

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMENT

THE EFFECT OF SCOPE CREEP ON PROJECT SUCCESS: EVIDENCE FROM BANKING SECTOR IN ETHIOPIA-THE MODERATING ROLE OF PROJECT MANAGEMENT MATURITY

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR MASTER OF ARTS DEGREE IN PROJECT MANAGEMENT

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Statement of declaration

I declare that the research thesis titled "**The Effect of Scope Creep on Project Success: Evidence from the Banking sector in Ethiopia-The Moderating Role of Project Management Maturity"** is my original work and it hasn't been published or submitted for any kind of qualification elsewhere. All sources of materials used for this study have been duly acknowledged.

Saba Alebachew Kassaye

Signature_____

Date:_____

STATEMENT OF CERTIFICATION

This is to certify that, this project work "**The Effect of Scope Creep on Project Success: Evidence from the Banking sector in Ethiopia-The Moderating Role of Project Management Maturity"** by **Saba Alebachew Kassaye** in partial fulfilment of the requirements for Master of Arts degree in Project Management at Addis Ababa University School of Commerce, is an original work and not submitted earlier for any degree either at this university or any other university.

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ADDIS ABABA UNIVERSITY

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"**The Effect of Scope Creep on Project Success: Evidence from the Banking sector in Ethiopia-The Moderating Role of Project Management Maturity"**

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Dedication

“All that I am, or hope to be, I owe to my angel mother"

Abraham Lincoln

I would like to dedicate this work to the best mom in the world, Mrs. Mulunesh Bogale. You were not only my mom, but you were also my best friend, my role model, my hero. Your strength, love and courage have shaped everything that I am today. Your generosity and humility have taught me to be empathetic and humble. You were everything to me, my guide, my support, my rock, my entire world.

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List of abbreviations

PMO: Project Management Office

ISPMO: Information System Project Management Office

PMI: Project Management Institute

WBS: Work Breakdown Structure

IT: Information Technology

IS: Information System

SLR: Scientific Literature Review

PMBOK: Project Management Body of Knowledge

PMM: Project Management Maturity

PMMM: Project Management Maturity Model

CMMI: Capability Maturity Model Integration

OPM3: Organizational Project Management Maturity Model

P3M3: Portfolio, Program and Project Management Maturity Model

K-PMMM: Kerzner project Management Maturity Model

Abstract

The purpose of this study is to investigate the effect of scope creep on project success in commercial banks in Ethiopia by taking Project Management Maturity level as a moderating variable. The study is conducted on selected 6 commercial banks in Ethiopia. An explanatory research design has been adopted, and a quantitative research approach is used. A 203-sample population was used for data collection. The effect of scope creep on project success was quantitatively analyzed with a structured, close-ended questionnaire that was directed to 203 project staff who work in the surveyed commercial banks. Both the descriptive and inferential statistics were generated using SPSS version 26.0. The results of the study confirmed that the effect of human and organizational component of scope creep on project success is statistically significant and negative. However, the effect of technology components of scope creep on project success and the moderation effect of Project management maturity in the relationship between scope creep components and project success found to be statistically not significant. Based on these results, recommendations and suggestions for future studies are forwarded.

Key words: Scope creep, Project Success, project Management Maturity

Chapter 1: Introduction

1.1 Background of the study

It is very crucial for projects to clearly define and document their scope so that the projects can move forward in a coordinated manner and requirements can be written (Muhammad et al.,2013). A clearly defined project scope at an early stage of the project is very crucial to provide sufficient information needed to identify the work to be carried out and avoid major changes that adversely affect project success (Mohammed and Aibinu, 2012). Because it is very difficult to fully understand the scope at the beginning of projects that are characterized by high risk, evolving requirements and significant uncertainty, often their scope evolves during the implementation of the project (PMBOK, 2017).

Project management professionals are often faced with the issue of scope creep, i.e the expansion of project objectives and deliverables beyond what was agreed during the initial planning stage of the project without making cost and schedule adjustments. In simple terms scope creep is the uncontrolled and unplanned growth of a project's scope (Okafor,2022).

The implementation of unforeseen tasks due to scope creep has a significant negative impact on the cost, schedule and output quality of the project because the additional requirements require extra time, resources, materials and personnel (Okafor,2022).

Different statistics have identified scope creep to be one of the factors that have a direct impact on project success. The higher the scope creep occurrence, the lower the project success and vice-versa (Bakhtawar et.al., 2020). Factors of scope creep among other things include, inadequately defined scope, changing market conditions, poor understanding of product versatility, lack of formal communications, complexity of governance, lack of change control, poor WBS and lack of stakeholder's engagement (Monke and Echeme,2016).

In today's fast-growing economy, it is paramount for commercial banks to integrate modern banking technologies into their services to enhance their competitive advantage and increase profitability. Commercial banks in Ethiopia, with the intention of enhancing service delivery, increasing financial inclusion, and improving operational efficiency has been implementing different IS projects through their PMO by acquiring technology often from foreign vendors.

However, these projects are constantly facing scope creep challenges which in turn affect the successes of their projects.

Since many organizations are not aware of the critical factors of scope creep (Bakhtawar et.al., 2020), there is a need to provide an idea on the driving factors of scope creep and their significant effect on project success.

Therefore, this study aims to assess the Effect of scope creep on project success by considering the moderating role of project management maturity.

1.2 Statement of the Problem

Many studies have confirmed that scope creep plays a pivotal role in the project's success or failure (Bakhtawar et.al., 2020). According to Project management institute (PMI), 50% of software projects have experienced scope creep (Bakhtawar et.al., 2020). Okafor (2022) has identified 55% of IT projects face scope creep issues in their completed work followed by construction industry which recorded 47% of scope creep issues. IT and Construction industry sectors experience the highest scope creep issue since their projects are highly affected by technological advancements and shifting stakeholders' needs (Okafor,2022).

The occurrence of scope creep almost always leads to project cost overrun and delays (Mathias,2018). According to the survey conducted on 800 IT managers, 62% of the projects have identified scope creep to be the main cause of cost overruns (Bakhtawar et.al., 2020).

Despite the findings of many studies on the impact of scope creep on project success, especially in IT related projects, a negligible number of project managers give due emphasis to it and use scope creep management as one of risk prevention methods. In addition to that, both projects and project management theories underestimate the significance, likelihood of occurrence and influence of scope creep in project performances (Bakhtawar et.al., 2020).

As commercial banks try to integrate IS systems bought often from foreign companies into local conditions, add additional features after the requirements are specified or meet newly emerged stakeholder expectations, scope creep constantly occurs. These scope creep occurrences affect the cost, schedule and quality of the project.

Although there are some studies conducted on the impact of scope creep on project success of different projects across sectors, there are no ample empirical research that shows the impact of scope creep on success of commercial bank's IS projects.

Therefore, the purpose of this study is to empirically examine the impact of scope creep on project success of IS projects of commercial banks in Ethiopia, and how project management maturity moderates the relationship between these two variables.

1.3 Research Question

1. How do Technology components of scope creep influence project success?
2. How do Human components of scope creep influence project success?
3. How do Organizational components of scope creep influence project success?
4. How does project management maturity moderate the relationship between scope creep and project success?

1.4 Research Objective

1.4.1 General Objective

- The General objective of this study is to investigate the effect of scope creep on project success in IS projects of commercial banks in Ethiopia, by taking project management maturity as a moderating factor.

1.4.2 Specific objectives

- To determine the effect of Technology components of scope creep on project success.
- To investigate the effect of Human components of scope creep on project success.
- To test the effect of Organizational components of scope creep on project success.
- To determine the moderating role of project management maturity on the relationship between scope creep and project success.
- To assess the scope creep, project success and project management maturity level of commercial banks in Ethiopia.

1.5 Significance of the Study

This study contributes to the project management body of knowledge, to the practice and to policy formulation. Hence, it has both theoretical and practical significance.

Practically, the findings of this study provide evidence-based information to project managers, executives and project teams to help them understand how scope creep affects project success, and how PMM mitigates its effect. Having such an understanding will enhance their project planning, scope control and decision-making process.

The study contributes to the project management body of knowledge by providing a more nuanced understanding into the moderating role of maturity in project management in the relationship between scope creep and project success.

By empirically examining the moderating role of PMM in the relationship between scope creep and project success, the study provides useful information to organizations on how they can improve their PMM level and use maturity models as a strategic tool to enhance their project success.

In addition to that, by assessing the scope creep, project success and PMM level, the study will provide vital information to commercial banks for decision making aiming at capacity building, improving project execution and increasing project success.

Finally, this study could serve as a foundation for future students or researchers who venture to study the effect of scope creep on project success to other sectors or moderating variables.

1.6 Scope of the study

The study aims to empirically examine the effect of scope creep on project success by taking PMM as a moderating variable within commercial banks operating in Ethiopia. As the most implemented and significant project types within commercial banks are related to digitalization of the banking services, this paper is limited to IS projects implemented by selected commercial banks in Ethiopia.

The headquarters of almost all commercial banks operating in Ethiopia are situated in Addis Ababa, Ethiopia. They also handle most of their project management functions in their

headquarters. Hence, geographically this study is limited to Addis Ababa, Ethiopia where the headquarters and most of the project management functions of most of the commercial banks in Ethiopia are located.

Conceptually, the study aims to examine the effect of technology, human and organization factors affect project success by considering the moderating role of PMM.

The study employs cross-sectional research design. The data is collected using a well-structured questionnaire from project managers and project team members of selected commercial banks. Hence, the assessment of scope creep, project success and PMM level and their relationship is limited to a given point and time. By doing so the study intends to provide a detailed and focused information regarding the effect of scope creep on project success as well as the moderating role of PMM with in selected commercial banks in Ethiopia.

1.7 Limitation of the study

Though the study has theoretical and practical significance, it has some limitations which should be considered. Since the primary focus of the study is on commercial banks operating in Ethiopia, making generalization of its findings across sectors, such as public projects or to organizations in different sectors is limited. In addition to that, the use of cross-sectional research design hinders the study's capacity to observe the scope creep, project success and PMM changes overtime.

As a result, while the study provides valuable insight into the effect of scope creep in commercial banks, the generalizability of its findings across sectors or time.

1.8 Organization of the Study

This paper is organized into five chapters. The first chapter covers background of the study, statement of the problem, research questions and objectives, significance of the study, scope of the study, limitations and structure of the research. The second chapter is related to the review of related literature whereas chapter three describes methodology which includes research design, research approach, sampling techniques, methods, tools for data collection and data analysis. Chapter four presents the results and discussion and the final chapter i.e chapter five

presents the summary of findings, conclusions, and recommendations for next step and future studies.

1.9 Definition of key terms

Project: is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification.

Project management: is the application of knowledge, skills tools and techniques to project activities to meet the project requirements

Project scope: covers the entirety of what the project intends to achieve including the specific tasks, functions and deliverables. It delimits the project's boundaries, constraints and objectives.

Project scope management: is the process that makes sure all the required work is included to ensure successful project completion.

Scope creep: refers to any uncontrolled and unexpected changes in project requirements that extend the initial boundaries of the project".

Project success: project success is an accomplishment of a project within the specified time, cost, and quality that fulfills the specifications and should be sustainable as well.

Project management maturity: is the ongoing process of periodically identifying, measuring, implementing, and reassessing continuous improvement opportunities in the project delivery system and supporting infrastructure such that the organization can improve its ability to meet its strategic goals and objectives.

The Project Management Office (PMO): refers to an organizational unit responsible with coordination of human resources across all projects, coordination of communications, quality standards and risk assurance activities, monitor project schedule, monitor project budget, and monitor overall risk and coordinate.

CHAPTER 2: REVIEW OF RELATED LITERATURE

2.1 Theoretical Review of Related Literature

2.1.1 Scope Creep

In the context of a project, scope can refer to a product scope or project scope (PMBOK,2017). project scope refers to the entirety of the tasks that are needed to achieve the objectives of the project. Whereas product scope is related to the specific features of the project deliverables (Mohammed and Aibinu, 2012). Project scope management is the process through which all the required work is included to ensure successful project completion. It is mainly concerned with defining and controlling what is included in the project and what is not (PMBOK, 2017).

A properly defined and managed scope is very essential for a quality product delivery within the initially agreed up on budget and schedule (Mohammed and Aibinu, 2012). During project implementation, the occurrence of change is inevitable, which cannot be prevented but can be controlled. However, many of the changes that sneak into projects are not justifiable. These unjustifiable changes that sneak into projects often lead to cost overrun and project completion delays. It is this kind of unanticipated change to a project scope that is referred to as scope creep (Riaz and Jawad,2022). Scope creep is the unauthorized and unofficial slow and incremental change of a project scope. Similarly, project management institute (PMI) defines scope creep as the uncontrolled product or project scope expansion without making any time, cost or resource adjustments (PMBOK,2017).

