**ADDIS ABABA UNIVERSITY**

**COLLEGE OF BUSINESS AND ECONOMICS**

**SCHOOL OF COMMERCE**




# Examining the Relationship between Time Management and Project Success: Insights from the Commercial Bank of Ethiopia Head Office's Construction Projects

**A Research Project Submitted in Partial Fulfilment of the Requirements for the Award of the Master's Degree in Project Management**

**Prepared by: Zekarias Mohammed Haji**

**Advisor: Dr Solomon Markos**

**June, 2026**

**Addis Ababa, Ethiopia**

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# DECLARATION

I, Zekarias Mohammed, declare that the research project entitled "Examining the Relationship Between Time Management and Project Success: Insights from the Commercial Bank of Ethiopia Head Office Construction Projects" is my own original work, and has not been submitted for any degree in any other University. All sources of materials used for this study have been duly acknowledged.

**Name:** Zekarias Mohammed

**Signature**: _____

**Date**: _____

# CLARIFICATION

This is to certify that Zekarias Mohammed has conducted this project work entitled “Examining the Relationship Between Time Management and Project Success: Insights from the Commercial Bank of Ethiopia Head Office Construction Projects” under my supervision. This project work is original and suitable for submission in partial fulfilment of the requirements for the award of the Master of Arts Degree in Project Management.

**Name of Advisor:** Solomon Marks(PhD)

**Signature:** _____

**Date:** _____

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**DEPARTMENT OF PROJECT MANAGEMENT**

## Examiners of the Approval of the Thesis

This is to certify that the project prepared by Zekarias Mohammed, entitled: "Examining the Relationship Between Time Management and Project Success: Insights from the Commercial Bank of Ethiopia Head Office Construction Projects" and submitted in partial fulfilment of the requirements for the award of a master's degree in project management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

## Signature of Board of Examiners:

Approved by the Board of Examiners

Solomon Markos (PhD) Signature: _____ Date: _____

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# ACKNOLEDGMENT

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# ABSTRACT

*Project management is essentially about utilising one's knowledge, the tools at one's disposal, and practical skills to guide a project's activities in a manner that meets or even exceeds what stakeholders need and expect (PMBOK, 2014). Large-scale infrastructure projects in developing economies frequently suffer from schedule cost overruns. This study examined the relationship between project time management practices (scheduling tools, estimation accuracy, resource allocation and schedule control) and project success (schedule adherence, budget compliance, and stakeholder satisfaction), while evaluating the moderating roles of top management support, labour productivity and contractor performance. The study focused on the Commercial Bank of Ethiopia(CBE)'s head office projects. A descriptive and explanatory quantitative study with a sample size of 51 was adopted. Structured 5-point Likert scale questionnaires were distributed to project managers, site engineers, consultants and client representatives. The collected data were analysed using descriptive statistics, bivariate correlation, and moderated multiple regressions using IBM SPSS. The descriptive results revealed that while initial project schedules were thoroughly prepared, on-site schedule control mechanisms were weak, characterised by irregular updates and minimal use of advanced technologies such as Building Information Model (BIM). Initial time estimation failed to account for material availability and risks, forcing reactive re-estimations. Consequently, stakeholders universally agreed that the project failed to meet its planned schedule and budget targets, with schedule delays driving cost overruns. Crucially, moderation analysis demonstrated that while the project possessed strong institutional top management support and highly capable skilled labour, these positive environmental drivers were entirely neutralized by poor contractor compliance with agreed schedules. The study concludes that administrative scheduling compliance without dynamic operational control creates a major gap in project execution. It is recommended that future projects mandate the use of integrated 4D BIM platforms during tendering, enforce strict contractual liquidated damages for milestone delays, and replace static planning frameworks with collaborative, team-based resource levelling.*



***Key Terms:*** *Time management, project success, schedule overruns, contractor compliance, Resource allocation, building information modelling(BIM)*

# CHAPTER ONE: INTRODUCTION

In this section background of the study and the organisation to be studied, as well as the statement of the problem, are discussed. Moreover, the research question, the objectives of the study, the significance of the study and the scope and limitations of the study are dealt with

## 1.1 Background of the Study

Project management is essentially about utilising one's knowledge, the tools at one's disposal, and practical skills to guide a project's activities in a manner that meets or even exceeds what stakeholders need and expect (PMBOK, 2014). But the difficult part is almost always operating in competing demands. Things like scope, time, cost, and quality usually don't align as wanted. Additionally, different stakeholders have different interests. Some needs are clearly spelt out; others you don't even know about until halfway through. The project is believed to be a temporary thing. You're not running a factory. It can also have been seen creating something unique, a product, service, or result, and then the team disbands (PMI, 2014).

