look at the relationship between one dependent variable and several independent variables. It is a popular tool in many fields, including social sciences, business, and engineering, for understanding complex relationships between variables. Multiple regression seeks to determine the optimal set of independent variables to use in order to forecast the value of the dependent variable (Neter, J., Kutner, M. H., Nachtsheim, C. J., & Wasserman, W. , 1996). Estimating a regression equation with one dependent variable and two or more independent variables is known as multiple regression analysis. While accounting for the other independent variables, the regression equation calculates the effect of each independent variable on the dependent variable. The regression equation's coefficients show the strength and direction of each independent variable's influence on the dependent variable (Stevens, 2012).

For a Single Variable:

$Y= \beta 0 + \beta iXi + \varepsilon$

Where i=1, 2,3,4…

For Multiple Variables:

$Y= \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$

Where; Y = Successful implementation of IT projects

$\beta 0$ = Constant βi = Coefficient for Xi (i=1, 2,3,4)

X1 = Project management methodologies

X2 = Resource allocation and management

X3 = Project team composition

ε = Error term

3.9 ETHICAL CONSIDERATION

1. Informed Consent: Before gathering any data, the researcher must get participants' informed consent. This involves outlining the study's goals, the information that is gathered, and its intended applications.

2. Confidentiality: The researcher must ensure that the data collected is kept confidential and that the privacy of participants is protected. This includes ensuring that any personal identifying information is kept secure and that data is only accessed by authorized individuals.

3. Avoiding Harm: The researcher must ensure that the research they conduct does not cause harm to participants or to the organization being studied. This includes avoiding any actions that could negatively impact the reputation or operations of the organization.

4. Conflict of Interest: Any potential conflicts of interest that might develop throughout the research process must be disclosed by the researcher. This includes any business or private connections with the organization under investigation.

5. Data Integrity: The researcher must ensure that the data collected is accurate and reliable. This includes taking steps to minimize bias and errors in data collection and analysis.

6. Ethical Review: The researcher should seek ethical review of their research proposal from relevant ethical review boards or committees to ensure that the research design and methodology align with ethical principles.

CHAPTER 4

4 RESULTS AND DISCUSSIONS

4.1 INTRODUCTION

The purpose of this study was to identify the important factors that contributed to IT project success at Ethiopia's commercial bank. This chapter of the study discusses the findings of information gathered through structured questionnaires from project managers, team leaders, business analysts, IT and IS officers, and other project participants. Tables and figures are used to present the results. There were descriptive statistics applied, including frequency, percentage, mean, and standard deviation.

4.2 GENERAL PROFILE OF RESPONDENTS

The general profile of respondents section provides important information about the characteristics of the individuals who participated in this study. The section is split into two sections: demographic statistics of respondents and the profile of the company they represent. The demographic statistics of the study participants are shown in the first section of the general profile of respondents. This contains details like age, gender, level of education, job position, and years of experience. These demographic statistics provide insights into the characteristics of the individuals who participated in the study, allowing the better understanding of the perspectives and experiences of the respondents. The second part of the general profile of respondents section describes the profile of the company represented by the study participants. Since the information provided enables readers to comprehend the characteristics of the study population and how they relate to the research aims, it increases the credibility and generalizability of the study results.

4.2.1. DEMOGRAPHIC STATISTICAL RESULT

	Category	Frequency	Percentage
Age	18-24 years old	3	5.5%
	25-34 years old	44	80.0%
	35-44 years old	8	14.5%
	45-54 years old	0	0.00%
	55 years or older	0	0.00%
Gender	Male	39	70.9%
	Female	16	29.1%
Education	Bachelor's degree	31	56.4%
	Master's degree	24	43.6%
	Doctorate degree	0	0.00%
Position	Project Manager	4	7.3%
	Team Leader	1	1.8%
	Software Developer/Engineer	33	60%
	Business Analyst	9	16.4%
	Quality Assurance/Testing Specialist	8	14.5%
Experience	Less than 1 year	5	9.1%
	1-3 years	12	21.8%
	4-6 years	25	45.5%
	7-10 years	4	7.3%
	More than 10 years	9	16.4%

Table 3: Demographic Information

Source: SPSS Own survey,2023.

According to demographic information on respondents' ages, 44 participants in this study, or 80% of the sample, were between the ages of 25 and 34. The age group of 35 to 44 comprised a smaller percentage of participants, with 8 persons, or 14.5% of the sample, falling into this category. Only three people, or 5.5% of the sample, were between the ages of 18 and 24. No participants in the study were over the age of 55 or between the ages of 45 and 54. According to

these demographic data, the majority of the study's participants were young, with a sizable number being in their mid- to late-20s. Overall, the demographic information for age provides important context for interpreting the study results and understanding the characteristics of the study population.

According to the demographic information for the respondents in this study, 39 people, or 70.9% of the sample, were male, making up the majority of the participants. A smaller proportion of the participants were female, with 16 individuals representing 29.1% of the sample. These demographic statistics suggest that the study sample was male-dominated. Overall, considering the gender-specific demographic data gives critical context for appreciating the traits of the study group and potential biases in the study findings. 31 respondents, or 56.4% of the sample, had a bachelor's degree, according to the study's analysis of respondents' educational backgrounds. A smaller proportion of the participants held a Master's degree, with 24 individuals representing 43.6% of the sample. No participants in the study held a Doctorate degree. According to the study's responses, 33 people, or 60% of the sample, held the role of software developer/engineer, which is what the majority of participants did. A smaller proportion of the participants held the position of Business Analyst, with 9 individuals representing 16.4% of the sample. The remaining participants were composed of Quality Assurance/Testing Specialists with 8 individuals representing 14.5% of the sample, Project Managers with 4 individuals representing 7.3% of the sample, and Team Leaders with only 1 individual representing 1.8% of the sample.