It should be noted here that scope creep is very different from scope change, as scope change is the officially authorized decision of project managers to change the scope of the project (Mathias,2018). The process of getting an official approval and documentation of these changes distinguishes intentional scope change from scope creep which happens incrementally due to inaccuracies in requirements, stakeholder pressure or business need changes (Okafor,2022). In addition to that, the intentional and controlled modification of a project scope i.e Scope change can happen at any stage of the project cycle whereas scope creep often reveals itself during the early stage of the project cycle (Mathias,2018).

2.1.2 Components of Scope Creep

Understanding the specific factors of scope creep is very crucial to project success (Monwabisi et.al.,2025). Several studies have identified different factors of scope creep across different sectors, organizations and countries. Some of these factors include unclear or incomplete requirements, poor communication, unrealistic expectations, change requests, inadequate governance policy, lack of technology adoption, unclear project scope definition, lack of training and knowledge (Amin et.al.,2024). However, since these studies have specific objectives and limited scope by focusing on a specific sector or organization, their findings cannot account for all the possible factors of scope creep. Bakhtawar et.al., (2020) has done a systematic literature review (SLR) of research articles on scope creep and project success from the year 2010 to 2018 on different reputable scientific journals such as IEEE, Science direct, Emerald insights ,google scholar and came up with 13 factors that were repeated by various studies and additional 4 factors from an in depth interview with different academic and industry experts. Then by triangulating the identified factors from SLR and interview, proposed a comprehensive framework for measurement by grouping these factors into Technology Component, Human Component and Organization Component. Similarly, Riaz (2022) has the same three components for scope creep measurement.

2.1.2.1 Technology Component

One of the main factors within the technology component of scope creep is lack of clearly defined scope. When a project scope is not clearly defined at the initial stage of the project, there will be confusion of what and how to accomplish at a later stage, pushing the project to unintended direction which ultimately leads to scope creep. The other factor is changing market needs. The frequent changes in market trends will make the initially defined requirements outdated and scope change inevitable Riaz (2022). Technological scope creep also happens due to the size and complexity of the project. Complex and large projects are more susceptible to scope creep (Bakhtawar et.al., 2020). The bigger the projects, the higher the scope creep problem and associated cost (Riaz, 2022). Lack of adequately analyzed and properly managed risks could lead to scope creep. Hence, risk is another scope creep factor. In addition to that schedule and technological constraints are also factors of scope creep (Bakhtawar et.al., 2020).

2.1.2.2 Human Component

Another critical component of scope creep is human factors which are mainly related to stakeholders. Experienced human resources are essential to any organization or project success. When experienced personnel are lacking, it means project staff cannot properly control scope changes and scope creep occurs. Lack of effective stakeholder engagement would render project scope vague and ambiguous. Hence, poor stakeholder involvement is also another factor of scope creep (Riaz, 2022). Client's lack of knowledge of the projects' technical process could lead to scope creep. Developer's (Vendor's) lack of experience and frequent requests to change specific requirements are other factors of scope creep under this category (Bakhtawar et.al., 2020).

2.1.2.3. Organizational Component

Organizational factors also cause scope creep in projects. Ambiguous and vague project goals and objectives result in lack of clarity as to what and how to achieve it. This leads the project to unintended direction and scope creep. Inadequate resources are another cause of scope creep. Lack of organizational capability is also another scope creep factor. There is a lower chance of scope creep occurrence if the organization has well-structured standards and a strong management process to handle their projects (Riaz,2022). Indecision and ambiguity due to lack of proper communication could also lead to scope creep (Bakhtawar et.al., 2020).

2.1.3 Project Success

Through time, the definition of project success has evolved. At the beginning, a project was thought to be successful if it was completed within the initially specified time, budget and scope constraints commonly known as the "iron Triangle" (Mirza et.al.,2025). However, recent project success definition includes wider measuring criteria. For example, different studies cited in Mirza et.al.,(2025) argue that stakeholder satisfaction should be one of the crucial factors of project success. Others also opine that the sustainability of project outcomes and stakeholder collaboration quality should be one of the factors of project success. These shows that the definition of project success is widening through time to include more factors than the traditional criteria.

The factors of project success have been studied in a general project management context. However, it is very crucial to study project success in the context of IT projects, as these projects are characterized by high complexity, uncertainty and high risk (Carmen and Bayona, 2020). Though there was no convergence of literature in terms of success factors and definitions, Carmen and Bayona (2020) have found that the most mentioned project success criteria of IT projects to be the support of top management, user involvement, internal communication, knowledge, technical expertise and commitment.

2.1.4 Project Management Maturity

The term maturity can be defined as the existence of a perfect condition within the organization to achieve their intended goal (Andersen and Arne, 2007). Maturity in project management could then mean the use of recognized, advanced and attested systems and processes to achieve continuous project success (E.Burger et.al., 2024). It describes the level of development in an organization in terms of project management, systems, tools, processes and methodologies (Mitchal, 2023). According to Kerzner, as cited in Helder et.al.,(2012), PMM is the process of implementing a standardized methodology and process so that the likelihood of constant project success is very high. In other words, project maturity could mean that the organization is perfectly positioned to execute its project (Andersen and Arne, 2007). This definition is also supported by Andersen and Jessen (2003) as cited in Helder et.al.,(2012) in which they defined PMM as the measure of how close an organization is to an ideal condition for the achievement of their goal.

2.1.5 Project Management Maturity Models

One of the ways in which organizations can benchmark for project success improvement is to use project management maturity models (H.K and Steyn, 2009). Maturity models are models that describe capabilities, and qualitatively define the attributes used to categorize competencies into one of the already defined categories/levels (T.Bartosz, 2020). The design of project management maturity models is done in a way that can provide a framework with which organizations can develop their capabilities intentionally and progressively. This is done so they can achieve project success over time (H.K and Steyn, 2009). In other words, maturity models are frameworks that can be used to transform an organization from non-organized, less

standardization and documentation to a highly standardized organization. They can also be used as roadmaps for an organization improvement effort (Dan and Deffor, 2013).

Recently, maturity models were evolving as an actual and valid assessment tool to measure the project management maturity of an organization (H.K and Steyn, 2009). Over the years several reputable scholars and organizations have developed different project management maturity models. Some of these models include:

- Capability Maturity Model Integrated (CMMI) by Carnegie Mellon University's Software Engineering Institute
- Organizational Project Management Maturity Model (OPM3) by PMI
- Portfolio, program and Project Management Maturity Model presented (P3M3) by PM solution
- Kerzner Project Management Maturity Model (K-PMMM) by International Institute for Learning (IIL) H. Kerzner

Although the number of levels vary from model to model, all the major models help organizations in finding out their development stage (Mitchal, 2023). It should also be noted that these models differ from one another in terms of the concepts they entail and what they suggested to be the path of maturity (Dan and Deffor, 2013).

2.1.2.2 Capability Maturity Model Integrated (CMMI)

The CMMI originated from the capability Maturity Model (CMM) which was first developed by the Carnegie Mellon University software Engineering Institute to assess the maturity of software development processes. It later expanded its scope beyond software development, and many organizations have used it as tool to enhance their PMM level (Abdullah et.al.,2024). This model contains 5 levels of maturity, each one of them having a collective predefined criterion (Freek et.al., 2022). Level 1 is Initial, Level 2: Repeatable, Level 3: Defined, Level 4: Managed and Level 5: Optimizing. Each of these levels are like stair steps. Meaning, for an organization at any level of this maturity must satisfy both the current level and its previous level requirements (Helder et.al.,2012). CMMI helps to identify and assess the current level of process maturity. This in turn will help organizations to know what the issues are and resolve these issues to achieve higher maturity (Muhammad,2015).

2.1.5.2 Organizational Project Management Model (OPM3)

OPM3 model was first published by the PMI in 2003. The model is comprised of three components. The first component is knowledge which consists of best practices based on PMBOK guide. The second is the assessment component which refers to comparing best practices with the current maturity stage of the organization. The third component is the further improvement component which is related to taking improvement measures (Mitchal, 2023). OPM3 provides a framework for the integration of projects, program and portfolio management best practices. This model has defined five maturity levels to carry out maturity assessment of project, program and portfolio management either collectively or individually (Muhammad,2015). It emphasizes the carrying out of continuous assessment against two dimensions i.e management domain (project, program, portfolio and organizational) and the other is stages of maturity (standardization, measurement, management and continuous improvement). This model is essential in bringing about standardized outcomes, highlighting the value of effective management practices, having clearly defined project goals and balanced customer satisfaction with profit maximization (Abdullah et.al.,2024).

2.1.5.3 Portfolio, Program and Project Management Maturity Model (P3M3)

The model has three different sub-maturity models; Portfolio Management (PfM3), Program Management (PgM3), Project Management (PjM3). These models can either be used individually or collectively to assess the maturity level of project, program and portfolio management. For each of these sub-maturities, the organization's performance is measured against the key areas of governance, management control, benefits, risk, stakeholder, finance and resource management of the organization. For each of these key areas and sub-models, there are 5 levels of maturity. Level 1: awareness of process, Level 2: repeatable process, Level 3: defined process, Level 4: managed process and level 5: optimized process (Muhammad,2015). P3M3 is a very essential tool to improve PMM levels. While OPM3 focuses on bringing about standardized outcomes in organizational projects, the focus of P3M3 is improving project success by enhancing processes and stakeholder communication (Abdullah et.al.,2024).

2.1.5.4 Kerzner Project Management Maturity Model (K-PMMM)

K-PMMM was developed in 2001 with the intention of helping organizations implement strategic planning in project management and achieve maturity in due time. In this model, five levels of maturity are recognized, and each level is addressed by separate questions (Mitchal, 2023). These levels are common language, common process, singular methodology, bench marking and continuous improvement. To address the specific process and procedure objective at each level of maturity, K-PMMM proposes a progressive and step-by-step methodology (Sokhanvar et.al.,2024).

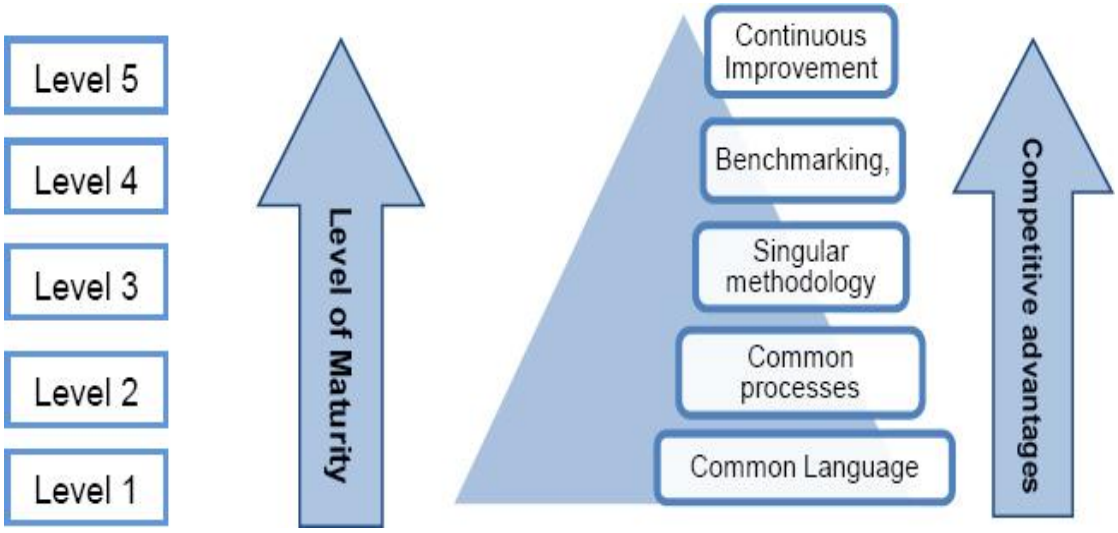


Figure 2.1 Kerzner Maturity Level

As shown in the figure above, K-PMMM begins by understanding project management concepts and developing a common language between project team members, then moves towards defining common processes, synchronizing all corporate methodologies into a singular method, continuously benchmarking practices against industry standards and ultimately using performance data to drive ongoing improvement of project management capabilities. By doing so, organizations can further through the PMM levels and improve their level of maturity, competitive advantage and overall project success (Abdullah et.al.,2024).

To this study, Kerzner's project management maturity model is employed. This is because the model offers a comprehensive framework for evaluating organizational project management

practices and its standardized questionnaire provides a well-structured and validated survey instrument for the assessment of project management maturity.