Now, talking about time management in projects is a whole discipline on its own. If you can't deliver on time, nothing else really matters. It's about figuring out how long activities will take, putting them in the right order, and keeping everything under control so as to hit mandatory deadlines (PMI, 2013). Nowhere is this more real than in construction. The sector has changed to a lot bigger projects, more technology, lots of moving parts, and clients who want very specific things. A sense of how important this all is when you look at what the built environment contributes to GDP. And one simple but powerful sign that a project is going well is that tasks get finished when they're supposed to Tewdros, M (2025).

Good time management is very important in many aspects because study after study shows the same thing: projects run late and above their budgets all the time, across pretty much every industry. According to the Project Management Institute, they found that 43% of projects finished late. That's not a small number. And when projects are late, costs go up, and customers get unhappy (PMI, 2020). So if running a project-based organisation, getting time management right isn't optional. It's how a company or organisation stay competitive, keeps clients happy, and actually makes money on its investments.

It is obvious that Good time management gives project managers and teams a way to plan what is to be executed, track where they are and adjust when things change. To take a look at Ethiopia's context right now, there's been this big push on high-profile infrastructure projects. The

Commercial Bank of Ethiopia's Head Office district projects, including joint ventures, all of which point to a real commitment to modernisation to cope with current competition or have a competitive advantage in the volatile market we are witnessing at the international level. But here's the problem: large-scale projects like these are sophisticated. They almost always struggle with triple constraints (scope, cost and time). According to the director of CBE's building construction management department, more than a few of their construction projects are suffering from time and cost overruns. That's not speculation, that's from the person in charge. A good example here is the CBE Chaka commercial mall, which is still under construction, just had a time extension request approved. Additionally, other projects, such as Bahirdar, Hawasa, and Mekele district projects, have experienced significant time and cost overruns. This is, according to the director of building construction management.

So, the study will attempt to examine the time management practices that were actually used or ignored during this high-stakes project. Then figure out, in numbers if possible, how those practices affected whether the project succeeded or not.

The lessons here could help other banks, too. And even organisations outside banking that want to improve their project management skills must consider important cost implications. I think this research matters because it shows concretely how good time management can help pull off complex construction and property development projects. Not just in theory, but on the ground.

## 1.2 Background of the organisation

The history of Commercial Bank of Ethiopia (CBE) dates back to the establishment of the State Bank of Ethiopia in 1942. CBE was legally established as a share company in 1963. Since then, it has been playing significant roles in the development of the country. Proudly licensed by the National Bank of Ethiopia on December 16, 1963 (NBE Registration No. LBB/001/63) as per banking business proclamation number 592/2008, we are authorised to provide full banking services across the nation (Commercial Bank of Ethiopia, n.d.).

Currently, CBE has more than 44.9 million account holders and more than 1,971 branches and service outlets. The number of Mobile and Internet Banking users has reached more than 11.2 million and 331,729, respectively. Active ATM card holders have also reached more than 15.1 million, and there are more than 30.4 million CBEBirr users (Commercial Bank of Ethiopia, n.d.).

It's a famous construction project. The Commercial Bank of Ethiopia (CBE) Headquarters is a 209.15meter skyscraper in central Addis Ababa. Completed in 2022, it is the tallest building in

Ethiopia and all of East Africa and was constructed by the China State Construction Engineering Corporation (CSCEC) for $303.5 million. According to Fitsum Admasu, Design Team leader at CBE's Building construction management department, the bank is engaged in District buildings at three different cities, with their scope being G+17 as well as construction of Chaka Commercial Mall Building (2B+G+3 structure with Supermarket, Retail Shops, Cinemas, Restaurants, Gym, Sauna and outdoor playing fields and landscape.

## 1.3 statement of the problem

Construction is the backbone of progress, especially for developing countries like Ethiopia. It builds the roads, bridges, and buildings that keep an economy moving. Naveen Kumar and Prabhu (2016) put it simply: this sector drives the whole country by creating physical infrastructure. So when construction projects go well, everyone benefits. Other industries run more efficiently. Productivity climbs. But most importantly, finishing a project successfully means hitting budget and schedule. And that takes real engineering judgment, not just checklists (Al Najjar, 2008). But here's what is actually happening in Ethiopia, according to Worku Koshie (2025) in the Journal of Legal, Building, and Environment Engineering: only 8.25% of projects finish on time. The other 91.75% is delayed. And not by a little. They're running 352% over their original contract time. That's not a delay. That's a crisis to a country's economy and project management as a whole.

People have studied this, like (Wondwessen 2019), who looked at road projects that were already finished and tried to figure out why they ran late. He found 15 main causes. Some of them you'd expect poor planning, rework because of mistakes, and low labour productivity. Others are more about how contracts are awarded. Turns out, giving projects to the lowest bidder causes problems. So do progress payments that come late from the project owner.