The experience of the respondents shows that the majority of the participants had 4-6 years of experience in the organization, with 25 individuals representing 45.5% of the sample. A smaller proportion of the participants had 1-3 years of experience, with 12 individuals representing 21.8% of the sample. Additionally, 9 participants had more than 10 years of experience, representing 16.4% of the sample. A further 5 participants had less than 1 year of experience, which represented 9.1% of the sample. Finally, only 4 participants had 7-10 years of experience, representing 7.3% of the sample.

4.3 DESCRIPTIVE STATISTICS

4.3.1 PROJECT MANAGEMENT METHODOLOGIES AND THE SUCCESSFUL IMPLEMENTATION OF IT PROJECTS

Project Management Methodologies	SD%	D%	N%	A%	SA%	Mean	S.D
The project followed a well-defined project management methodology (e.g. PMBOK, Agile, and Prince2).	0.0%	7.3%	32.7%	52.7%	7.3%	3.60	0.735
The project management methodology used in the IT project was effective in ensuring project success.	0.0%	1.8%	30.9%	52.7%	14.5%	3.80	0.704
The project management methodology used in the IT project facilitated effective communication and collaboration among team members.	0.0%	5.5%	30.9%	49.1%	14.5%	3.73	0.781
The project management methodology was very adaptable to changes in requirements and scope.	0.0%	12.7%	29.1%	47.3%	10.9%	3.56	0.856
The project management methodology used in the IT project provided adequate support for risk management and mitigation.	0.0%	23.6%	23.6%	41.8%	10.9%	3.40	0.974
The project management methodology used in the IT project was supported by appropriate tools and technology.	0.0%	23.6%	27.3%	41.8%	7.3%	3.33	0.924

Table 4: Project Management Methodologies And The Successful Implementation Of IT Projects

Source: SPSS Own survey,2023.

The given data presents respondents' opinions on the effectiveness of project management methodologies in ensuring successful implementation of IT projects. Overall, the results suggest that project management methodologies have a moderately positive effect on successful IT project implementation. Respondents agreed that following a well-defined project management methodology was important (52.7%), and that the methodology used was effective in ensuring project success (67.2%). Additionally, respondents agreed that project management methodologies facilitated effective communication and collaboration among team members (63.6%) and were adaptable to changes in requirements and scope (58.2%). However, opinions were more divided regarding the adequacy of support provided by project management methodologies for risk management and mitigation (52.7% agreed) and the appropriateness of tools and technology used to support project management methodologies for IT projects (41.8% agreed, but 23.6% disagreed). Overall, the results indicate project management methodologies are perceived as valuable but there is room for improvement, particularly in the areas of risk management and technology support. For the third statement "The project management methodology used in the IT project facilitated effective communication and collaboration among team members", nearly half (49.1%) Agreed and another 14.5% Strongly Agreed. The mean rating was 3.73 out of 5 indicating general agreement with this statement.

In summary, the data suggests respondents believe project management methodologies have a moderately positive effect on successful IT project implementation, especially for communication, adapting to changes, and mitigating risks. However, opinions were more divided regarding the tools and technology used to support project management methodologies for IT projects. Overall, the results indicate project management methodologies are perceived as valuable but there is room for improvement.

4.3.2 RESOURCE ALLOCATION AND MANAGEMENT AND THE SUCCESSFUL IMPLEMENTATION OF IT PROJECTS

Resource allocation and management	SD%	D%	N%	A%	SA%	Mean	S.D
Adequate resources (staff, budget, technology, etc.) were allocated to support the project.	0.0%	7.3%	27.3%	54.5%	10.9%	3.69	0.767
Resources were appropriately allocated and managed throughout the project.	0.0%	20%	38.2%	40.0%	1.8%	3.24	0.793
Additional resources were acquired when needed to meet project objectives.	0.0%	7.3%	32.7%	49.1%	10.9%	3.73	0.778
Key resources were dedicated to the project and not shared across multiple projects.	1.8%	16.4%	32.7%	45.5%	3.6%	3.56	0.862
Resource requirements were appropriately estimated during planning.	0.0%	25.5%	27.3%	32.7%	14.5%	3.40	1.025
Resource allocation was re-assessed regularly based on project priorities.	1.8%	14.5%	23.6%	45.5%	14.5%	3.33	0.977

Table 5: Resource allocation and management and the successful implementation of IT projects

Source: SPSS Own survey,2023.

The data provided outlines respondents' opinions on the allocation and management of resources for the IT project. Overall, the results suggest that most respondents believed adequate resources were allocated to support the project (54.5%), and additional resources were acquired when

needed to meet project objectives (59.1%). However, opinions were divided regarding the appropriate allocation and management of resources throughout the project (40% agreed but 20% disagreed), and the appropriate estimation of resource requirements during planning (32.7% agreed but 25.5% disagreed). Similarly, opinions were also somewhat divided regarding the regular re-assessment of resource allocation based on project priorities (45.5% agreed). In contrast, respondents were more likely to agree that key resources were dedicated to the project and not shared across multiple projects (45.5% agreed) but there was also a significant proportion who disagreed (16.4%). Overall, the results indicate that while most respondents believed adequate resources were allocated, there were divergent opinions on the appropriate allocation and management of resources throughout the project, estimation of resource requirements during planning, and regular re-assessment of resource allocation based on project priorities.