2.2 Empirical Review of Related Literature

2.2.1 Effect of Scope Creep on Project Success

Scope creep is a prevalent challenge in many projects, often resulting in cost overruns, schedule delays, and, in most cases, project failure (Jean and Njenga,2014) Several studies have found that scope creep is one of the key factors that have a direct impact on project success. For instance, Mirza et.al.,(2025) have found that scope creep has a statistically significant negative impact on project success. The negative relationship between scope creep and project success indicates the increase in scope creep occurrence diminishes the chance of project success. Also, Riaz and Jawad (2022) have found that all the scope creep factors, i.e Technology, Human and Organization have a statistically significant negative impact on project success.

Amin et.al.,(2024), found that out of the sampled projects in their studies, 87% of them experienced scope creep with an average magnitude of 15% of the initial project scope and additional project duration of 6 months. Which means that scope changes on average extend the project schedule by 6 months. A 15% scope change will have serious implications for the project's budget, time and overall success, as the additional scope implementation requires extra budget and time. Specifically, their findings show that an average 15% increase in scope leads to 1.2% and 1.6% spike in project time and cost respectively (Amin et.al.,2024).

According to Ifeanyi, (2022) 45% of surveyed projects across industries have experienced scope creep issues during their development stage. The findings of this study also show that IT sector to be the most affected sector by scope creep. Particularly, scope creep affects 55% of IT projects because of the difficulty to establish constant initial requirements and quick technology changes (Ifeanyi, 2022).

Many studies have also found different leading factors of scope creep. Monke and Echeme (2016), have found that lack of knowledge and product versatility to be the leading factors of scope creep followed by poor understanding of customer's requirements and poor quality of

work break down structures. whereas Riaz and Jawad (2022) found organizational factors to be the significant factor that affects project success followed by human and technological factors.

2.2.2 Impacts of the three Components of Scope Creep on project Success

Riaz and Jawad (2022) found technological factors of scope creep have negative impact on the success of the project. Also, Bakhtawar et.al., (2020), found that technology components have a negative impact on project success and account for 33.9% of project success variance. In addition to that, their study found that schedule constraints, unclear scope, and requirement volatility, factors within the technology factors, as the most critical factors of scope creep.

Similarly, the human factors of cope creep are negatively related to project success (Bakhtawar et.al., (2020) and account for 31.3% of projects success variance (Riaz and Jawad, 2022)**.** Organizational Component have a negative relationship with project success (Bakhtawar et.al., 2020). According to Riaz and Jawad (2022), organizational factors account for 47.3% of variance in project success.

2.2.3 Project Management Maturity and project success

PMM refers to the complexity and standardization of the organization current project management systems and processes. Higher PMM has a positive impact on project success (Helder et.al.,2023). Many studies have shown that an improved PMM level would enable organizations to have better performance and achieve customer satisfaction (Crawford,2015). According to PM solution study as reported in J. Kent Crawford (2015), 30% of mature organizations polled showed more than 25% performance improvement than the less mature organizations. Vittal and Rad, (2018) have found that having a formal and standardized project management process will force organizations to use proper project planning tools and techniques and facilitate the completion of a project within the specified budget. As a result the negative effect of scope creep on project success is minimized in organizations that has a higher level of project management maturity while organizations that has lower project management maturity level are more susceptible to delays and cost overruns due to uncontrolled scope changes.

2.3 Gaps in Existing Literature

There are several studies conducted on the impact of scope creep on project success. However, many of the studies did not consider and examined PMM as the moderating variable. These studies, by assuming uniform relationships across different organizational contexts, overlooked the possibility that PMM i.e the organizations project management process, governance structure and capabilities, can be critical in mitigating the negative effect of scope creep in project success. Because of this, it is very difficult to know how a mature project management process can help improve project performance and ease the negative impact of scope creep on project success.

Hence, with the view of providing evidence-based ideas into how project management maturity can be leveraged to address the scope creep impact on project success, this study examines the effect of Scope Creep on Project Success, as well as how PMM moderates the relationship between these two variables. By doing so, the study aims to provide practical recommendations for the integration of proper scope creep management strategy into the project management practice and how PMM can be used to improve project success.

2.4 Conceptual Framework and Hypothesis Development

2.4.1 Conceptual Framework

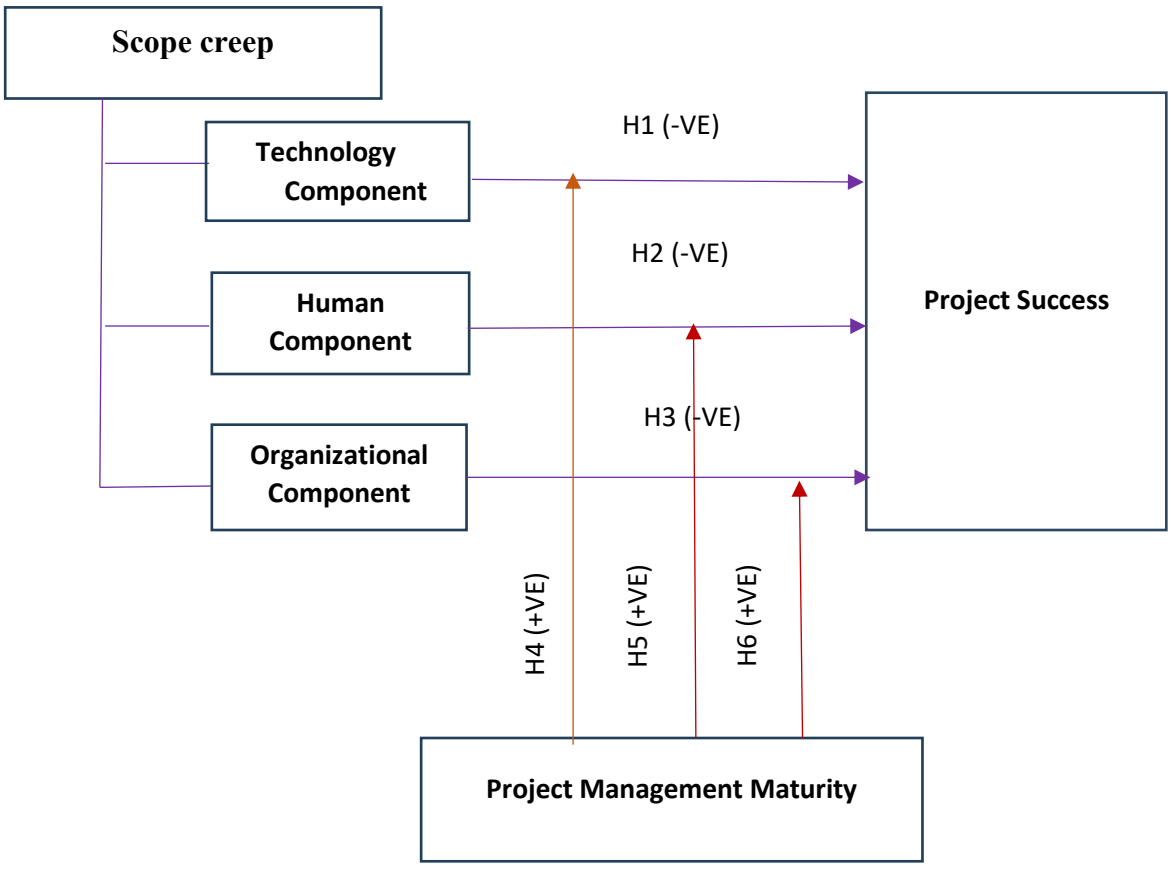


Figure 2.2 Conceptual framework of the study (Source: own Literature Review)

2.4.2 Statement of Hypothesis

Hypothesis 1 (H1): The Effect of Technology Component of scope creep on Project Success is statistically significant and Negative.

Hypothesis 2 (H2): The Effect of Human Component of scope creep on Project Success is statistically significant and Negative.

Hypothesis 3 (H3): The Effect of Organization Component of scope creep on Project Success is statistically significant and Negative.

Hypothesis 4 (H4): Project management maturity moderates the relationship between technology factors of Scope Creep and Project Success, such that the negative effect of technology factors on project success is weaker when project management maturity is high.

Hypothesis 5 (H5): Project management maturity moderates the relationship between Human factors of Scope Creep and Project Success, such that the negative effect of Human factors on project success is weaker when project management maturity is high.

Hypothesis 6 (H6): Project management maturity moderates the relationship between organization factors of Scope Creep and Project Success, such that the negative effect of organization factors on project success is weaker when project management maturity is high.

Chapter 3: Research Methodology

3.1 Description of the study area

This study will be conducted in Addis Ababa, Ethiopia. The headquarters of almost all commercial banks operating in Ethiopia are located in Addis Ababa, Ethiopia. To enhance efficiency, improve service delivery and increase their competitive advantages, commercial banks often initiate and implement several IS related projects such as core banking systems, electronic and mobile banking systems and digital payment solutions at their headquarters. As these projects engage several stakeholders, handle changing customer demands and face frequent technological changes, they are susceptible to scope creep problems.

Furthermore, Addis Ababa provides easy access to the most experienced project managers and project staffs of commercial banks operating in Ethiopia. These facts make Addis Ababa an ideal place to study the effect of scope creep on project success and examine how PMM moderates the relationship between them.

3.2 Research Design

As the purpose of this study is to assess the current state of scope creep, project success and project management maturity level of commercial banks in Ethiopia and examine the Impact of scope creep on project success using PMM as a moderating variable, both descriptive and explanatory research methods will be used.

Hence, the descriptive component systematically assesses the existing conditions of scope creep, project success and level of PMM, whereas the explanatory component examines the causal relationship between project success and scope creep using the moderating role of PMM.

3.3 Research Approach

In this study a quantitative research approach will be used. A quantitative research approach is adopted as it enables statistical analysis using numerical data. Particularly, quantitative approach is appropriate for hypothesis testing, objective measurement of variables and generalizing from a sample to a larger population (Kothari, 2004).

3.4 Target Population and Sampling Techniques

3.4.1 Target Population

To ensure representativeness and relevance to the research objective, this study selects commercial banks that have initiated, implemented and are still implementing IS related projects, established IS/IT project management office (PMO), structured project management practice, multiple IT/IS projects, relatively bigger sample size, convenience and willingness to participate in the study

Based on the above criteria, commercial bank of Ethiopia (CBE), Awash Bank, Dashen Bank, Bunna Bank, Enat Bank, NIB Bank were selected and approached. The target population of this study is: -

- ✓ IS PMO individual staff working on 21 different IS project of **commercial bank of Ethiopia (CBE)**.
- ✓ IT PMO individual staff working on 30 different IT projects of **Awash Bank.**
- ✓ Business solution program management department individual staff working on 3 different programs of **Dashen Bank.**
- ✓ Business solution department individual staff working on 6 different projects of **Bunna Bank.**
- ✓ IT Department individual staff working on 21 different projects of **Enat Bank.**
- ✓ IT and business development department individual staff working on 6 different projects of **NIB Bank.**

The target population includes only the permanent staff of PMO. It doesn't include ad-hoc taskforces, as they are not involved in the whole project management process. Rather they only provide some technical support on ad-hoc basis. Foreign Vendors are not included as well. As they are only involved in system integration and implementation, they can't provide complete information regarding the study variables.

As the permanent projects staffs and managers are very familiar and have first-hand information regarding the project system, process and overall project performance of the bank's IS projects, they will provide reliable information regarding the research question at hand.

The total target population of the selected commercial banks is **203**.

Table 3.1 Target population size for selected commercial banks

No	Commercial bank	No. of projects	Permanent Staff
1	CBE	21	138
2	Awash	30	9 (it is 12 but the 3 individuals are just getting on board they have not participated in any project yet)
3	Dashen	3 programs	19
4	Enat Bank	21	18
5	Bunna Bank	6	12
6	Nib Bank	6	7
Total		203	

N.B The number of projects and staff stated above are the numbers at the time of writing this paper. These numbers could vary from time to time as some projects complete their phase, staff move, re-assigned to other projects or a new project is added.

3.4.2 Sampling Technique

As the total number of target population is relatively small to each of the selected commercial banks, a census is applied for data collection. By applying census data, this study minimizes sampling error, increases the representativeness, reliability and accuracy of its findings.

To know the minimum required sample size, an online Daniel Soper's calculation was done. Daniel Soper's analysis will help determine the minimum required sample size for a multiple regression study, given the desired probability level, the number of predictors in the model, the anticipated effect size(f^2), and the desired statistical power level.