More recently, Zewdie (2024) took a close look at project time management in Ethiopia. What he found surprised me, even top firms like Noah Real Estate are still using manual scheduling and basic charts. They're not touching more sophisticated methods like Critical Path Method (CPM), Earned Value Analysis (EVA), or real-time tracking. That's a problem because projects are getting bigger and more complex. Take the Commercial Bank of Ethiopia's Head Office. That kind of project needs Building Information Modelling (BIM) and 4D scheduling. Traditional tools just can't handle the interdependencies and logistical chaos. Everyone agrees that time management is critical. Ethiopia is pouring money into big infrastructure projects, especially through the Commercial Bank of Ethiopia. Yet delays and cost overruns keep happening. It's not a secret.

Consider the CBE Chaka Commercial Mall. They just had a time extension approved, and that's recent. Or look at other major CBE projects like Bole, Hawassa, Mekele, and Bahirdar. Delays everywhere. This isn't random bad luck. It looks systemic, like something deeper is broken in how schedules are managed. The PMBOK framework gives clear guidance on time management. But it's not obvious which part of that framework is failing here. Is it that people aren't following the processes, or are the local practices people actually using just not working is a critical question. This is the real problem. We don't have a scientific understanding of what time management practices are being used or ignored on these major CBE projects. Therefore, there is a lack of empirical, project-specific evidence linking time management practices to schedule deviations and project success in large Ethiopian public-sector projects like commercial bank of Ethiopia, the study will try to examine this and recommend scientific solutions.

## 1.4 Basic Research Questions

The study is trying to answer the following four Research Questions:

1. What specific time management tools and techniques are currently utilized by project teams at the CBE Head Office?
2. How successful are CBE's high-profile construction projects when measured against success factors (Time, Cost, and Scope)?
3. Is there a significant statistical relationship between the use of time management planning and the reduction of schedule overruns in CBE projects?
4. What are the causes of the time extension requests from a management perspective?

## 1.5 Hypothesis of the Study

As stated by (Kothari 2004) ordinarily, when one talks about hypothesis, one simply means a mere assumption or some supposition to be proved or disproved. But for the researcher hypothesis is a formal question that he intends to resolve. Thus, a hypothesis may be defined as a proposition or a set of propositions set forth as an explanation for the occurrence of some specified group of phenomena either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable in the light of established facts. Quite often a research hypothesis is a predictive statement, capable of being tested by scientific methods, that relates an independent variable to some dependent variable. So that for achieving the objective of these study, the following hypotheses were developed regarding on the Relationship between project time management practices on project success: Insight from the commercial bank of Ethiopia head office construction project grounding on theoretical review and Empirical Research.

**H1**: There is a significant positive relationship between scheduling tools and project success.

**H2:** There is a significant positive relationship between time estimation accuracy and project success.

**H3:** There is a significant positive relationship between resource allocation and project success

**H4:** There is a significant positive relationship between Monitoring schedule control and project success

**H5:** Top management support significantly moderates the relationship between Time management practices and project success

**H6:** Labour Productivity significantly moderates the relationship between Time management practices and project success

**H7:** Contractor performance significantly moderates the relationship between Time management practices and project success

## 1.6 Objectives of the Study

### 1.6.1 General objective of the study

The General objective is to investigate the relationship between project management practices and project success in the context of the Commercial Bank of Ethiopia (CBE) head office construction projects.

### 1.6.2 Specific Objectives

1. To assess the current project time management practices employed in CBE's head office.
2. To evaluate the level of project success at CBE based on time, cost, Quality and whether stakeholders are actually satisfied.
3. Find out how much good time management practices correlate with delivering projects on time, making it successful
4. Identify the biggest challenges that stop CBE from properly implementing PMI Standard time management processes in their construction environment.

## 1.7 Significance of the study

The study is expected to be valuable in many ways, such as:

1) **For CBE's management:** Right now, CBE is reacting by approving extensions after things go wrong. This study gives them a clear picture of the link between time management and

success. That means they can shift from reactive to fix delays to proactive approach in preventing them. Plus, when CBE finishes projects efficiently, its massive capital investments start paying off sooner. That helps national infrastructure and financial stability.

2) **For project managers and contractors:** You need to know what actually works in Ethiopia's construction climate, not just what textbooks say. This study gives practical insights into which time management practices deliver results so that these managers and contractors can change this practical insight to their teams and managers, as well as contractors.
3) **For academicians and policymakers:** This adds to Ethiopia's construction management literature in a specific way. It tests whether the PMBOK framework's theoretical benefits hold up when you apply them to mega-projects in a developing economy and such unusual sectors as bank where people think there is not much construction delivery, or sectors with unique resource problems and regulatory difficulties.

## 1.8 Scope of The Study

What is covered in this study is presented as follows:

1) **Geographically:** The study is looking at project time management practices within CBE's Building Construction Management department head office, which is a state-owned bank in Ethiopia. It will help to see what is working and what is not in this specific context. To do that, the study will be centred on professionals from three groups: the client (CBE), contractors, and consultants involved with their projects. Their experiences and perspectives are the raw materials here, and they believe in finding areas for improvement.
2) **Methodologically:** This study will employ a mixed-methods approach, collecting both numbers and stories. Due to a smaller number of respondents expected, the study will use a census survey. In a census survey, data will be collected from every single member of the target population.
3) **Conceptually:** this study sits inside the broader project management literature, but it focuses on project time management. I'm drawing on theories from organisational behaviour, project management, and organisational performance to make sense of the complexity. That means looking at scheduling tools, resource allocation, time estimation techniques, and stakeholder satisfaction. By examining all of this through the lens of CBE's

head office practices, I hope to show how organisations can improve their time management capabilities and get better results.