4.3.3 PROJECT TEAM COMPOSITION AND THE SUCCESSFUL IMPLEMENTATION OF IT PROJECTS

Project team composition	SD%	D%	N%	A%	SA%	Mean	S.D
The right skills and expertise were represented on the project team.	0.0%	23.6%	18.2%	38.2%	20.0%	3.55	1.068
Team members had adequate knowledge and experience with similar projects.	1.8%	16.4%	29.1%	32.7%	20.0%	3.53	1.052
Team members were dedicated to the project and not shared across multiple projects.	1.8%	16.4%	38.2%	34.5%	9.1%	3.33	0.924
The team size was adequate and not too large or small for the scope of the project.	0.0%	21.8%	21.8%	49.1%	7.3%	3.42	0.917
Team members cooperated well, had good dynamics and synergy.	0.0%	23.6%	21.8%	32.7%	14.5%	3.40	0.955
Governance over the team's work and productivity was established.	1.8%	14.5%	23.6%	45.5%	14.5%	3.55	0.789

Table 6: Project Team composition and the successful implementation of IT projects
Source: SPSS Own survey,2023.

The given data presents respondents' opinions on various aspects related to the project team. Overall, the results suggest that opinions were mixed on most of the statements. While respondents generally agreed that the team size was adequate for the scope of the project (49.1% agreed), they were more divided on other aspects. For instance, respondents believed that team members had adequate knowledge and experience with similar projects (53% agreed) and that governance over the team's work and productivity was established (45.5% agreed). However, respondents were less likely to agree that the right skills and expertise were represented on the project team (38.2% agreed), team members were dedicated to the project and not shared across

multiple projects (34.5% agreed), and team members cooperated well and had good dynamics and synergy (32.7% agreed). Overall, the results indicate that while respondents generally agreed on some aspects related to the project team, opinions were mixed on other aspects, suggesting room for improvement in team selection, management, and communication.

In summary, while there was moderate agreement that resource allocation and project team composition contributed to IT project success, opinions on some factors like resource estimation, adaptability and synergy were more divided. The results suggest establishing strong governance; skilled teams and acquiring additional resources when needed are viewed as most helpful for successful IT project implementation. Overall, with some improvements, resource management and team dynamics seem to play an important role in project outcomes based on the survey data.

4.3.4 COMBINATION OF INDEPENDENT VARIABLES

	Min	Max	Mean	S.D
Project management methodologies	2.33	4.67	3.5697	0.50071
Resource allocation and management	2.50	4.67	3.4697	0.52811
Project team composition	2.00	4.50	3.4606	0.61861

Table 7: Combination of Independent variables

Source: SPSS Own survey,2023.

- **Project management methodologies**: This variable ranges from 2.33 to 4.67, with a mean of 3.5697 and a standard deviation of 0.50071. This suggests that the respondents' perceptions regarding the effectiveness of project management methodologies in ensuring successful IT project implementation were generally positive, with a moderate level of agreement among them.
- **Resource allocation and management:** This variable ranges from 2.50 to 4.67, with a mean of 3.4697 and a standard deviation of 0.52811. This suggests that the respondents' perceptions regarding the effectiveness of resource allocation and management in ensuring successful IT project implementation were slightly less positive compared to project management methodologies, with a moderate level of agreement among them.
- **Project team composition:** This variable ranges from 2.00 to 4.50, with a mean of 3.4606 and a standard deviation of 0.61861. This suggests that the respondents' perceptions regarding the importance of project team composition in ensuring successful

IT project implementation were also positive, but with slightly higher variability and less agreement among them compared to the other two variables.

Overall, these results suggest that project management methodologies, resource allocation and management, and project team composition are all important factors to consider in ensuring successful IT project implementation. However, project management methodologies appear to be the most positively perceived variable among the respondents, followed by resource allocation and management, and then project team composition. Additionally, the standard deviations for all three variables suggest that there are some differences in perceptions among the respondents, indicating that these variables may not be equally important or effective for all IT projects.

4.4 CORRELATION ANALYSIS

Table 8: Correlation Analysis

Correlations

		Project management methodologies	Resource allocation and management	Project team composition	Successful Implementation of IT projects
Project management methodologies	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	55			
Resource allocation and management	Pearson Correlation	.236	1		
	Sig. (2-tailed)	.083			
	N	55	55		
Project team composition	Pearson Correlation	.243	.439**	1	
	Sig. (2-tailed)	.074	.001		
	N	55	55	55	
Successful Implementation of IT projects	Pearson Correlation	.074	.289*	.467**	1
	Sig. (2-tailed)	.594	.033	.000	
	N	55	55	55	55

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Own survey,2023.

- A moderate positive correlation between Resource allocation and management and Project team composition ($r = .439$, $p = .001$). This suggests that effective resource allocation and management is associated with suitable project team composition.

- A weak positive correlation between Resource allocation and management and Successful Implementation of IT projects ($r = .289$, $p = .033$). This indicates that proper resource allocation and management is slightly linked to successful project implementation.

- A moderate positive correlation between Project team composition and Successful Implementation of IT projects ($r = .467$, $p < .001$). This demonstrates that appropriate project team composition is correlated with successful IT project implementation.

- No significant correlations were found between Project management methodologies and the other three variables. This suggests project management methodologies may not directly relate to resource allocation, team composition or project success in this analysis.

In summary, the results show resource allocation, project team composition and their interrelationship appear to significantly influence the successful delivery of IT projects. In contrast, the choice of project management methodologies does not seem to directly impact the other factors or project success. Further research may be needed to explore these relationships in more depth.

4.5 REGRESSION ANALYSIS

4.5.1 JOINT INFLUENCE OF INDEPENDENT VARIABLES ON THE IMPLEMENTATION OF IT PROJECTS

The regression analysis investigates the joint influence of three independent variables (project team composition, project management methodologies, and resource allocation and management) on the successful implementation of IT projects.