Given a desired anticipated effect size $f^2 = 0.15$, probability level $\alpha = 0.05$, desired statistical power of 0.8 in a regression with 7 predictors (technology, human, organizational Component

of scope creep, PMM and their respective interaction), the minimum required sample size is **103**. Therefore, the available target population is considered adequate for this study model.

3.1 Data Source and Collection Method

For this study, primary data is collected using questionnaires specifically designed to get quantitative information relevant to the study variables and address the research questions. A close-ended and well-structured questionnaire is administered to respondents to ensure uniformity in data collection, get reliable first-hand information and facilitate statistical analysis. The questionnaire evaluated the items using a 5-point Likert scale ranging from 1= strongly disagree, 2= disagree, 3= Neutral, 4= agree, 5= strongly agree.

3.2 Validity and Reliability of Instruments

Validity is "the extent to which a test measures what it claims to measure" and reliability is the "consistency of a measure over time" (Mira et.al., 2024). To ensure the validity of the measurements, this study employed a previously tested instrument by various research which measured the same construct.

The reliability of instruments used in this study is checked by running a Cronbach alpha test for each questionnaire item. A Cronbach's alpha Coefficient value of .70 or above is good reliability and it is proper to use it (Nawi et al. 2020). Cronbach's alpha values for all the items in this study is presented in Table 3.2.

Table 3.2 Cronbach's alpha values

Variable	Cronbach's alpha
Technology Factors	.706
Human Factors	.724
Organizational Factors	.758
Cost Effeciancy	.795
Schedule Adherance	.822
Quality Workmanship	.775
Stakeholder Satisfaction	.741
Meeting the Intended Goals	.799

Common Language	.871
Common Process	.842
Singular Methodology	.823
Bench Marking	.793
Continuous Improvement	.818

Source: Survey data, 2026

3.3 Data Analysis

The primary data collected using a questionnaire were analyzed with both descriptive statistics and regression analysis. The descriptive statistics provide an overview of the scope creep occurrence, project success and the level of PMM of commercial banks. Then a regression analysis is carried out to examine the causal relationship between the dependent and independent variables i.e project success and scope creep. The results are generated using a Statistical Package for Social Sciences (SPSS) 26.0 version. To analyze the moderating role of PMM between project success and scope creep, Hayes Process macro in SPSS is used.

3.4 Model Selection and Specification

Multiple linear regression model is best suited to study the relationship between a dependent variable and one or more independent variables (William,2012). There are several studies done on the factors of scope creep and its negative impact on project success. On the same token, the findings of multiple studies have also confirmed that PMM and project success has a positive relationship.

Therefore, the relationship between scope creep, project success and PMM can be expressed in Econometric terms, as follows: -

$$\mathbf{Y= b_0 -b_1x_1 - b_2x2 -b_3x_3 + b_4x_1x_4 + b_5x_2x_4 + b_6x_3x_4 + \varepsilon}$$

Where: y is the measured value of project performance (dependent variable)

b_0 = Constant term (coefficient of intercept)

b_1 – b6 are coefficients of the independent variables (regression coefficient).

x_1 = The measured value of Technology Factor

x_2= The measured value of Human Factor

x_3 = The measured value of Organization Factor

X_4 =The measured value of Project Management Maturity

ε =Error term (random disturbance)

3.5 Ethical considerations

This study will observe all the established ethical principles throughout the whole process. Prior to data collection, informed consent of the participants will be secured, and participants will be provided with clear and sufficient information regarding the objective of the research and their right to withdraw at any moment without any consequence. Participation is totally voluntary and no personal identifiable information will be collected to ensure anonymity and confidentiality. In the data collection instrument, clear and neutral language was used for more accurate and less biased data. The data collected will be analyzed and used only for academic purposes. In addition to that, misrepresentation of facts and manipulation of data will be totally avoided to ensure ethical data analysis, and the findings will be presented truthfully and accurately

Chapter 4: Data presentations, Analysis and Interpretation

4.1 Introduction

This chapter presents information gathered from the data collected in a study of the "effect of scope creep on project success: evidence from banking sector in Ethiopia-the moderating role of project management maturity". Primary data was collected using a questionnaire. The statistical analysis was done using SPSS 26.0 version. The findings of the analysis were documented and presented in tables and figures. The relationship between the variables were tested using correlation, inferential statistics methods and multiple regression.

4.2 Response rate

For this study a total of 203 questionnaires were distributed to respondents. From which, 155 were properly filled and returned i.e a response rate of 76.36%. From this, the researcher believed that the completed questionnaires were sufficient to address and answer the specific objectives of the study and are used for further analysis.

4.3 Demographic Profile of Respondents

The demographic profile of the respondents gives us important background information by describing the specific characteristics of the respondents. This information is useful for the interpretation of the study findings. In this study, demographic information such as gender, education level, work experiences of respondents and respondent's role in the organization were analyzed and the results are given in the tables below.

Table 4.1 Respondents' gender distribution

	Frequency	Percent
Male	106	68.4
Female	49	31.6
Total	155	100

Source: Survey data, 2026

As can be seen from the above table, out of the total respondents, 106(68.4%) are male and 49(31.6%) are female. This shows that male respondents are higher than that of female respondents. It also shows the proportion of men and women employees within the workforce.

Table 4.2 Respondents' Education level

	Frequency	Percent
Bachelor's	75	48.4
Masters or Above	80	51.6
Total	155	100

Source: Survey data, 2026

From table 4.2, it is shown that 48.4 % of the respondents have a bachelor's degree whereas 51.6% have a master's degree or above. This shows that respondents are well qualified to understand and give reliable information regarding the research questions.

Table 4.3 Respondents' experience level

	Frequency	Percent
Up to 5 years	61	39.4
6 to 10 years	42	27.1
11 to 15 years	52	33.5
Total	155	100

Source: Survey data, 2026

Table 4.3 shows that 52 (33.5%) of respondents have 11-15 years of work experience while 42(27.1%) have 6-10 years of work experience. Respondents with up to 5 years of experience constitute 39.4% of the respondents. This shows that most of the respondents are well experienced in project-related activities in the banking sector. The experience they have increases their understanding of project activities, scope creep and the project management maturity level of their respective organizations. In addition to that, high level of work experience increases the reliability of the information provided by the respondents and the credibility of the findings related to scope creep, project management maturity and project success.

Table 4.4 Respondents role in the organizations

	Frequency	Percent
Project Manager	31	20.0
IT specialist	20	12.9
System developer	16	10.3
Project Management Office (PMO) Staff	58	37.4

Other	30	19.4
Total	155	100

Source: Survey data, 2026

As per table 4.4, the result illustrates that 20 % of the respondents are project managers, while 37.4 percent are project staff. In addition to that, out of the total respondents, 12.9% and 10.3 % of the respondents are IT specialist and system developers respectively. This shows that the respondents are well positioned in the organization to have firsthand information on project activities of their respective banks, and their feedback is appropriate for this study.

4.4 Descriptive statistics

In this section, the descriptive statistics of the study variables are presented. The study variables explained are Scope Creep, Project success and Project Management maturity level. And it is done using the mean and standard deviation. The range of values used for interpretation are a mean value between 1.00 until 1.80 is strongly disagree, 1.81 until 2.60 is disagree, 2.61 until 3.40 is neutral, 3.41 until 4.20 is agree and 4.21 until 5.00 is strongly agree (Sözen & Güven, 2019). The tables below present the descriptive statistics of the study variables.

Scope Creep Components

Technology Component

Table 4.5 Descriptive statistics for Technology component

	N	Mean	SD
Realistic and sufficient time is allotted for projects.	155	3.6194	.99525
Projects have a clearly defined scope.	155	3.8839	.93249
There is adequate functional knowledge of the technologies being developed.	155	3.7806	.80800
Market needs/condition frequently changes.	155	4.0452	.87045
Project requirement specification frequently changes.	155	3.5226	1.02143
Our projects are often complex.	155	3.5161	1.02155
Effective risk analysis is carried out.	155	3.4323	.86804
Our projects are typically large in scope and scale.	155	3.8774	.87040

Grand mean of TC	**155**	**3.7097**	**0.9267**

Source: Survey data, 2026

Table 4.5 shows that staff generally agree that a realistic and sufficient time is allocated for projects as indicated by the mean value of 3.6194(SD .99525). The mean value of 3.8839 (SD .93249) indicates that staff agree that projects have a clearly defined scope.

Generally, staff agree that there is adequate knowledge of the technologies being developed as it is indicated by the mean value of 3.7806 (SD.80800). The mean value of 4.0452 (SD =.87045) shows that market needs and conditions frequently change, showing high susceptibility for scope creep.

Staff generally agree that there is a frequent project specification change and that most of the projects are complex as shown by the average value of (Mean= 3.5226 and 3.5161) respectively, showing also a great possibility for unplanned project scope change. However, the result from the standard deviation shows that small number of staff don't think that project specification frequently changes and believes that projects are not that complex (SD=1.02143 and 1.02155).

The average 3.4323 (SD=.86804) shows that effective risk analysis is carried out for projects, showing preparedness to minimize the occurrence of scope creep. The average of 3.8774 (SD=.87040) indicates that employees generally agree that most of the projects are typically large in scope and scale, increasing their susceptibility to scope change.

In summary, the grand mean of technology factors, 3.7097 (SD=0.9267), indicates that there is a better practice related to having a clearly defined scope, sufficient time allocation and adequate technical knowledge within the projects. However, there is room for improvement when it comes to carrying out effective risk analysis for projects.

Human Component

Table 4.6 Descriptive statistics for Human component

	N	Mean	SD
There are frequent requests for changes in project requirements.	155	3.5742	.84476
There is sufficient knowledge of the project's technical process.	155	3.7484	.87233

Well experienced and skilled IT developers are contracted.	155	3.7161	.84327
Adequate personnel are allocated.	155	3.6000	.94388
Stakeholders are effectively engaged.	155	3.3935	1.04133
Grand mean of HC	**155**	**3.6774**	**0.8760**

Source: Survey data, 2026

The above table 4.6 shows that staff moderately agree that a change to project requirement is frequently requested as indicated by the mean value of 3.5742 (SD= .84476), this showing higher susceptibility for scope creep. The mean value of 3.7484 (SD=.87233) indicates that staff agree that there is sufficient knowledge of the technical process of projects. Generally, staff agree that highly qualified IT developers are contracted and adequate personnel are allocated for the projects as shown by the mean value of 3.7161(SD=.84327) and 3.6000(SD (.94388) respectively. Employees have a lower level of agreement about effective stakeholder engagement (Mean 3.3935, SD=1.04133). However, a relatively higher standard deviation result suggests that some staff think that there is lack of effective stakeholder engagement. This shows that there is room for improvement to have effective stakeholders' engagement. The improvement will help the organization reduce frequent requirement changes and avoid unplanned scope change.

Overall human factor statistics confirm that generally highly qualified, well experienced staff with sufficient technical knowledge were contacted and assigned to different projects (Grand mean =3.6774, SD= 0.8760). Yet respondents don't agree that there is sufficient and effective stakeholder engagement. Hence, organizations need to take some measures to have an effective stakeholder engagement.

Organizational Component

Table 4.7 Descriptive statistics for Organizational component

	N	Mean	SD
Adequate resources are allocated for projects.	155	3.4581	1.05214
The organization has the necessary capabilities for effective project performance.	155	3.8000	.84053
Project goals and objectives are clearly defined.	155	3.9742	.72028
There is Effective and efficient communication.	155	3.6968	.99593
Grand mean of OC	**155**	**3.7323**	**0.9115**

Source: Survey data, 2026

As shown in Table 4.7 above, employees moderately agree that adequate resources are allocated for projects (3.4581, SD= 1.05214). However, a slightly higher standard deviation result indicates that some staff don't feel that adequate budget is being allocated for the projects. The average value of 3.8000 (SD=.84053) shows that staff generally agree that the organization has the necessary capabilities for effective project performance (Mean 3.8000, SD= .84053).

Employees also agree that the organization has the necessary capabilities for effective project performance (Mean 3.9742, SD=.72028). Similarly, employees agree that there is effective and efficient communication within the projects (Mean 3.6968, SD=.99593).

In general, the grand mean of 3.7323 (SD=0.9115) indicates that respondents agree that organizations have the necessary capabilities to effectively carry out projects, and effective communication system within the organization. Which in turn improves decision making and achieve project success. However, some employees don't feel like there is adequate resource allocation for projects.