4) **The target population:** The target population of this study comprised of project managers, engineers, client representatives from commercial bank of Ethiopia(CBE), as well as consultants and contractors' representatives based in Addis Ababa. These professionals are actively involved in construction projects managed and supervised by CBE Head Office across various locations in Ethiopia, including Addis Ababa, Hawassa, Mekelle, and Bahirdar. Since the total number of individuals meeting these criteria was relatively small, all 51 professionals were included in the study population.

## 1.9 Limitations of the study

Even though the study is significant in many ways, there were some limitations that are acknowledged. Firstly, the population size is limited to a specific group of professionals from five project sites owned by CBE in Addis Ababa, Hawassa, Bahirdar, and Mekelle, Ethiopia, which may not be representative of all professionals in the field. Secondly, the study relied on self-reported data from the respondents, which may be subject to biases and inaccuracies. Additionally, the study only focused on project time management practices and their effects in commercial bank of Ethiopia's head office, and may not be generalizable to other organisations or industries. Despite this, the study provides valuable insights into the project time management practices employed by commercial bank of Ethiopia, Ethiopia. The findings can be used to inform future research and to identify areas for improvement in project time management practices in similar and other organisations.

## 1.10 Organisation of the study

The study is organised into five chapters. Chapter one presents the introduction of the study. Chapter two presents the literature review. Chapter three presents the research methodology. Chapter four presents the results and discussion. Chapter five presents the conclusions and recommendations. Finally, the references used in the study are listed at the end. Questionnaire that has been used is included in the Appendix part.

## 1.11 Definition of Terms

**Project Time Management:** currently referred to as project schedule management, is the area of project management that includes the processes required to ensure the timely completion of a project. These processes involve planning schedule management, defining activities, sequencing activities, estimating activity durations, developing the schedule and controlling the schedule(PMI,2021).

**Activity Definition:** Identifying the specific activities which must be performed in order to produce the various project deliverables and achieve project objectives(PMI,2017).

**Activity Duration:** refers to the total amount of time, expressed in work periods or calendar units, required to complete schedule activity from start to finish(PMI,2017)

**Activity Duration Estimating:** Estimating the number of work periods that will be needed to complete individual activities. (PMI,2017)

**Activity Resource Estimating:** Estimates the type and quantities of material, people, equipment, or supplies required to perform each activity. (PMI,2017)

**Activity Sequencing:** Activities are arranged in a logical sequence showing the order in which these activities must be performed. (PMI,2017)

**Plan Schedule Management:** The aim of this process is to establish the policies, procedures, and documentation for planning, developing, managing, executing, and controlling the project schedule. (PMI,2017)

**Schedule Development:** It is the process of analysing schedule activity sequences, schedule activity durations, resource requirements, and schedule constraints to create a realistic and approved project schedule that serves as a baseline for monitoring and controlling project progress. (PMI,2017)

**Schedule Control:** It is the process of controlling changes to the project schedule. Source: project management glossary of terms (Fall. 2007)

# CHAPTER TWO: LITERATURE REVIEW

This chapter will systematically identify, locate, and analyse empirical and theoretical information related to the effect of project time management on the success of projects. This chapter reviews related literature with respect to the research objectives and also discusses the conceptual framework and the gaps in knowledge in the study.

## 2.1 Theoretical Review

The Iron Triangle Theory (Triple Constraint) as Barnes (1969) pioneered this framework, and it's still the foundational way we evaluate project performance. The core insight from this theory is that project success isn't one thing, it's a balance between three interdependent variables: Time, Cost, and Quality (or Scope) (Pollack et al., 2018). Project success (or failure) contributes to the success (or failure) of corporate strategies, that's why projects are increasingly becoming an integral unit of corporations functioning in the competitive environments of today (Kasravi, Mahmoudi, & Feylizadeh, 2019). The success of a project is measured by the extent to which it meets the predetermined criteria of cost, time, safety, resource allocation, and quality as determined by the owner, which are quite difficult to meet in most projects (Lafhaj et al., 2016). common definition in project management are temporary in nature and are carried out to manifest the organization's strategic objectives. These temporary structures are playing a vital role in today's modern organizations and a growing interest is recorded in the significance of these temporary structures
in organizations.