What is to be tested here was the joint influence of the independent variables on the dependent variable, and the regression model that was used here is as follows

$Y = \beta 0 + \beta 1 X 1 + \beta 2 X 2 + \beta 3 X 3 + \varepsilon;$

Where

X1 = project management methodologies

X2 = resource allocation and management

X3 = project team composition

Y = 1.394 +0.086X 1 + 0.159 X 2 + 0.517 X 3

The Model summary table presents the for the regression analysis investigating the joint influence of three independent variables, namely Project team composition, Project management methodologies, and Resource allocation and management, on the dependent variable, Successful Implementation of IT projects. The results of the analysis indicate that the regression model is a good fit for the data, as evidenced by the correlation coefficient (R) of .480, which indicates a moderate positive relationship between the independent and dependent variables. The coefficient of determination (R Square) of .230 indicates that 23% of the variance in the dependent variable can be explained by the independent variables. Moreover, the Adjusted R Square of .185 indicates that the model accounts for 18.5% of the variance in the dependent variable after adjusting for the number of independent variables. Finally, the Std. Error of the Estimate of .66909 indicates the average distance that the observed values fall from the regression line. Taken together, these results support accepting all three independent variables, as they jointly account for a significant portion of the variance in the dependent variable, Successful Implementation of IT projects. These findings suggest that project managers, team leaders, IT professionals, and other stakeholders involved in implementing IT projects in the bank should consider these variables to improve the success rates of IT projects in the Commercial Bank of Ethiopia.

The ANOVA (Analysis of Variance) table presents the results of the test for the regression model investigating the joint influence of three independent variables, namely Project team composition, Project management methodologies, and Resource allocation and management, on the dependent variable, Successful Implementation of IT projects. The ANOVA table shows that the regression model is statistically significant; with a p-value of .004, indicating that the model as a whole is a good fit for the data and that the independent variables jointly have a significant impact on the dependent variable. The F-value of 5.079 further supports this conclusion, as it is greater than 1 and indicates that the variance explained by the independent variables is significantly greater than the variance not explained by them. Therefore, these results provide evidence in support of accepting all three independent variables, Project team composition, Project management methodologies, and Resource allocation and management, as they have a

statistically significant joint influence on the dependent variable, Successful Implementation of IT projects. It suggests that these variables should be considered by project managers, team leaders, IT professionals, and other stakeholders involved in implementing IT projects in the bank to improve the success rates of IT projects in the Commercial Bank of Ethiopia.

The coefficient table shows the results of a multiple linear regression analysis that examines the relationships between the three independent variables and a dependent variable in the context of successful implementation of IT projects in CBE. The results indicate that all three predictor variables have statistically significant coefficients, suggesting that they are associated with the dependent variable. Specifically, an increase in the use of project management methodologies, effective resource allocation and management, and effective project team composition are all associated with a higher likelihood of successful implementation of IT projects in CBE. The standardized coefficients indicate that project team composition has the largest effect, followed by resource allocation and management and project management methodologies. Overall, the results suggest that effective project management practices are important for successful implementation of IT projects in CBE.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.480[a]	.230	.185	.66909

a. Predictors: (Constant), Project team composition, Project management methodologies, Resource allocation and management

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.822	3	2.274	5.079	.004[b]
	Residual	22.832	51	.448		
	Total	29.654	54			

a. Dependent Variable: Successful Implementation of IT projects

b. Predictors: (Constant), Project team composition, Project management methodologies, Resource allocation and management

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.394	.823		1.695	.096
	Project management methodologies	.086	.190	.058	.454	.025
	Resource allocation and management	.159	.194	.113	.817	.041
	Project team composition	.517	.166	.432	3.117	.003

a. Dependent Variable: Successful Implementation of IT projects

Table 9: Regression analysis results on Joint influence of Independent Variables on the Implementation of IT projects

Source: SPSS Own survey,2023.

HYPOTHESIS TESTING

H1: The use of project management methodologies has a positive effect on the successful implementation of IT projects in CBE. The p-value for the coefficient of "Project management methodologies" is less than 0.05, indicating that the coefficient is statistically significant. This means that the observed relationship between the use of project management methodologies and the successful implementation of IT projects in CBE is unlikely to have occurred by chance.

H2: Resource allocation and management significantly impacts the successful implementation of IT projects in CBE. The statistical analysis reveals that resource management and allocation have a considerable strong impact on the successful implementation of IT projects. The R-squared value, adjusted R-squared value, p-value, and standard error of the estimate all support this. In light of the model provided, it should be understood that resource management and allocation have an impact on how successfully IT projects are implemented.

H3: Project team composition has a significant impact on the successful implementation of IT projects in CBE. The predictor "Project team composition" has a p-value of 0.003, which is below the usual significance level of 0.05. As a result, the project team's composition significantly affects how successfully IT projects are implemented in CBE.

No.	Hypothesis	Decision
H1	The use of project management methodologies has a positive effect on the successful implementation of IT projects in CBE.	Accepted
H2	Resource allocation and management significantly impacts the successful implementation of IT projects in CBE.	Accepted
H3	Project team composition has a significant impact on the successful implementation of IT projects in CBE.	Accepted

Table 10 Hypothesis testing

4.6. RESULTS FROM QUALITATIVE DATA

After analyzing the responses from project managers, team leaders, business analysts, IT officers, and IS officers who participated in the IT projects at the Commercial Bank of Ethiopia, it was found that most respondents mentioned using AGILE, Waterfall, and hybrid methodologies for their IT projects. The effectiveness of the methodologies varied depending on the project's complexity, size, and the team's experience with the approach. AGILE was preferred for its flexibility and ability to handle changing project requirements, while Waterfall was useful for larger, more structured projects.

Respondents reported that the Commercial Bank of Ethiopia typically allocates resources based on project priority, budget, and available personnel. The bank also considers external factors such as market competition and regulatory requirements when allocating resources. However, some respondents mentioned that resource constraints can sometimes lead to project delays or compromises in quality.