Project Success Dimensions

Cost Efficiency

Table 4.8 Descriptive statistics for cost efficiency

	N	Mean	SD
Projects are completed within budget.	155	3.3548	.95170
Resources are allocated effectively to minimize costs.	155	3.5355	.98216
Cost-saving measures are implemented appropriately.	155	3.5548	.98127
Grand mean of CE	**155**	**3.4817**	**.81839**

Source: Survey data, 2026

Table 4.8 shows that staff have a lower level of agreement about projects being completed within the originally specified budget (Mean, 3.3548, SD= .95170). The average value of 3.5355 (SD=.95170) indicates that employees moderately agree that there is effective resource allocation which minimizes cost. Similarly, staff agree that there are appropriately implemented cost-saving measures in place (Mean 3.5548, SD= .98127).

The overall cost efficiency statistics show that there is an effective cost saving measure in place within the organizations (Grand mean= 3.4817, SD= .81839). Despite these measures, projects are not being completed within budget. Such results highlight that though there are effective resource allocation and cost saving measures, there could still be cost overrun problem associated to other scope creep factors.

Schedule Adherence

Table 4.9 Descriptive statistics for schedule adherence

	N	Mean	SD
Projects are completed within the scheduled timeframe.	155	2.9161	1.12789
Delays are minimized through effective planning and coordination.	155	3.4839	.92831
Milestones and deadlines are met consistently.	155	3.1613	1.04125
Grand mean of SA	**155**	**3.1871**	**.88932**

Source: Survey data, 2026

As shown in table 4.9 above, employees have a very low level of agreement about projects being completed within the scheduled timeframe (Mean 2.9161, SD 1.12789) with a slightly higher standard deviation, showing some staff members don't believe that projects are completed within a scheduled timeframe. This shows that there is a problem with the completion of projects on time. The average value of 3.1613(SD= .92831) indicates that staff moderately agree that project delays are minimized through effective planning and coordination. Lower agreement was seen for statement that milestones and deadlines are met consistently (Mean 3.1613, SD= 1.04125). However, the higher standard deviation result suggests that small number of staff thinks that project milestones and deadlines are not being met consistently.

Generally, the grand mean of 3.1871(SD= .88932) confirms that there is a problem of finishing projects within schedule, which could lead to project cost overrun. Hence, organizations need to improve their schedule adherence by taking effective measures to minimize delays.

Quality Workmanship

Table 4.10 Descriptive statistics for quality workmanship

	N	Mean	SD
Work is completed to high standards of quality and craftsmanship.	155	3.6903	.81836
Attention to detail is evident in project execution.	155	3.7871	.84506
Quality control measures are implemented effectively.	155	3.6387	.85951
Grand mean of QW	**155**	**3.7054**	**.69833**

Source: Survey data, 2026

Table 4.10 shows that employees moderately agree that project work is completed with high standard of quality and craftmanship (Mean 3.6903, SD=.81836). The average value of 3.7871(SD=.84506) indicates that there is evident attention to detail in project execution. Respondents also agree that quality control measures are effectively implemented (Mean 3.6387, SD= .85951). In general, there is a good quality workmanship practice within the organizations as it is indicated by the grand mean of 3.7054 (SD=.69833).

Stakeholder satisfaction

Table 4.11 Descriptive statistics stakeholder satisfaction

	N	Mean	SD
Stakeholder needs and expectations are met or exceeded.	155	3.7032	.81523
Communication with Stakeholder is clear and responsive.	155	3.5677	.92596
Stakeholder express satisfaction with the overall project experience.	155	3.5032	.83257
Grand mean of SS	**155**	**3.5914**	**.66509**

Source: Survey data, 2026

The above table 4.11 shows that respondents agree that stakeholder needs and expectations are being met (Mean 3.7032, SD=.81523) and that there is clear and responsive communication with stakeholders (Mean 3.5677, SD, .92596). This highlights the presence of open and effective communication with stakeholders, which is key to stakeholder satisfaction. The mean value of 3.5032 (SD=.83257) shows that respondents moderately agree that stakeholders are satisfied with the overall project experience. The grand mean of 3.594 (SD= .66509) shows that

respondents agree that stakeholder's needs are met and that they are satisfied by their overall experience with the projects.

Meeting Intended Goals

Table 4.12 Descriptive statistics for meeting the Intended goals

	N	Mean	SD
Projects consistently achieve their stated objectives and contribute to the organization's overall mission.	155	3.8839	.75554
Projects effectively deliver tangible benefits to the intended beneficiaries and positively impact the communities.	155	4.0645	.69017
Projects consistently meet or exceed key performance indicators.	155	3.8000	.82494
Grand mean of MG	**155**	**3.9161**	**.64083**

Source: Survey data, 2026

The above table 4.12 shows that respondents generally agree that projects consistently achieve their objectives and contribute to the overall mission of the organization (Mean 3.8839, SD=.75554). the Respondents agree that projects produce tangible benefit to beneficiaries and positively impact the communities as it is indicated by the mean value of 4.0645 (SD=.69017). Moreover, the average value of 3.8000(SD= .82494) shows that employees agree that projects consistently meet or exceed key performance indicators. In general, respondents agree that projects often meet their objectives and positively contribute to the overall mission of the organization (Grand mean= 3.9161, SD=.64083).

Project Management Maturity Dimension

Common Language

Table 4.13 Descriptive statistics for common language

	N	Mean	SD
The need for project management is recognized at all levels of management, including senior management.	155	3.9742	.82924
The benefits of implementing project management are recognized at all levels of management, including senior management.	155	3.8968	.80723

Management recognizes the value of applying project management across different parts of the business.	155	3.8645	.80645
Executives recognize what needs to be done to achieve project management maturity.	155	3.8129	.81214
Grand mean of CL	**155**	**3.8871**	**.69096**

Source: Survey data, 2026

As shown in the above table 4.13, the need for project management (Mean 3.9742, SD=.82924) and the benefits of its implementation (Mean 3.8968, SD=.80723) is recognized at levels of management. Similarly, management recognizes the value of applying project management across different parts of the business in the organization (Mean 3.8645, SD= .80645). The average value of 3.8129 (SD=.81214) indicates that respondents generally agree that the executives recognize what needs to be done to achieve project management maturity.

In summary, staff agree that the need and benefits of project management is recognized by managers at all levels, and they are very clear of what needs to be done to achieve PMM as indicated by the grand mean of 3.8871 (SD= .69096).

Common Process

Table 4.14 Descriptive statistics for common process

	N	Mean	SD
Executives fully support project management.	155	3.8194	.80961
The executives have a good understanding of the principles of project management.	155	3.7742	.81023
Executives understand the role of project sponsorship.	155	3.8065	.81461
Executives have demonstrated willingness to change business practices to advance project management maturity.	155	3.7871	.88997
Grand mean of CP	**155**	**3.7968**	**.68482**

Source: Survey data, 2026

Table 4.14 shows that respondents generally agree that the executives fully support project management (Mean 3.8189, SD=.80961) and have a good understanding of the principles of project management (Mean 3.7742, SD=.81023). Similarly, employees agree that project sponsorship is well understood by the executives, as indicated by the mean value of

3.8065(SD=.81461). respondents also agree that the executives are willing to change business practices for the purpose of increasing project management maturity level (Mean 3.7871, SD=.88997).

The grand mean of 3.7968(SD=.68482) confirms that management within the organization clearly understands and fully supports the application of project management principles for the advancement of PMM.

Singular Methodology

Table 4.15 Descriptive statistics for singular methodology

	N	Mean	SD
Lower and middle-level line managers fully support the project management process.	155	3.9097	.82468
Line managers are committed both to project management and its deliverables.	155	3.9097	.81677
Lower- and middle-level line managers have received training and education in project management.	155	3.6065	.92930
Lower and middle-level line managers are willing to release their employees for project management training	155	3.7290	.92799
Grand mean of SM	**155**	**3.7887**	**.70834**

Source: Survey data, 2026

The above 4.15 shows that respondents agree that project management process is fully supported by lower and middle level management (Mean3.909, SD=.82468) and that line managers are committed to both the project management and its deliverables (Mean 3.9097, SD= .81677). Respondents also moderately agree that lower and middle level managers have received project management training as indicated by the mean value of 3.6065 (SD=.92930). Moreover, the average value of 3.7290 (SD=.92799) indicates that employees generally agree that lower and middle level managements are willing to release their employees to receive project management training.

In general, the grand mean of 3.7887 (SD=.70834) confirms that there is support to the project management process and achievement of its deliverables among lower and middle level managers of the organizations.

Bench Marking

Table 4.16 Descriptive statistics for bench marking

	N	Mean	SD
A well-defined project management methodology, based on life cycle phases, is in place.	155	3.8000	.93559
There is a commitment to quality up-front planning.	155	3.7935	.82727
Effective measures are being taken to minimize scope creep on projects.	155	3.6581	.86369
Project management software tools are used to track projects.	155	3.3226	1.11037
Grand mean of BM	**155**	**3.6435**	**.73852**

Source: Survey data, 2026

Table 4.16 shows that employees generally agree that there is a well-defined project management methodology as it is indicated by the mean value of 3.800 (SD.93559). Respondents also agree that there is a commitment to have a quality up-from project planning (Mean 3.7935, SD=.82727). The average value of 3.6581(SD=.86369) shows that employees moderately agree that effective measures are being taken to minimize scope creep. A low level of agreement was seen about the statement that project management software tools are used to track projects (Mean 3.3226, SD=1.11037). However, the higher standard deviation shows that some employees don't think that projects are tracked using project management software tools.

The overall bench marking statistics confirm that there are a well-defined project management methodology and measures that could minimize scope creep are put in place (Grand mean= 3.6435, SD= .73852). However, there is room for improvement when it comes to using project management software tools for the purpose of tracking projects.

Continuous Improvement

Table 4.17 Descriptive statistics for continuous improvement

	N	Mean	SD
There is a cost and schedule management system.	154	3.2727	1.07419
An integrated cost and schedule control is in place for project management and status report.	155	3.4194	1.04366

Project management curriculum is developed to enhance staff's project management skills.	155	3.4000	1.07872
Project management is viewed as a profession in the organization.	155	3.9871	.88264
Grand mean of CI	**155**	**3.5183**	**.82350**

Source: Survey data, 2026

Table 4.17 above shows that there is a low level of agreement about the statement that there is cost and time management system as shown by the mean value of 3.2727 (SD=1.07419). The higher standard deviation shows that a small number of employees don't think that there is a cost and time management system in place. Similarly, respondents moderately agree that there is an integrated time and cost management system for project management and status reports (Mean 3.4194, SD=1.04366). However, the higher standard deviation shows that some employees don't agree that there is an integrated cost and time management system for project management. This shows that there is room for improvement to have an effective and integrated time and cost management system for projects to minimize the occurrence of scope creep and increase project success. In addition to that, staff have shown a low level of agreement about project management curriculum being developed to enhance employees' project management skills as indicated by the mean value of 3.4000 (SD=1.07872). The higher standard deviation also shows that a small number of employees don't agree that project management is curriculum is developed. The mean value of 3.9871 (SD=.88264) shows, respondents also agree that project management is seen as a profession within the organization.

The grand mean of 3.5183(SD= .82350) indicates that there is an integrated schedule and cost control system for project management and status reporting. However, there is room for improvement when it comes to providing project management training for staff to continually enhance their skill.

4.5 Correlation Analysis

In this study, a correlation analysis was conducted to determine the existence of relationship between the Scope Creep dimensions i.e. Technology Factors, Human Factors, Organizational Factors) and Project Success. The relationship between variables is described with a figure between -1.00 to +1.00. Pearson's r can vary from +1 to -1. An r of value +1 specifies a perfect

positive relationship, 0 shows no linear relationship between variables whereas -1 denotes a negative correlation (Bakhtawar et.al., 2020).

As evident from the existing literature reviews and findings of several scientific research scope creep factors negatively affect project success. The aim of this study is thus, to study this negative effect of scope creep factors on project success of commercial banks in Ethiopia. However, the questionnaire used for survey was positively framed for easier and better understanding of the questions and avoid response bias. Hence, for the purpose of hypothesis testing, the responses on the positively worded items of scope creep dimensions were reverse coded to maintain consistency. so that high value represents the same kind of response on every item. Recoding variables transforms the original variable into a new variable without changing it (Bakhtawar et.al., 2020). This will allow the study to accurately determine the effects of scope creep factors on project success. The scale for each of these items was changed from 1= strongly disagree to 5 strongly agree, 2= disagree to 4 agree, 3 neutral to 3 neutral, 4 agree to 2 disagree and 5 strongly agree to 1 strongly disagree.