### 2.1.1 Project Management

To see inside literature about project management, the PMI (2013) defines it as applying specialised knowledge, skills, and tools to project activities so it can meet or hopefully exceed what stakeholders expect. The most important thing is constantly managing things that pull in opposite directions. The three constraints (Scope, time, cost) and quality don't naturally align. Most modern organisations have shifted to project-based structures anyway, because that's how value gets delivered, and strategies get executed (Lundin et al., 2015; Shenhar & Dvir, 2007).

Despite professionalization in the field, there's still a big gap between what organisations intend to do and what actually happens. Large-scale projects keep falling into the same traps, cost overruns, missed deadlines, and failing to hit sustainability targets (Flyvbjerg, 2017; Love et al., 2019; Wang et al., 2022). This has forced a rethinking of how success is measured (Schoper et al., 2018; Denicol et al., 2020). As Rittel and Webber (1973) observed, defining "value" is a wicked problem because

different stakeholders hold different concepts of success and these views shift over the project life cycle (Davis, 2017; Browning,2019). So what gets delivered often doesn't match what stakeholders actually wanted by the end in terms of scope and time of delivery (McLeod et al., 2012; Browning, 2019).

People have been studying project success for over thirty years, going back to Pinto & Slevin in 1988. But we're still struggling to come up with a simple, clean set of success dimensions that everyone can agree on. Funders, owners, managers, and end-users all see things differently (Pinto et al., 2021; Thomas & Fernandez, 2008). Davis (2017) put it bluntly: there's no unified theory that accounts for multiple stakeholder perspectives at the same time. So we're left without a standard set of success measures that works everywhere while still being sensitive to specific project contexts, at least for most non-international development projects (Thomas & Fernandez, 2008; Zwikael & Meredith, 2021).

So, how do we fight these systemic failures is the question. Modern practitioners have tried to build a culture of innovation. By embedding adaptive ideas into how the organisation works, they keep refining their ability to deliver (Wallman, 2010). The key is staying committed to a stakeholder focused approach. If projects stay responsive to what key groups expect, it can keep project manager efforts aligned with what they perceive as valuable (Barwise & Meehan, 2010).

Put all this together, contemporary management theory plus practical application, and we get a solid framework for organisational success. Formal governance sets the strategic direction and defines boundaries. But for this to actually work, project-level activities have to stay dynamically aligned with high-level business goals. If the overall strategy shifts, project objectives need to shift too immediately. When that alignment holds, the probability of success goes way up, because what the project produces stays connected to the organisation's long-term vision (PMI, 2013). For CBE's vision to lead the Ethiopian Economy through financing and delivering profitable projects, unique and systematic project management systems are essential. The building construction department's projects must be viewed through this theoretical lens.

### 2.1.2 Project Time management

One of the fundamental pillars of project success is time management, especially in construction. The PMI (2017) defines it as applying a comprehensive system of guidelines, techniques, and tools that help individuals and organisations use time effectively to hit specific targets. In simpler terms, it's how time is planned, scheduled, monitored, and controlled so the project finishes within its

deadline and actually reaches your milestones. So, what does effective time management really involve? Global standards like PRINCE2 (2017) and PMBOK (2021) highlight several interconnected processes.

#### 2.1.2.1 Project Scheduling

Building a detailed roadmap that shows the sequence, duration, and dependencies of activities and deliverables (Meredith & Mantel, 2020).

#### 2.1.2.2 Importance of project scheduling

Project scheduling is an art of planning and designing project activities so that the project can achieve its desired goals and priorities within the constrain of time and cost. In Project time management scheduling problem includes the scheduling of project tasks and activities subject to the precedence or resource constraints (Herroelen, 2005). Project scheduling process includes defining project activities, and estimation of time and resources to be used for the activities (Muhammed & Muhammet, 2018).

- **Define project scope:** The first step in planning involves defining the scope of the project or seeing project end at the beginning, this entails forecasting the project deliverables. Project scheduling will help the project manager to determine all required tasks to complete the project within time limit and within the approved budget.

- **Determine the project duration:** Effective scheduling helps project team to estimate the needed duration and effort for each activity of the project. Duration may be presented in hourly, days, weeks, months and years, the level of labor required for each activity or % of usage required by each task, these can then be summed up to determine the overall project duration.

- **Effective organization:** A project often includes different stakeholders such as; project teams, donors, top management, vendors, regulators. Scheduling helps the project manager to establish all aspects to effectively and efficiently plan and complete the project on time.
- **Resource allocation:** Scheduling helps project team to define the resources required to complete every task and activity of the project. This comprises of looking at project expendable and reusable resources and determining the amount needed resources.
- **Identify the project constraint:** Each project task will have limitations, so it's imperative to plan for them. Project schedule will help the project manager to scrutinize each task or activity for any specific limitations. It could be a time, specific skills required to perform specific tasks or other dependencies.