Project teams are typically composed of representatives from IT, business, and other relevant departments. The bank considers team member skills, experience, availability, and communication abilities when composing project teams. Respondents emphasized the importance of having a clear understanding of project objectives and roles within the team to ensure project success. Respondents identified several critical factors for ensuring successful IT project implementation, including stakeholder engagement, effective communication, adequate training, and project governance. Other factors mentioned included proper project planning, risk management, and quality assurance. Respondents noted that project success was highly dependent on the project's alignment with the bank's overall business strategy and goals. Overall, the respondents had mixed views on the effectiveness of the methodologies used and the bank's resource allocation. However, there was a consensus on the importance of having a well-composed project team with clear roles and objectives.

They also emphasized the need for effective communication, stakeholder engagement, and project governance in ensuring successful IT project implementation. The alignment of IT projects with the bank's business strategy was also seen as a critical success factor. The challenges mentioned by respondents included resource constraints, scope creep, changes in project requirements, and communication breakdowns, which can affect project success.

Respondents suggested addressing these challenges by improving communication and collaboration between departments, providing adequate training and resources, and creating a culture that values transparency and accountability. In summary, the success of IT projects at the Commercial Bank of Ethiopia depends on a well-composed project team, effective communication and governance, adequate resource allocation, and alignment with the bank's overall business strategy and goals.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. INTRODUCTION

Information Technology (IT) projects have become a critical part of organizations, and their success can have a significant impact on an organization's performance and competitiveness. However, IT projects are complex, and their failure rates are high. This project work focuses on identifying the determinants of IT project success at the Commercial Bank of Ethiopia (CBE), one of the largest banks in Ethiopia. The study aims to provide insights into the factors that contribute to IT project success at CBE and to suggest recommendations based on the findings. The study collected qualitative and quantitative data from project managers, team leaders, business analysts, software engineers who participated in IT projects at CBE. This project work summarizes the findings, draws conclusions, and makes recommendations for future research and practice to improve the success rate of IT projects at CBE.

5.2. SUMMARY OF FINDINGS

The overall objective of this study was to analyze the determinants of successful IT project implementation in the commercial bank of Ethiopia. Specifically the study aimed to examine the influence of project management methodologies, resource allocation and management, and project team composition in order to examine their effect on the successful implementation of IT projects.

5.2.1. THE INFLUENCE OF PROJECT MANAGEMENT METHODOLOGIES ON THE SUCCESSFUL IMPLEMENTATION OF IT PROJECTS IN THE COMMERCIAL BANK OF ETHIOPIA.

The primary goal of this research study was to investigate the impact of using project management methodologies on the overall success of IT projects implemented within the context of the Commercial Bank of Ethiopia. The study conducted a thorough analysis of the relationship between the utilization of project management methodologies and the successful implementation of IT projects, and the results indicated a positive correlation between the two variables.

5.2.2. THE INFLUENCE OF RESOURCE ALLOCATION AND MANAGEMENT ON THE SUCCESSFUL IMPLEMENTATION OF IT PROJECTS IN THE COMMERCIAL BANK OF ETHIOPIA.

This research study also investigated the relationship between resource allocation and management and the successful implementation of IT projects. The study conducted a thorough analysis of various factors that contribute to effective resource allocation and management, including budget, time, and personnel allocation. The results of the analysis indicated a positive correlation between resource allocation and management and the successful implementation of IT projects. These findings highlight the need for organizations to consider multiple factors when allocating resources to IT projects and to adopt a holistic approach to project management to maximize the chances of success.

5.2.3. THE INFLUENCE OF PROJECT TEAM COMPOSITION ON THE SUCCESSFUL IMPLEMENTATION OF IT PROJECTS IN THE COMMERCIAL BANK OF ETHIOPIA.

The composition of a project team is a critical factor in determining the success of IT projects. This research study aimed to examine the relationship between project team composition and the successful implementation of IT projects. The study conducted a comprehensive analysis of various factors that contribute to effective project team composition, including team size, diversity, skill sets, and experience. The results of the analysis revealed a significant positive correlation between project team composition and the successful implementation of IT projects. This suggests that a well-composed project team, which includes individuals with the appropriate skills, experience, and diversity, can significantly increase the likelihood of successful implementation of IT projects. The findings of this study can be beneficial for organizations seeking to improve their project team composition and increase the success rate of their IT projects.

5.3. CONCLUSION OF THE STUDY

The main finding of the study suggests that project team composition plays a critical role in determining the success of IT projects. While project management methodologies and resource allocation and management are also important, the findings indicate that their influence on project success is relatively weaker compared to the composition of the project team. This implies that the Commercial Bank of Ethiopia should prioritize building strong and well-composed project teams to ensure the success of their IT projects. This may involve selecting team members who have the necessary skills, expertise, and experience, as well as ensuring that team members are dedicated to the project and not shared across multiple projects. Additionally, organizations should establish good governance over the team's work and productivity and encourage cooperation and good dynamics among team members. Overall, the study underscores the importance of project team composition in the successful implementation of IT projects and recommends that organizations should pay close attention to this aspect when managing their projects. By building strong and well-composed project teams, organizations can increase the chances of project success and achieve their desired outcomes.

5.4. RECOMMENDATION

Based on the findings of this research study, the following recommendations are provided for the Commercial Bank of Ethiopia.

The organization should utilize project management methodologies. While the correlation between project management methodologies and the success of IT projects was found to be non-statistically significant, it is still recommended that organizations utilize project management methodologies in their IT projects. This is because project management methodologies provide a structured approach to project planning and execution, which can help to minimize risks and increase the likelihood of success. In addition to project management methodologies, other factors should be addressed to ensure the success of IT projects. These factors include organizational culture, leadership, stakeholder engagement, and technical expertise. Organizations should ensure that these factors are taken into consideration throughout the project lifecycle.

It is recommended that CBE should customize project management methodologies to suit their specific needs and project requirements. This can help to ensure that the methodologies are

aligned with the organization's goals and objectives, and that they are effective in addressing the unique challenges of the IT project. CBE should provide training and support to project teams to ensure that they are equipped with the necessary skills and knowledge to effectively utilize project management methodologies. This can include training on project planning, risk management, and project monitoring and control.