Table 4.18 Correlation analysis result

Correlations					
		TC	HC	OC	PS
TC	Pearson Correlation	--			
	N	155			
HC	Pearson Correlation	.449**	--		
	Sig.(2 tailed)	.000			
	N	155	155		
OC	Pearson Correlation	.391**	.609**	---	
	Sig.(2 tailed)	.000	.000		
	N	155	155	155	
PS	Pearson Correlation	**-.319****	**-.545****	**-.618****	--
	Sig.(2 tailed)	**.000**	**.000**	**.000**	

	N	155	155	155	155
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: Survey data, 2026

As shown in table 4.1, the correlation between (p=.000 and r= -319) technology factors and project success shows a statistically significant and negative relationship. There is a statistically significant and negative correlation between human factors and project success (p=.000 and r= - 545). The relationship between organizational factors and project success is significant and negative (p=.000 and r= -.618).

Generally, all scope creep factors have a significant and negative relationship with project success. Their relationship is significant because of the p-value(p=0.000). Given these results, the direction of the relationships between scope creep dimension and project success is tested in the next section of this paper using regression analysis.

4.6 Regression Analysis

To test the strength and direction of the relationship identified by the correlation analysis, a multiple regression analysis was employed. By using a multiple regression analysis model, this study examines the cause-and-effect relationship between scope creep factors and project success. This is done to determine the existence of a significant effect of scope creep factors on project success and the direction of effect between them. To test the moderation effect of PMM, the Hayes Process Macro in SPSS version 4.2 was used. The effect of the moderating variable, i.e. PMM in strengthening the cause- and-effect relationship between scope creep factors and project success was tested.

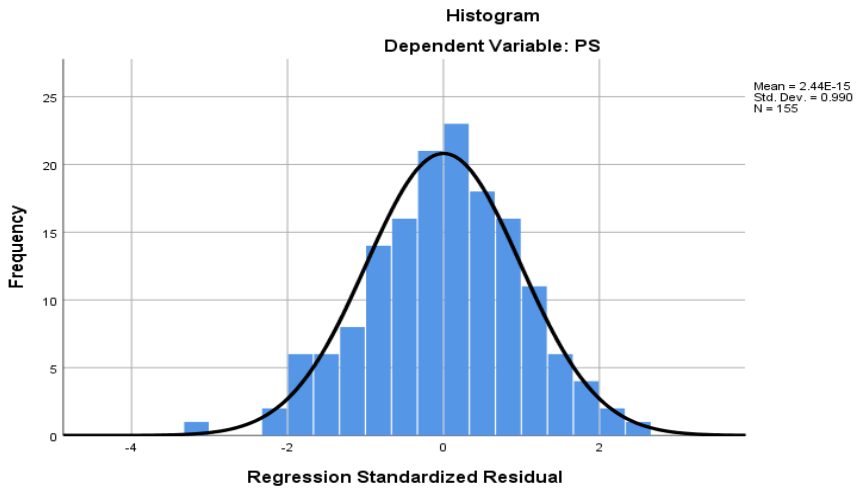
4.6.1 Assumption tests

Normality tests

For a statistical analysis to be valid, the assumption of linearity and normality must be confirmed. In this study a histogram and the Shapiro-wilk test were utilized to determine the normal distribution of the data. The bell-shaped histogram graph indicates that the residuals (errors or disturbances) are normally distributed. A normally distributed residual of predicted independent variable is a requirement for goodness of fit for regression analysis. As depicted

in Figure 4.1, the dependent variable i.e. project success exhibits a normal distribution for each of the scope creep factors, which are the independent variables.

Figure 4.1 Histogram



Source: Survey data, 2026

Table 4.19 Normality Test

Test of Normality						
	Kolomogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.083	155	.011	.986	155	.127
*. This is a lower bound of the true significance						
. Lilliefors Significance Correlation						

Source: Survey data, 2026

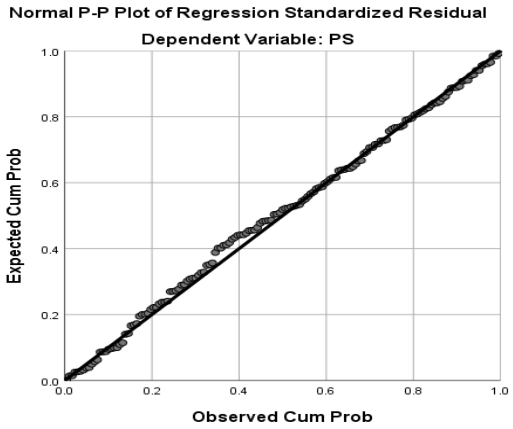
As shown in table 4.19, the P-value of Shapiro-Wilk is 0.127 and is above 0.05. This result indicates that the sample residuals are normally distributed and the normality assumption for a regression analysis is satisfied.

Linearity test

To determine how consistently the dependent variable (Project success) varies with changes in scope creep factors such as technology, human and organizational factors and the moderation effect of PMM, a linearity test is conducted. In other words, a linearity test is done to check whether project success and scope creep follow a linear relationship. If the scatter plot has a

linear trend in the predictors against response plot, then the assumption of linearity is made. If the residuals vs. fitted values plot appear randomly around zero then, the linear regression model can be deemed fit. As depicted in Figure 4.2, the points closely follow the diagonal line and linearity is maintained. When linearity is maintained, the relationship between the residuals and the predicted values of project success is expected to be linear.

Figure 4.2 Normal P-P Plot



Source: Survey data, 2026

Multi Collinearity test

Table 4.20 Multi Collinearity test

	Tolerance	VIF
Technology component	.776	1.288
Human component	.577	1.734
Organizational component	.612	1.633

Source: Survey data, 2026

A collinearity diagnosis test was conducted to determine the level of multicollinearity among independent variables. The above table 4.20 shows that the tolerance value of all variables ranges between 0.577 and 0.776, which is above 0.2. Similarly, the value of VIF (variance inflation factors) for all the variables are less than 10. These results show that there is no multicollinearity problem present among these independent variables.

Checking the assumption Model Summary for Regression Analysis

Table 4.21 Model Summary

Model Summary				
Model	R	R. Square	Adjusted R Square	Std.Error
1	.654[a]	.428	.416	.45332
. Predictors: (Constant), TC,HC, OC				
. Dependent variable: PS				

Source: Survey data, 2026

As can be seen from the model summary table 4.21, R value of .654 indicates that there is a positive relationship between the independent variables and project success. The R Square value of 0.428 shows that approximately 42.8% of the variance in project success can be explained by these independent variables. This shows that scope creep factors and PMM have a considerable influence on the level of project success. The adjusted R Square value of .416 shows that after adjusting for several various predictors, 41.6% of variance in project success is explained by the independent variables.

In general, the results obtained from the regression analysis imply that scope creep factors and PMM highly influence project success. This shows why taking measures that would effectively minimize scope creep occurrence is crucial to enhance project success. Therefore, putting in place effective measures to minimize scope creep occurrence in projects and improve their PMM level is very essential to enhance project success.

ANOVA Summary Interpretation

Table 4.22 ANOVA table

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	23.172	3	7.724	37.587	.000[b]
	Residual	31.030	151	.205		
. Dependent variable: PS . Predictors : (Constant), TC,HC, OC						

Source: Survey data, 2026

The results of Anova table 4.22 above show that the model used in this study which uses technology factors, human factors, organization factors and PMM as predictor variables is statistically significant to explain project success. The F value of 37.587 implies that the model accounts for a substantial amount of variance in project success via-a-vis variance in error. This means that scope creep factors and PMM are strong predictors of project success.

In addition to that, the model is found to be statistically significant because the p value is .000 which is less than 0.05, showing at least one of the independent variables is significantly related to project success. The robustness of the prediction model is evident due to high F-statistics, as scope creep factors and PMM have a considerable impact on project success.

4.6.2 Result of Multiple Regression

Parameter estimation and interpretation

After carrying out an assumption test, a parameter estimation and interpretation was done to determine the direct effect of scope creep factors (Technology, Human and Organization component) on project success. The results and their interpretations are presented in the tables below.

The Effect of Technology Component on Project Success

Table 4.23 Regression Result showing the effect of Technology Component on Project Success

	Unstandardized Coefficients	Standardized Coefficients	t	Sig	LLCI	ULCI
(Constant)	5.271 (.277)		19.011	.000	4.723	5.819
Technology Component	-.038 (.101)	-.026	-.377	.707	-.237	.161

Source: Survey data, 2026

As shown in the table above Technology Factors have a statistically non-significant (p=.707) and negative effect (β =-.026) on project success (p> 0.05 and there is zero between the lower

and upper confidence intervals). This result shows that technology factor did not significantly affect project success. Therefore, *Hypothesis 1 (H1) [The Effect of Technology Factors on Project Success is statistically significant and Negative.] was not accepted.*

Previous studies such as Riaz and Jawad (2022) found that technological factors of scope creep have negative impact on the success of the project. Similarly, Bakhtawar et.al., (2020), found that technology factors have a negative impact on project success. Though previous studies have established a statistically significant and negative effect of Technology factor on project success, the empirical result above indicates a statistically non-significant and negative effect of technology factors on project success.

In general, despite the expectation in the hypothesis, technology factor did not significantly affect project success.

The Effect of Human Component on Project Success

Table 4.24 Regression Result showing the effect of Human Component on Project Success

	Unstandardized Coefficients	Standardized Coefficients	t	Sig	LLCI	ULCI
(Constant)	5.271 (.277)		19.011	.000	4.723	5.819
Human Component	-.270 (.084)	-.259	-3.196	.002	-.436	-.103

Source: Survey data, 2026

Human factors ($p = .002$) have a statistically significant ($p < 0.05$ and there is no zero between the lower and upper confidence intervals) and negative effect ($\beta = -.259$) on project success. This means that the higher the human factors that exist within projects, the lower the project success will be. The relatively higher standardized coefficients show that, among the factors of scope creep, human factors have a higher impact on project success next to organizational factors. This indicates that those projects that don't have experienced and adequate skilled manpower, no effective stakeholder's engagement and as well as experience frequent project requirement change will have a lower project success rate. Therefore, the Hypothesis *2 (H2)*

[The Effect of Human Factors on Project Success is statistically significant and Negative.] was accepted.

A statistically significant and negative effect of human factors on project success as indicated by the above empirical finding confirms previous studies findings such as Riaz and Jawad (2022) who found that human factors of scope creep account for 31.3% of projects success variance.

Hence, the empirical finding signifies that organization that wishes to improve the success of their projects needs to, among other things, effectively engage stakeholders and adequately allocate well experienced and knowledgeable personnel to projects.

The Effect of Organizational Component on Project Success

Table 4.25 Regression Result showing the effect of Organizational Component on Project Success

	Unstandardized Coefficients	Standardized Coefficients	t	Sig	LLCI	ULCI
(Constant)	5.271 (.277)		19.011	.000	4.723	5.819
Organizational Component	-.385 (.067)	-.450	-5.717	.000	-.518	-.252

Source: Survey data, 2026

Organization factors ($p = .000$) have a statistically significant ($p < 0.05$ and there is no zero between the lower and upper confidence intervals) and negative effect ($\beta = -.450$) on project success. This means that the higher the organizational factors that exist within projects, the lower the project success will be. The relatively higher standardized coefficients show that, among the factors of scope creep, organizational factors have considerably the highest impact on project success. This implies that organizations that do not allocate adequate resources for projects, don't have a clearly defined goals and objectives, and the necessary capabilities for effective project management will have significantly lower project success rate. Therefore,

Hypothesis 3 (H3) [The Effect of Organization Factor on Project Success is statistically significant and Negative.] was accepted.

The analysis shows that organizational factors have a negative and statistically significant effect on project success, which also makes it the strongest predictors of project success, among the scope creep factors that are examined. This empirical finding also confirms previous research findings such as Riaz and Jawad (2022) that found organizational factors to be the significant factor that affects project success followed by human and technological factors.

4.6.3 Moderation Effect of Project management Maturity

Moderating Role of Project Management Maturity in Technology Components - Project Success

As can be seen from table 4.26, the overall regression model is fit. Meaning, the effects of the predictor, moderator, as well as the model in general(R^2) are significant ($P < .001$). The R^2 Squared value of .5390 indicates that 53.90% of the project success variation is explained by the technology factors, PMM and the interaction term.

As shown in the moderation table below, technology factors have a statistically significant ($p = .0117$) and negative effect ($\beta = –0.2114$) on project success and the lower and upper-level confidence interval doesn't include zero between them. Similarly, the moderate variable, PMM has a statistically significant ($p < .001$) and positive effect ($\beta = 0.6933$) on project success, and the lower and upper-level confidence interval doesn't include zero between them. This indicates that the higher the PMM level, the higher the project success will be. It is important to note here that the result confirms previous studies findings that higher PMM has a significant positive impact on project success (Helder et.al.,2023).