- **Better project estimates:** Occasionally, project managers make improper estimates on project time and cost without properly assessing their ability to meet those estimates.
- **Better project tracking:** Since project resources are assigned as per the project schedule, project may be in remote areas or on different teams, project teams should have a centralized system that provides full tracking into how project resources are being utilized.
- **Improves project team trust**: Resource scheduling and planning also improves project team trust. When there is accurate scheduling system in place, it doesn't put any unwarranted burdens or demands on the team. They trust the schedule because it gives them suitable insight into busy project time for advance project planning, hence this will improve the working environment and team accountability.
- **Anticipate delays:** In project, delays are inevitable for various reasons. Effective and efficient project schedule can help project team to predict the delays earlier enough and adjust deadlines as required.
- **Advance planning:** Project scheduling helps project team to plan for impending projects by predicting the future capacity and demand for the projects.

- **Understand project trends:** Project scheduling also contains assessing the project trends. Top management can consider seasonal highs and lows and adjust project scheduling to forestall bottlenecks and low activity periods.
- **Provides project with real data and analysis**; Monitoring project resource utilization in a project is a very critical to timely project delivery and cost efficiency. Using project monitoring technology to track project schedules in real-time offers key data and analysis.

#### 2.1.2.2 Time Estimation

Predicting how long each task will take, while accounting for resource availability and potential constraints (PMI, 2017). Expert judgment, Analogous estimating, Parametric estimating and reserve analysis are some of the types.

#### 2.1.2.3 Time Tracking and Control

Continuously checking progress against its baseline schedule to spot deviations. When delays happen, using control measures such as schedule compression, reallocating resources, and risk mitigation to get back on track (PMBOK, 2021; PRINCE2, 201)

#### 2.1.2.4 Resource allocation

A common resource constraint is availability. To consider the availability of team members, consultants, and key pieces of equipment, you can create a resource calendar for each that indicates which days are available and which are days off for a group, an individual, or a project asset such as a piece of important equipment. A calendar for team members from the same company could be the company calendar that shows working days, weekend days, and holidays. Individual team members can have individual calendars that show their vacation days or other days off, such as parental leave days. If major pieces of equipment are only available for certain periods of time, they can be given a resource calendar. Resource calendars become important tools when changes must be made to the schedule. When a resource calendar is applied to a duration estimate, the duration in days is distributed across the available calendar days.

#### 2.1.2.5 Time Reporting

Regularly telling stakeholders about performance variances and what you're doing to fix them (Meredith & Mantel, 2020). Here's the thing, though. Even with sophisticated software available for tracking milestones, budgets, and long-lead items, many project managers struggle to pick the most efficient tools for their specific needs (Leal et al., 2018). That efficiency gap hurts especially in construction, where delays are a global problem (Yang, 2011). If you do not implement rigorous time management, it results in a ripple effect: work slows down, time gets wasted, and the resulting overtime and budget overruns eat directly into profits and stakeholder satisfaction (Yang, 2011).

#### 2.1.2.6 List of Activities

The list of activities, their relationship to each other, and estimates of durations and required resources comprise the work breakdown structure (WBS). The project WBS is a hierarchical classified according to criteria into successive levels listing and grouping of the project activities required to produce the deliverables of the project. The WBS represents a breakdown of the project into components that encompass the entire scope of the project. Each level of the WBS hierarchy represents a more detailed description of the project work so that the highest level represents broad categories, and the lower levels represent increasing amounts of detail. The size of the WBS is directly related to the amount of work on the project and how that work is divided into work packages. The WBS can be developed around the project phases or the project units or functions that will be performing the work. A WBS organized around the project phases facilitates the understanding of the amount of work required for each phase of the project. A WBS developed around the project units or functions of the project facilitates the understanding of the amount of work required for each function.

#### 2.1.2.7 Activity Sequencing

Determining the schedule of a project begins by examining each activity in the WBS to determine its relationship to the other activities. The project logic is the development of the activity sequence or determining the order in which the activities will be completed. The process for developing the project logic involves identifying the predecessors, activities that come before and successors, the activities that come after. 14 Tools and Techniques used for the Sequence Activity process are (PMP, 2012): Precedence diagramming method (used in CPM), Dependency determination (using FS, FF, SS, SF dependencies and logic relationships), applying Leads and Lags and schedule network templates.

#### 2.1.2.8 Schedule control

Schedule control is concerned with (a) influencing the factors which create schedule changes to ensure that changes are beneficial, (b) determining that the schedule has changed, and (c) managing the actual changes when and as they occur.

#### 2.1.2.9 Mastering Project Time Management Skills

Vennila (2018) suggested various ways to manage time effectively by highlighting several techniques that can be borrowed by top management.

- Project team members should arrange their schedule according to project priorities as per the WBS or CPA, which means that they should look at the important dates of project activities, and then write them down on a calendar as a reminder note. This will make the project team see the whole project as a lot easier and simpler.
- The project team, including stakeholders, should get over any bad feelings that the project might face during the project life cycle, and move beyond them by having a proper risk mitigation plan
- Communication should be integrated into the organisational culture; this will reduce the project team conflict.
- Getting Organised project team waste about five weeks a year looking for lost items." Therefore, not organising a reservation saves a lot of time. Nonetheless, getting organised means having your desk cleared, your papers filed, your tasks listed, and your events scheduled.