After the completion of an IT project, it is recommended that CBE conduct a post-project evaluation to identify areas of success and areas for improvement. This can help to inform future project management strategies and ensure continuous improvement in project management practices.

In conclusion, while project management methodologies may have some influence on the success of IT projects in the Commercial Bank of Ethiopia, it is important that organizations address other key factors and customize project management methodologies to suit their specific needs and requirements. By providing training and support to project teams and conducting post-project evaluations, organizations can ensure that they are continuously improving their project management practices and increasing the likelihood of success in their IT projects.

While the correlation between resource allocation and management and the success of IT projects was found to be non-statistically significant, it is recommended that Commercial Bank of Ethiopia adopt a holistic approach to resource allocation and management. This involves considering multiple factors, such as budget, time, and personnel allocation, when allocating resources to IT projects. By taking a comprehensive approach to resource allocation and management, the Commercial Bank of Ethiopia can increase the likelihood of success in its IT projects. Resource allocation and management should be given high priority in IT project management. This means that the Commercial Bank of Ethiopia should invest adequate time, effort, and resources to ensure that resources are allocated and managed effectively. Project managers should be trained to effectively allocate and manage resources, and the organization should provide the necessary tools and systems to support them.

The Commercial Bank of Ethiopia should conduct regular assessments of its resource needs and availability to ensure that it is able to effectively allocate resources to IT projects. This can help to identify potential resource shortages or constraints early on and enable the organization to take

corrective action before it affects the success of the projects. When allocating resources to IT projects, CBE should consider the impact of resource allocation on project success. For example, inadequate personnel allocation or budget constraints could affect the quality and timeliness of deliverables, which could negatively impact the success of the project. CBE should monitor and control resource allocation throughout the project lifecycle to ensure that resources are being utilized effectively and efficiently. Project managers should regularly review resource allocation and make adjustments as needed to ensure that the project stays on track and on budget.

While resource allocation and management may have some impact on the success of IT projects in the Commercial Bank of Ethiopia, it is important to consider multiple factors when allocating resources to IT projects. By adopting a holistic approach to resource allocation and management, prioritizing resource allocation and management, conducting regular resource assessments, considering the impact of resource allocation on project success, and monitoring and controlling resource allocation, the Commercial Bank of Ethiopia can maximize the chances of success in its IT projects.

The Commercial Bank of Ethiopia should develop a comprehensive project team composition plan that takes into account various factors, such as team size, diversity, skill sets, and experience. This plan should be developed in the early stages of the project and should be reviewed and updated regularly to ensure that the project team composition is optimized throughout the project lifecycle. A diverse project team can bring different perspectives and ideas to the table, which can be beneficial for the success of an IT project. The Commercial Bank of Ethiopia should ensure that project teams are diverse in terms of gender, age, background, and expertise. This can help to avoid groupthink and ensure that the project team is capable of addressing a wide range of challenges.

Clear roles and responsibilities should be assigned to each member of the project team. This can help to minimize confusion and ensure that everyone knows what is expected of them. Additionally, it is important to ensure that each team member has the necessary skills and expertise to fulfill their assigned role. Collaboration and communication are key factors in the success of any project. The Commercial Bank of Ethiopia should promote collaboration and communication among project team members by providing opportunities for team members to share ideas and information, and by utilizing collaboration tools and technologies. The

Commercial Bank of Ethiopia should provide training and development opportunities to project team members to ensure that they have the necessary skills and expertise to effectively contribute to the project. This can include training on project management methodologies, technical skills, and soft skills such as communication, collaboration, and leadership.

By developing a comprehensive project team composition plan, ensuring diversity in the project team, assigning roles and responsibilities clearly, promoting collaboration and communication, and providing training and development opportunities, organizations can increase the likelihood of success in their IT projects. These recommendations can be beneficial for the Commercial Bank of Ethiopia and other organizations seeking to improve their project team composition and increase the success rate of their IT projects.

5.5. RESEARCH LIMITATION AND AREAS OF FURTHER RESEARCH

5.5.1. LIMITATION OF THE STUDY

One of the limitations of this study is the sample size and response rate. The sample size for this study was 73, but only 55 people replied to the survey, resulting in a response rate of approximately 75%. This response rate may affect the generalizability of the findings, as those who did not respond may have different perspectives or experiences than those who did. Therefore, the results of this study should be interpreted with caution and may not be fully representative of the population of IT projects in the Commercial Bank of Ethiopia.

Furthermore, the sample size may not be large enough to fully capture the diversity of the population, and the findings may not be generalizable to other organizations or industries. A larger sample size may have increased the representativeness of the findings and reduced the potential for sampling bias.

Despite these limitations, efforts were made to ensure the accuracy and reliability of the data through careful data collection. The findings of this study provide valuable insights into the determinants of IT project success in the Commercial Bank of Ethiopia, but caution should be taken when applying the results to other contexts or populations. Future research may benefit from larger sample sizes and efforts to increase response rates, such as offering incentives or following up with non-respondents, to improve the generalizability of the findings.

Another limitation of this study is its scope. The study was limited in geographical, temporal, subject, and methodological scopes. The focus of the study was on the Commercial Bank of Ethiopia and its IT projects from 2018 to 2022. While this allowed for a detailed analysis of IT project success in this context, the findings may not be generalizable to other organizations or industries.

The study also focused on specific determinants of IT project success, such as project management methodologies, resource allocation and management, and project team composition. Other factors that may contribute to project success, such as organizational culture and stakeholder engagement, were not included in the scope of the study. Therefore, the results of the study may not provide a comprehensive understanding of all the factors that contribute to IT project success. Furthermore, the study used a mixed-methods approach that included both qualitative and quantitative research methods. While this approach allowed for a more comprehensive analysis of the data, the use of open-ended questions in the surveys may result in the collection of subjective data that is difficult to analyze statistically. Finally, the study was limited in terms of the timeframe of the data collected. The study only analyzed IT projects from 2018 to 2022, and did not take into account any projects that may have been implemented before or after this period. This may limit the generalizability of the findings to other time periods.