However, the result of the interaction term is not statistically significant ($P> .05$) and there is a zero between the lower and upper-level confidence intervals. This shows that the interaction term (coefficients =.0456) does not significantly moderate the effect of technology factors on Project success (P=.7442). In other words, as significant and important PMM is on its own for the success of a project, it does not meaningfully change the effect technology factors have on project success. Therefore, *Hypothesis 4 (H4) [Project management maturity moderates the relationship between technology factors of Scope Creep and Project Success, such that the*

negative effect of technology factors on project success is weaker when project management maturity is high.] was not accepted.

Previous studies such as Vittal and Rad, (2018) have indicated that having a formal and standardized project management process will force organizations to use proper project planning tools and techniques and facilitate the completion of a project within the specified budget and scope. In other words, having a higher PMM level will enable organizations to have a clearly defined scope, carry out effective risk analysis, and better handle large and complex projects. Which in turn minimizes the effect of technology factors on project success. However, despite the expectation in the hypothesis, PMM did not significantly moderate the relationship between technology factors and project success. This result challenges the assumption that mature organizations can minimize the occurrence and effect of scope creep on project success.

Table 4.26 Moderation Analysis of Project Management Maturity on the relationship between Technology Component and Project Success

Variable	Coefficients(β)	t-value	p-value	LLCI	ULCI
constant	3.5790 (.0337)	106.2021	.0000	3.5122	3.6445
TC	-.2114 (.0829)	-2.5510	.0117	-.3752	-.0477
PMM	.6933 (.0588)	11.7656	.0000	.5772	.8094
TC x PMM(Int_1)	.0456 (.1396)	.3262	.7442	-.2301	.3214
R^2 = .5390 , R^2 change = .0003 , F= .1069					

Source: Survey data, 2026

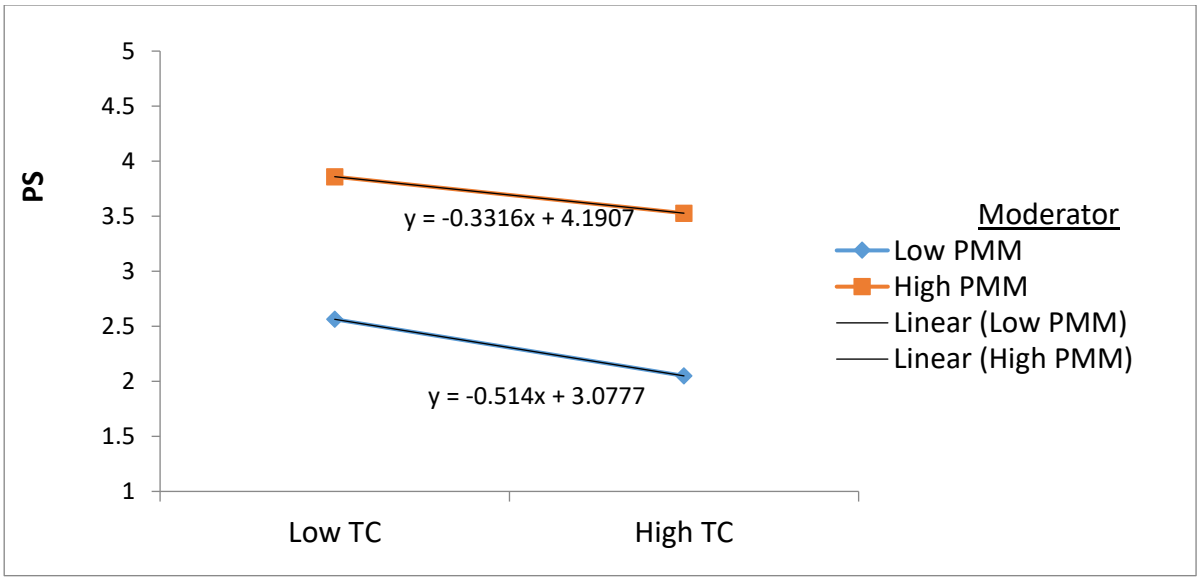


Figure 4.3 the moderation effect of PMM on technology Components to project success relationship

Moderating Role of Project Management Maturity in Human Component - Project Success

As can be seen from table 4.27, the overall regression model is fit. Meaning, the effects of the predictor, moderator, as well as the model in general(R^2) are significant ($P < .001$). The R-Squared value of .5824 indicates that 58.24% of the project success variation is explained by the human factors, PMM and the interaction term.

The result of the interaction term is not statistically significant ($P > .05$) and there is a zero between the lower and upper-level confidence intervals. This shows that the interaction term (coefficients =-.1474) does not significantly moderate the effect of human factors on Project success (P=.1118). In other words, as significant and important PMM is on its own for the success of a project, it does not meaningfully change the effect human factors have on project success. Therefore, *Hypothesis 5 (H5) [Project management maturity moderates the relationship between Human factors of Scope Creep and Project Success, such that the negative effect of Human factors on project success is weaker when project management maturity is high.] was not accepted.*

Despite the expectation in the hypothesis, PMM did not significantly moderate the relationship between human factors and project success. This result challenges the assumption that mature organizations can minimize the occurrence and effect of scope creep on project success.

Table 4.27 Moderation Analysis of Project Management Maturity on the relationship between Human Component and Project Success

Variable	Coefficients()	t-value	p-value	LLCI	ULCI
constant	3.5539 (.0341)	104.1716	.0000	3.4865	3.6213
HC	-.2808 (.0617)	-4.5518	.0000	-.4026	-.1589
PMM	.6233 (.0613)	10.1630	.0000	.5022	.7445
HC x PMM(Int_1)	-.1474 (.0922)	-1.5997	.1118	- .3295	.0347
R^2 = .5824 , R^2 change =.0071 , F= 2.5590					

Source: Survey data, 2026

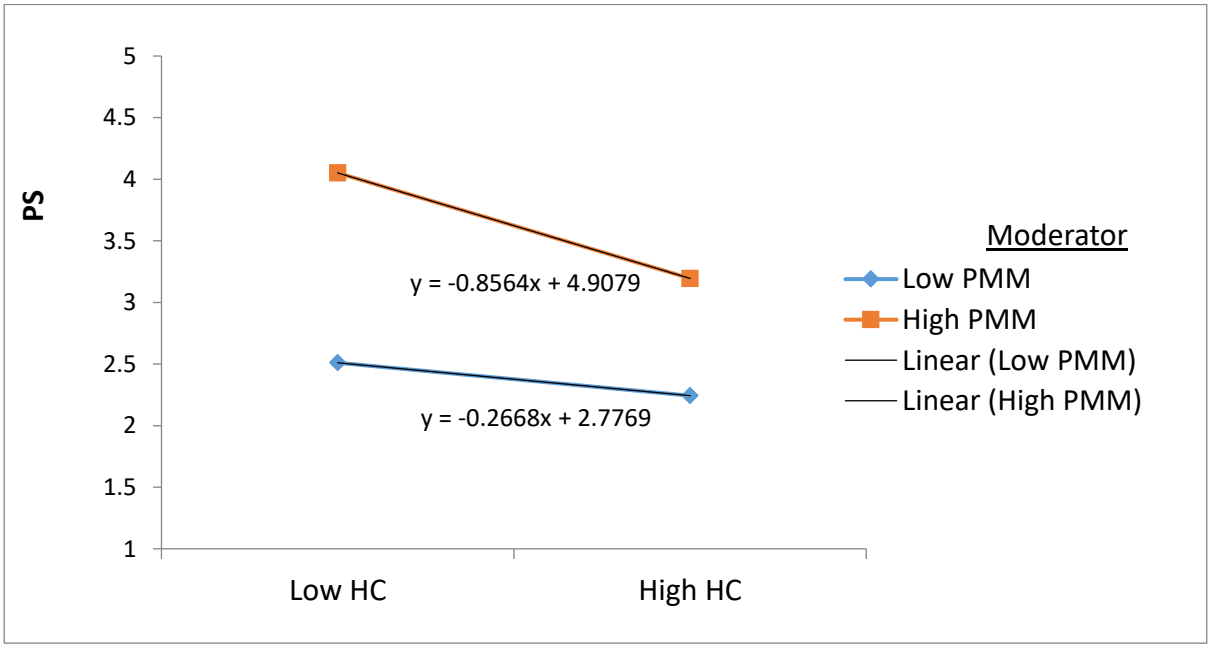


Figure 4.4 the moderation effect of PMM on human Component to project success relationship

Moderating Role of Project Management Maturity in Organizational Component - Project Success

As can be seen from table 4.28, the overall regression model is fit. Meaning, the effects of the predictor, moderator, as well as the model in general(R^2) are significant ($P < .001$). The R^2 Squared value of .5679 indicates that 56.79% of the project success variation is explained by the organization factors, PMM and the interaction term.

The result of the interaction term is not statistically significant ($P > .05$) and there is a zero between the lower and upper-level confidence intervals. This shows that the interaction term (coefficients =-.0742) does not significantly moderate the effect of organization factors on Project success (P=.2626). In other words, as significant and important PMM is on its own for the success of a project, it does not meaningfully change the effect organization factors have on project success. *Hypothesis 6 (H6) [Project management maturity moderates the relationship between organization factors of Scope Creep and Project Success, such that the negative effect of organization factors on project success is weaker when project management maturity is high.] was not accepted.*

According to Andersen and Arne (2007), higher PMM means that the organization is perfectly positioned to execute its project. However, despite the expectation in the hypothesis, PMM did not significantly moderate the relationship between organization factors and project success. This result challenges the assumption that mature organizations can have a better organization capability to effectively execute projects, thereby minimizing the effect of organization factor of scope creep on project success.

Table 4.28 Moderation Analysis of Project Management Maturity on the relationship between Organizational Componenet and Project Success

Variable	Coefficients(B)	t-value	p-value	LLCI	ULCI
constant	3.5577 (.0357)	99.6526	.0000	3.4872	3.6283
OC	-.2409 (.0588)	-4.0978	.0001	-.3570	-.1247
PMM	.5792 (.0742)	8.0049	.0000	.4363	.7222
OC x PMM(Int_1)	-.0742 (.0660)	-1.1244	.2626	-.2046	.0562

R^2 = .5679, R^2 change = .0036 , F= 1.2642

Source: Survey data, 2026

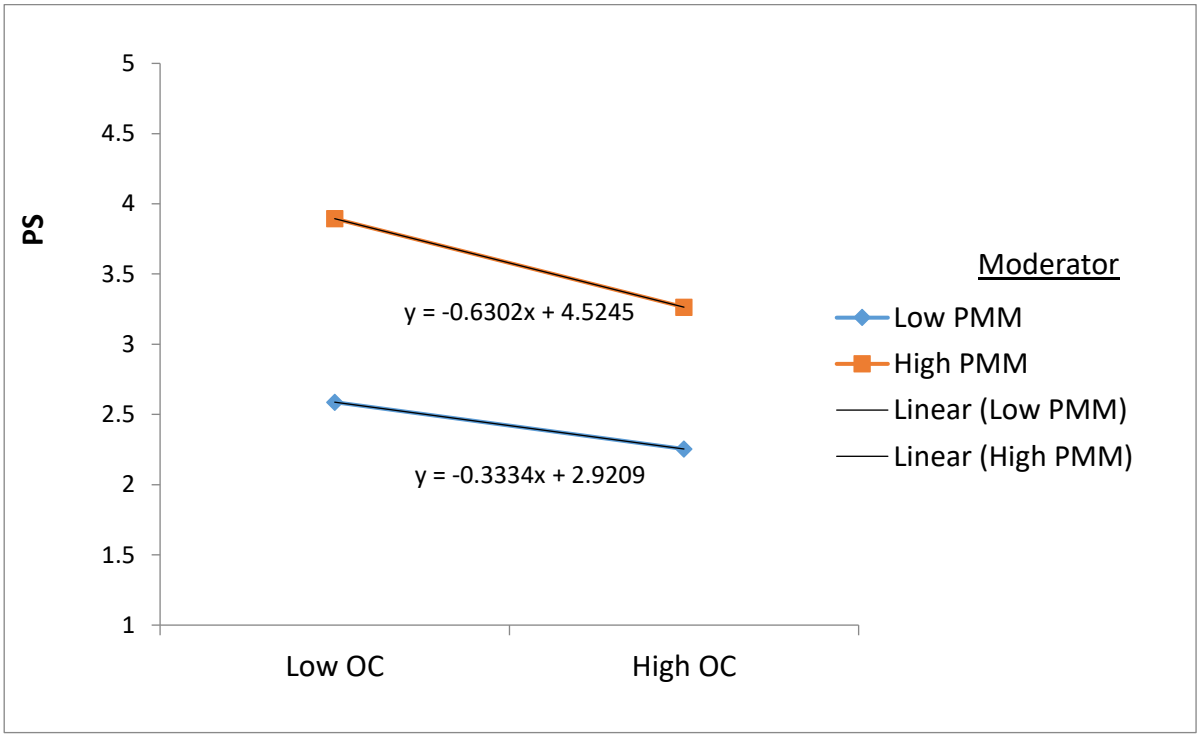


Figure 4.5 the moderation effect of PMM on organization factors to project success relationship