### 2.1.3 Project Success

A project is successful when it is completed on time, within budget, and in accordance with specifications and to stakeholders' satisfaction. Functionally, profitability to contractors, absence

of claims and court proceedings and “fitness for purpose” for occupiers has also been used as measures of project success (Takim & Akintoye, 2002). The success of a project is also traditionally measured by time, budget, and requirements criteria. Even though this manner of measuring project success is currently subject to widespread criticism, these criteria is still often used in publications on project success in construction projects (Royal Academy of Engineering, 2004).

### 2.1.4 Theoretical Framework

This study is built on multi-theoretical frame work combining the iron triangle and planning theory, but it is principally anchored in Goldratt’s Theory of constraints(TOC).

1) **Theory of Constraints:** Goldratt (1984) introduced this idea, which says any complex system, like a large-scale construction project, is limited in achieving its goals by at least one specific constraint or bottleneck. For CBE's head office projects, time is the primary constraint. It dictates the pace of everything else. According to Goldratt, an hour lost at a bottleneck like the foundational delays we've seen at the Chaka Commercial Mall is an hour lost for the entire project system. So managing project success at CBE requires more than just administrative scheduling. Focus on the weakest link in the project chain is important, making sure critical time-sensitive tasks get priority so that prevention of systemic schedule overruns and the cost escalations that follow (Mabin & Balderstone, 2020).\
2) **The Iron Triangle Theory (Triple Constraint):** Barnes (1969) pioneered this framework, and it's still the foundational way we evaluate project performance. The core insight from this theory is project success isn't one thing, it's a balance between three interdependent variables: Time, Cost, and Quality (or Scope) (Pollack et al., 2018). For CBE's projects, this theory justifies using a multi-dimensional set of success measures. It suggests that any deviation in the project timeline, like the recent time extension for the Chaka Commercial Mall, inevitably forces a trade-off. Either project costs go up as overhead and other costs may increase or quality/scope gets compromised to meet new deadlines (Kerzner, 2022). So this study uses the Iron Triangle to look beyond just calendars. I'm analysing how CBE's time management practices serve as the focal point that determines the overall stability and success of their infrastructure investments.
3) **Planning Theory:** This theory makes a simple but important point: there's no "one-size-fits-all" approach to project management. Adaptation to management strategies to each project's specific context is important. That is useful here because different projects within

CBE's head office portfolio might have completely different delay factors. I need to account for that.

### 2.1.5 Determinants of Effective Time Management

Some literature identifies three primary pillars that shape time management outcomes: Principles, Processes, and Practices (PMI, 2017; Zidane & Andersen, 2018).

**1. Foundational Principles and Competence**

- **The 10/90 Rule:** Hirsch & Peters (2012) argue that careful planning, just 10% of your time, can save 90% of the effort during execution.
- **Managerial Competence:** The project manager's ability to apply tools, think strategically, and manage their own behaviour is a critical success factor (Brill, 2016; Müller & Turner, 2010).
- **Resource Planning:** You have to optimize scheduling of machinery, labour, and materials. If you don't, you get extreme delays and cost escalation (Usman & Kamau, 2014).

## 2.2 Empirical Review

Recent research shows that the traditional factors influencing time management are being reshaped by digital integration and global economic shifts. Let me walk through some key findings. Tewodros (2025) did a study specifically on the Ethiopian built environment. His argument? Timely task fulfilment remains the most significant indicator of project success for large-scale infrastructure. That matches what Osuizugbo (2022) found in developing economies: a project manager's technical competence isn't enough anymore. They now need digital literacy in scheduling software to handle the complexity of modern mega-projects. Then there's the role of institutional support. Flyvbjerg (2021) calls this "de-biasing." The latest research suggests that top management's most critical role is no longer just allocating resources follow up of the schedule comes into play. It's implementing Reference Class Forecasting to combat the Planning Fallacies that plague institutions like CBE. Aslam et al. (2023) backed this up; they found that projects with active senior management involvement in risk-adjusted scheduling were 30% more likely to meet deadlines compared to those using traditional static schedules. As for resource constraints Abbas et al. (2024) highlight that the global post-pandemic shortage of specialised technical labour has become the primary bottleneck for high-stakes projects. This is particularly relevant for the CBE Head Office, where complex technological interdependencies require a specific calibre of skilled labour that's usually in short supply locally. Gunduz and Almuajab (2022) reinforced this; their

comprehensive delay analysis model ranked labour productivity and qualification as the top-tier factor.

- Finally, the contractor-client relationship has shifted toward collaborative procurement. Walker and Lloyd-Walker (2021) emphasise that time management success or failure now depends on integrating the contractor into early planning phases. This is a critical insight for CBE. It suggests that the documented time extension requests for projects like the Chaka Commercial Mall, Hawasa, Bahirdar, and Mekele office construction projects might stem from a lack of integrated scheduling between the bank and its contractors from the very beginning of the project.