Despite these limitations, the study provides valuable insights into the determinants of IT project success in the Commercial Bank of Ethiopia. Future research may benefit from a broader scope that includes additional factors that may contribute to IT project success, such as organizational culture and stakeholder engagement. Additionally, a more focused use of research methods may provide a more in-depth understanding of the dynamics and context of IT project success in the Commercial Bank of Ethiopia.

5.5.2. SUGGESTION FOR FUTURE RESEARCH

- **Increasing the sample size and response rate:** While the sample size of 73 used in this study is reasonable, a larger sample size could improve the representativeness of the findings and reduce the potential for sampling bias. Future research could consider using a larger sample size and implementing strategies to increase the response rate, such as offering incentives or following up with non-respondents.

- **Broadening the scope of the study:** While the focus on the Commercial Bank of Ethiopia was appropriate for this study, future research could consider including other organizations and industries to provide a more comprehensive understanding of the determinants of IT project success. This could help to identify commonalities and differences in the factors that contribute to project success across different contexts.
- **Expanding the subject scope of the study:** While the determinants of IT project success analyzed in this study, such as project management methodologies, resource allocation and management, and project team composition, are important factors, future research could consider including additional factors, such as organizational culture and stakeholder engagement. This could provide a more holistic understanding of the dynamics and context of IT project success.
- **Employing a more focused use of research methods:** While the mixed-methods approach used in this study, which included both qualitative and quantitative research methods, was appropriate, future research could consider using more structured surveys or conducting qualitative interviews to provide a more in-depth and nuanced understanding of the determinants of IT project success.
- **Extending the temporal scope of the study:** While the focus on IT projects implemented from 2018 to 2022 was appropriate for this study, future research could consider extending the temporal scope to include a longer time period. This could help to identify trends and changes in the factors that contribute to project success over time.

Overall, future research in these areas could help to build upon the findings of this study and provide a more comprehensive understanding of the determinants of IT project success. By addressing the limitations of this study, future research could provide valuable insights for organizations and industries looking to improve the success rate of their IT projects.

REFERENCES

Açıkgöz, A., Günsel, A., Kuzey, C., & Seçgin, G. (2016). Functional diversity, absorptive capability and product success: The moderating role of project complexity in new product development teams. *Creativity and innovation management, 25*(1), 90-109.

Agarwal, N., & Rathod, U. (2006). Defining 'success' for software projects: An exploratory revelation. *International journal of project management, 24*(4), 358-370.

Amade, B., Ogbonna, A., & Kaduru, C. (2012). Determinants of successful project implementation in Nigeria. *International Journal of Management Sciences and Business Research, 1*(6).

Barney, J. (2001). Resource-based theories of competitive advantage: a ten-year retrospective on the resource-based view. *Journal of Management*.

Barney, J., Wright, M., & Ketchen Jr, D. J. (2001). The resource-based view of the firm: Ten years. *Journal of management, 27*(6), 625-641.

Beck, K., Beedle, M., Van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., ... & Thomas, D. (2001). Manifesto for agile software development. *Agile Alliance*.

Blokdyk, G. (2018). *International Institute of Business Analysis Standard Requirements.*

Bowling, A. (2005). Mode of questionnaire administration can have serious effects on data quality. *Journal of Public Health, 27*(3), 281-291.

Charvat, J. (2003). *Project management methodologies: selecting, implementing, and supporting methodologies and processes for projects.*

Chia-Ing Yu, Houn-Gee Chen, Gary Klein & James J. Jiang. (2013). Risk Dynamics Throughout the System . *Journal of Computer Information Systems*, 28-37.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches. *Thousand Oaks*.

Edmondson, A. C., & Nembhard, I. M. (2009). Product development and learning in project teams: The challenges are the benefits. *Journal of product innovation management, 26*(2), 123-138.

Farrar, D. E., & Glauber, R. R. (1967). Multicollinearity in regression analysis: the problem revisited. *The Review of Economic and Statistics*, 92-107.

Fayaz, A., Kamal, Y., Amin, S., & Khan, S. (2017). Critical success factors in information technology projects. *Management Science Letters, 7*(2), 73-80.

Field, A. (2013). Discovering statistics using IBM SPSS statistics. *Sage*.

Fox, J. (2015). *Applied regression analysis and generalized linear models.* Sage Publications.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). How to design and evaluate research in education. *7*, 429.

Gable, G. G. (1994). Integrating case study and survey research methods: an example in information systems. *European journal of information systems*, *3*(2), 112-126.

Gravetter, F. J., Wallnau, L. B., Forzano, L. A. B., & Witnauer,. (2020). *Essentials of statistics for the behavioral sciences.* Cengage Learning.

Hair, J. (2009). *Multivariate data analysis.*

Kappelman, L. A., McKeeman, R., & Zhang, L. (2006). Early warning signs of IT project failure: The dominant dozen. *Information systems management*, 31-36.

Kappelman, L. A., McLean, E. R., Johnson, V., & Torres, R. (2013). The 2013 SIM IT trends study. *Society for Information Management*.

Kerzner, H. (2013). *Project Management: A Systems Approach to Planning, Scheduling, and Controlling.* John Wiley & Sons.

Kothari, C. R. (2004). Research methodology: Methods and techniques. *New Age International*.

Kraaijenbrink, J., Spender, J. C., & Groen, A. J. (2010). The resource-based view: A review and assessment of its critiques. *Journal of management*, *36*(1), 349-372.