Regression Model

$$\mathbf{Y= b_0 -b_1x_1 - b_2x2 -b_3x_3 + b_4x_1x_4 + b_5x_2x_4 + b_6x_3x_4 + \varepsilon}$$

Where:

Y= project Success X_1= Technology Factor X_2= Human Factor

X_3= Organization Factor X_4= Project Management Maturity

B_0= constant of the model b_1 ,b_2 ,b_3, b_4, b_5 ,b_6 are coefficients of independent variables

ε = Error term

$$\mathbf{Y= 5.271 - 0.259x2 -0.450x_3 + \varepsilon}$$

4.6.4 Summary of Hypothesis

Table 4. 29 Summary of Hypothesis

Hypothesis	Result	Decision
Hypothesis 1 (H1): The Effect of Technology Component on Project Success is statistically significant and Negative.	Not Significant (p = .707)	Hypothesis not accepted
Hypothesis 2 (H2): The Effect of Human Component on Project Success is statistically significant and Negative.	Significant (p = .002), Negative (β = -.259)	Hypothesis accepted
Hypothesis 3 (H3): The Effect of Organizational Component on Project Success is statistically significant and Negative.	Significant (p = .000), Negative (β = -.450)	Hypothesis accepted
Hypothesis 4 ([H4): Project management maturity moderates the relationship between technology Component of Scope Creep and Project Success, such that the negative effect of technology Component on project success is weaker when project management maturity is high.	Not significant (P= .7442)	Hypothesis not accepted
Hypothesis 5 (H5): Project management maturity moderates the relationship between Human technology Component of Scope Creep and Project Success, such that the negative effect of Human Component on project success is weaker when project management maturity is high.	Not significant (P=.1118)	Hypothesis not accepted
Hypothesis 6 (H6): Project management maturity moderates the relationship between organizational technology Component of Scope Creep and Project Success, such that the negative effect of organizational Component on project success is weaker when project management maturity is high.	Not Significant (P=.2626)	Hypothesis not accepted

Chapter 5: Summary, Conclusion, and Recommendation

5.1 Introduction

In this chapter, the findings, conclusions, practical as well as theoretical implications and recommendations of this study will be presented.

5.2 Summary of Findings

This study examines the effect of scope creep on project success as well as the moderating role of project management maturity. The analysis was carried out by computing the three factors of scope creep i.e. technology, human and organization factors, PMM and Project success. The survey data collected was analyzed using the statistical package for social sciences (SPSS) version 26.0. Tables and figures were used to present and interpret the results. The summary of these findings are:-

- Most respondents agree that there is a clearly defined scope, necessary organizational capabilities, and effective risk analysis are carried out thereby minimizing the occurrence of scope creep. However, there is lack of adequate resources and effective stakeholder engagement.
- Most participants believe that projects are successful, meet their intended goals and that stakeholders are satisfied. However, respondents agree that there is a problem of finishing projects within the specified time.
- Employees feel that the overall PMM level is good. However, they believe there is room for improvement when it comes to using project management software tools for project tracking. In addition, they believe there needs to be a cost and time management system in place for better project management.
- The effect of technology Component on project success was found to be non-significant ($p = .707$)
- Human ($p = .002$, $\beta = -.259$) and organizational ($p = .000$, $\beta = -.450$) Component of scope creep have a statistically significant and negative effect on project success.

- Though it was hypothesized that project management maturity significantly moderates the relationship between scope creep Components (Technology, human and organization) and project success, the moderation analysis shows statistically non-significant interaction effects.

5.3 Conclusion

- Organizations that clearly define their project scope, have adequate knowledge of the technologies being developed, continuously enhance the necessary organizational capabilities, and effectively engage stakeholders and carry out effective risk analysis minimizes scope creep occurrence and its effect on the success of their project.
- The statistically significant effect of human and organizational Component of scope creep factors on project success confirms that organizations that have a better understanding of causes of scope creep and put in place measures to minimize its effect, will have a better project success rate.
- Though PMM individually has a statistically significant and positive impact on project success, it does not have a significant impact on the relationship of scope creep componets and project success.

Theoretical Implication

- The empirical findings of this paper show a statistically significant negative relationship between human and organizational scope creep Components and project success. This finding aligns with previous studies that found a negative effect of human and organizational factors on project success. This finding adds to the existing body of knowledge on project management by showing the significant negative effect of scope creep factors can have on project success, Also, how critical it is to put in place measures that will minimize their effect so that project success can be enhanced.
- In line with previous studies findings on the effect of project management maturity on project success, this study's findings confirm that PMM on its own can have a statistically significant and positive effect on project success. However, the moderating result shows that PMM does not have a significant effect on the relationship between scope creep factors and project success.

Practical implications

- The study Shows that human and organizational Component of scope creep having a significant and negative effect on project success. Hence, commercial banks that want to enhance the success of their project need to look in to causes that lead to scope creep and take appropriate measures.
- Though the moderation effect of PMM between the relationship of scope creep Components and project success is found to be non-significant, PMM level individually has a substantial positive effect on project success. Hence, organizations that enhance their PMM level will establish a standardized process for effective project management and enhance their project success.

5.4 Recommendations

- Commercial Banks need to allocate adequate resources, effectively engage stakeholders, and improve the use of project management tools for a better project management process.
- Despite the overall project success and stakeholder satisfaction, completion of projects on time is an issue. Therefore, commercial banks should improve their time control and monitoring systems. In addition to that, the use of project management software tool need to be enhanced.
- Organizations need to focus on strengthening change control processes and provide continuous training to project staff to enhance their scope control skill
- Organizations should enhance their scope creep control mechanisms to address the major scope creep drivers and have better project success.

5.5 Suggestions for Future Research

- Though it was hypothesized that PMM has a positive moderating effect on the relationship between technology, human and organizational components of scope creep and project success, the moderation result shows no significant moderation effect. Hence, PMM as a moderator variable between the relationship of scope creep and project success needs to be studied further.

- In addition to that, though previous studies have established that technology components of scope creep have a statistically significant and negative effect on project success, the empirical findings of this study show a non-significant effect. Hence, the effect of technology components of scope creep on project success needs to be studied further.
- The findings of this study only based on evidence from the banking sectors in Ethiopia and may not apply to other public projects or different sectors projects. Further studies need to adopt this model and determine the effect of scope creep on project success across different sectors and projects.

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Appendix I

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMENT

Dear Participants

This questionnaire is part of a research thesis carried out for the partial fulfillment of requirements for MA in Project Management at Addis Ababa University, School of Commerce, Department of Project Management. The main purpose of this questionnaire is to collect data which will be used for a research work titled "**The Effect of Scope Creep on Project Success: Evidence from the Banking Sector in Ethiopia-The Moderating Role of Project Management Maturity"**. Your participation in this study will be valuable and greatly appreciated.

It should be noted that participation in this project is voluntary, and all responses will be treated with strict confidence. Neither the identity of the respondents nor the organization will be made public. I value the time that you will spend filing this survey.

If you have any questions or concerns, please feel free to contact me Via the following Email addresses; sabaalebachew@gmail.com Or yemuluneshlij@gmail.com

Thank you in advance for your cooperation.

Yours sincerely

Saba Alebachew

Part I: Demographic Information

Please put "√" on the appropriate option

No.	Personal Details	Response	No.	Personal Details	Response
1.	**Sex**		**4**	**Position**	
	Male			Project Manager	
	Female			IT specialist	
2.	**Educational Level**			System developer	
	Diploma			Project Management Office (PMO) Staff	
	Bachelor's			Other (Specify):	
	Masters or Above				
3	**Years of Experience**				
	Up to 5 years				
	6 to 10 years				
	11 to 15 years				

Part II: Measurement for Scope Creep

The following items relate to the causes of Scope Creep in your organization. Please read through the lists on the table below and circle one choice for each of the following statements.

NB: 1=Strongly Disagree 2=Disagree3=Neutral4=Agree 5=Strongly Agree

No.		1	2	3	4	5
. TECHNOLOGY COMPONENET						
TC1	Realistic and sufficient time is allotted					

	for projects.					
TC2	Projects have a clearly defined scope.					
TC3	There is adequate functional knowledge of the technologies being developed.					
TC4	Market needs/condition frequently changes.					
TC5	Project requirement specification frequently changes.					
TC6	Our projects are often complex.					
TC7	Effective risk analysis is carried out.					
TC8	Our projects are typically large in scope and scale.					
B. HUMAN COMPONENT						
HC1	There are frequent requests for changes in project requirements.					
HC2	There is sufficient knowledge of the project's technical process.					
HC3	Well experienced and skilled IT developers are contracted.					
HC4	Adequate personnel are allocated.					
HC5	Stakeholders are effectively engaged.					
C. ORGANIZATIONAL COMPONENT						
OC 1	Adequate resources are allocated for projects.					
OC 2	The organization has the necessary capabilities for effective project performance.					
OC 3	Project goals and objectives are clearly defined.					

OC 4	There is Effective and efficient communication.					

Source: by (Komal et al., 2020)

Part III: Measurement for Project Success

The following items relate to the Project Success in your organization. Please read through the lists on the table below and circle one choice for each of the following statements.

NB: 1=Strongly Disagree 2=Disagree3=Neutral4=Agree 5=Strongly Agree

No.		**1**	**2**	**3**	**4**	**5**
COST EFFICIENCY						
CE1	Projects are completed within budget.					
CE2	Resources are allocated effectively to minimize costs.					
CE3	Cost-saving measures are implemented appropriately.					
SCHEDULE ADHERANCE						
SA1	Projects are completed within the scheduled timeframe.					
SA2	Delays are minimized through effective planning and coordination.					
SA3	Milestones and deadlines are met consistently.					

QUALITY WORKMANSHIP						
QW1	Work is completed to high standards of quality and craftsmanship.					
QW2	Attention to detail is evident in project execution.					
QW3	Quality control measures are implemented effectively.					
STAKEHOLDER SATISFACTION						
SS1	Stakeholder needs and expectations are met or exceeded.					
SS2	Communication with Stakeholder is clear and responsive.					
SS3	Stakeholder express satisfaction with the overall project experience.					
MEETING THE INTENDED GOALS						
MG1	Projects consistently achieve their stated objectives and contribute to the organization's overall mission.					
MG2	Projects effectively deliver tangible benefits to the intended beneficiaries and positively impact the communities.					
MG3	Projects consistently meet or exceed key performance					

	indicators.					

Source: by (Blen,2024)

Part IV: Measurement for Project Management Maturity

The following items relate to the project Management Maturity in your organization. Please read through the lists on the table below and circle one choice for each of the following statements.

NB: 1=Strongly Disagree 2=Disagree3=Neutral4=Agree 5=Strongly Agree

No.		**1**	**2**	**3**	**4**	**5**
COMMON LANGUAGE						
CL1	The need for project management is recognized at all levels of management, including senior management.					
CL2	The benefits of implementing project management are recognized at all levels of management, including senior management.					
CL3	Management recognizes the value of applying project management across different parts of the business.					
CL4	Executives recognize what needs to be done to achieve project management maturity.					
COMMON PROCESS						
CP1	Executives fully support project management.					
CP2	The executives have a good understanding of the principles of					

	project management.					
CP3	Executives understand the role of project sponsorship.					
CP4	Executives have demonstrated willingness to change business practices to advance project management maturity.					
SINGULAR METHODOLOGY						
SM1	Lower and middle-level line managers fully support the project management process.					
SM2	Line managers are committed both to project management and its deliverables.					
SM3	Lower- and middle-level line managers have received training and education in project management.					
SM4	Lower and middle-level line managers are willing to release their employees for project management training					
BENCH MARKING						
BM1	A well-defined project management methodology, based on life cycle phases, is in place.					
BM2	There is a commitment to quality up-front planning.					
BM3	Effective measures are being taken to minimize scope creep on projects.					
BM4	Project management software tools					

	are used to track projects.					
CONTINUOUS IMPROVEMENT						
CI1	There is a cost and schedule management system.					
CI2	An integrated cost and schedule control is in place for project management and status report.					
CI3	Project management curriculum is developed to enhance staff's project management skills.					
CI4	Project management is viewed as a profession in the organization.					

Source: by (Souza et al., 2012)

Thank you for your time and response! Good day!!

/The End/