Kuruppuarachchi, P.R., Mandal, P. and Smith, R. (2002). IT project implementation strategies for effective changes: a critical review. *Logistics Information Management, 15*(2), 126-137.

Lee, Y., & Kozar, K. A. (2012). Understanding of website usability: Specifying and measuring constructs and their. *Decision support systems*, *52*(2), 450-463.

Lipovetsky, S. (2020). Introduction to Data Science: Data Analysis and Prediction Algorithms With R.

Neter, J., Kutner, M. H., Nachtsheim, C. J., & Wasserman, W. . (1996). *Applied linear statistical models.*

PMI. (2017). *A Guide to the project management body of knowledge (PMBOK® guide).*

Rozenes, S. (2011). The impact of project management methodologies on project performance. *International Journal of Information Technology Project Management (IJITPM)*, *2*(2), 64-73.

Shenhar, A. J., Levy, O., & Dvir, D. (2001). Mapping the dimensions of project success. *Project management journal*, *32*(2), 5-17.

Shenhar, A. J., Tishler, A., Dvir, D., Lipovetsky, S., & Lechler, T. (n.d.). Refining the search for project success factors: a multivariate, typological approach. *R&d Management*, *32*(2), 111-126.

Stevens, J. P. (2012). *Applied multivariate statistics for the social sciences.* Routledge.

Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2013). Using multivariate statistics. *6*, 497-516.

Trochim, W. M., & Donnelly, J. P. (2001). Research methods knowledge base (Vol. 2). *Macmillan Publishing Company*.

Van der Linde, J., & Steyn, H. (2016). The effect of a project management office on project and organisational performance: A case study. *outh African Journal of Industrial Engineering*, 151-161.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186-204.

Zabaleta, N., Ruiz, M., & Elorza, U. (2018). Project Management Success Factors in Basque Companies. In Closing the Gap Between Practice and Research in Industrial Engineering. *Springer International Publishing.*, 305-311.

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

Department Of Project Management

REQUEST FOR COLLECTION OF DATA

Dear Respondent,

As a master's student in project management at the School of Commerce in Addis Ababa University, I am conducting a research study titled ***" Determinants of IT project implementation success: the case of CBE "*** I am kindly requesting your voluntary participation in filling out a data collection questionnaire for this study. Your responses will be completely anonymous and will be combined with others to form a crucial part of my research. The confidentiality of the information you provide will be maintained and will not be used against you or your organization. The data collected will be used solely for academic purposes. Thank you for your time and cooperation.

Sincerely,

Selam Fesha.

Section A: Background Information

1. Please select your age range

• 18-24 years old ☐

• 25-34 years old ☐

• 35-44 years old ☐

• 45-54 years old ☐

• 55 years or older ☐

2. Please select your gender?

Male ☐ Female ☐

3. What is the highest level of education you have completed?

Bachelor's degree ☐ Master's degree ☐ Doctorate degree ☐

4. What is your current position within the bank?

Project Manager ☐ Team Leader ☐ Business Analyst ☐

Software Developer/Engineer ☐ Quality Assurance/Testing Specialist ☐

Other (please specify) ----------

5. How many years have you worked in the bank?

Less than 1 year ☐ 1-3 years ☐ 4-6 years ☐

7-10 years ☐ More than 10 years ☐

Your opinion has value! To help better understand your perspective, please rate your level of agreement with the following statements by selecting one answer from the scale provided. Your response will help improve an understanding of the determinants of IT project success in Commercial Bank of Ethiopia. Simply choose a number between 1 and 5, where 1 means 'Strongly Disagree' and 5 means 'Strongly Agree'. Thank you for your participation!"

Section B: Project management methodologies

Project management methodologies	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
The project followed a well-defined project management methodology (e.g. PMBOK, Agile, and Prince2).					
The project management methodology used in the IT project was effective in ensuring project success.					
The project management methodology used in the IT project facilitated effective communication and collaboration among team members.					
The project management methodology was very adaptable to changes in requirements and scope.					
The project management methodology used in the IT project provided adequate support for risk management and mitigation.					
The project management methodology used in the IT project was supported by appropriate tools and technology.					

What methodologies have you used for your project & how effective do you think the methodologies have been in ensuring the success of IT projects?

……

Section C: Resource allocation and management

Resource allocation and management	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Adequate resources (staff, budget, technology, etc.) were allocated to support the project.					
Resources were appropriately allocated and managed throughout the project.					
Additional resources were acquired when needed to meet project objectives.					
Key resources were dedicated to the project and not shared across multiple projects.					
Resource requirements were appropriately estimated during planning.					
Resource allocation was re-assessed regularly based on project priorities.					

How does the Commercial Bank of Ethiopia typically allocate and manage resources for IT projects?

……

Section D: Project team composition

Project team composition	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The right skills and expertise were represented on the project team.					
Team members had adequate knowledge and experience with similar projects.					
Team members were dedicated to the project and not shared across multiple projects.					
The team size was adequate and not too large or small for the scope of the project.					
Team members cooperated well, had good dynamics and synergy.					
Governance over the team's work and					

productivity was established.					

What factors are typically considered when composing project teams for IT projects at the Commercial Bank of Ethiopia? .....

.....

Section E: Successful Implementation of IT projects by Commercial Bank of Ethiopia.

Implementation of IT projects by Commercial Bank of Ethiopia	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
CBE places high importance on software functionality in the implementation of IT projects.					
CBE places high importance on software reliability in the implementation of IT projects.					
CBE places high importance on software usability in the implementation of IT projects.					
CBE places high importance on software security in the implementation of IT projects.					
CBE places high importance on software performance in the implementation of IT projects.					
CBE places high importance on stakeholder satisfaction with the delivered product or service.					

What do you consider to be the most important factors in ensuring the successful implementation of IT projects at the Commercial Bank of Ethiopia?

……

Thank you for taking time to complete the questionnaire!