## 2.3 Conceptual Framework

The conceptual framework for this study stems from theories like the theory of constraint and the iron triangle theory.it posits the effectiveness of specific project time management practices directly influences the ultimate success of CBE construction projects. Moderating variables of top management, labour productivity and qualification as well as contractor performance, are to be checked. Below is adapted from Project Management Institute (2021), Eliyahu M. Goldratt (1984), and Harold Kerzner (2022)

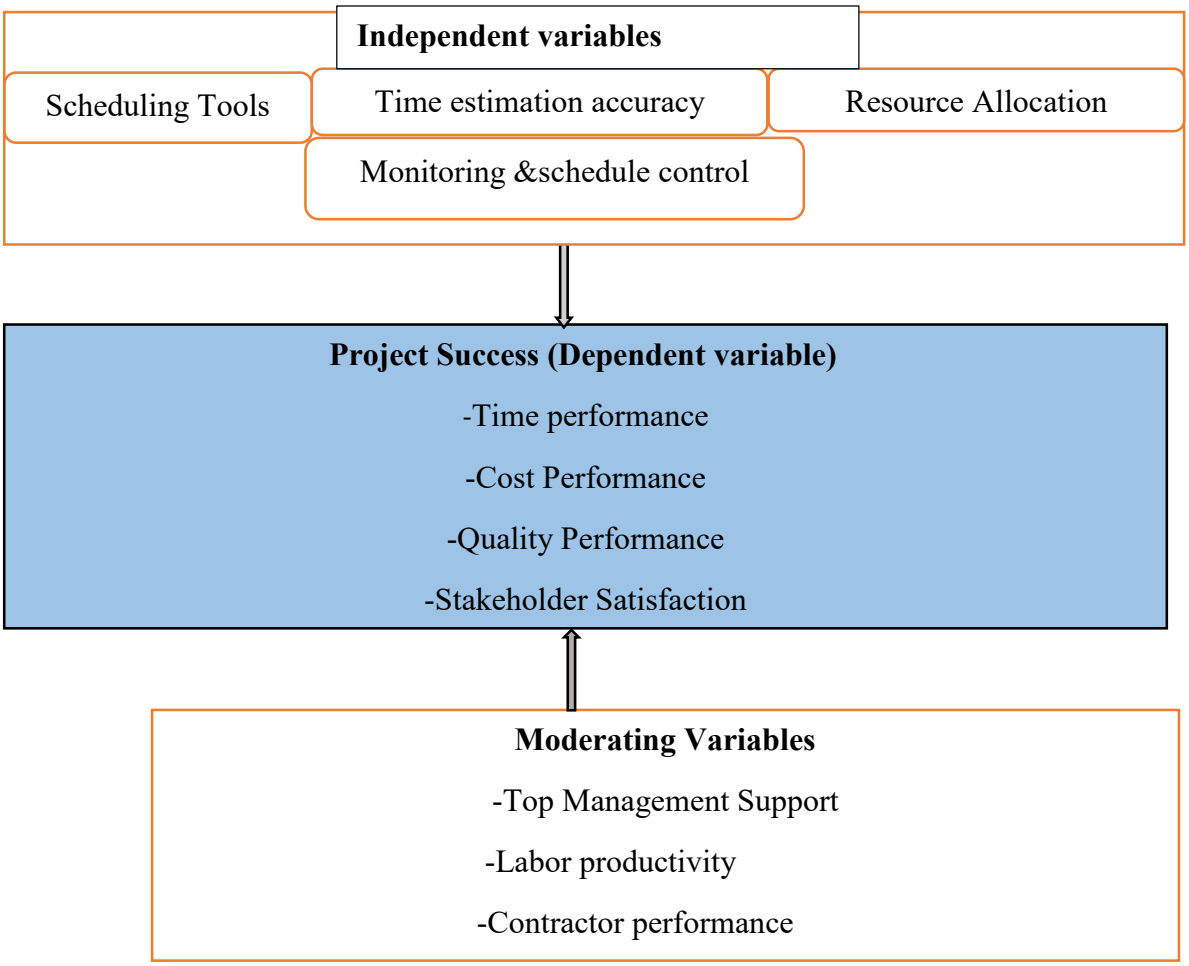



Figure 1:Conceptual Framework

# CHAPTER THREE: RESEARCH METHODOLOGY

This section includes what design and approach were taken. Where to get the data, how to collect it, and how to make sure the findings are trustworthy. It also covers the tools the study uses, how it is analysed, both the numbers and the interview transcripts, and the ethical steps that has been taken to protect the people who will be participating.

## 3.1 Research Design

According to (Hoppe et al., 2010) research design based on its purpose, research can be designed according to different categories. This study used descriptive explanatory approach because the main aim of the study was conducted to examine the relationship among variables in commercial bank of Ethiopia (CBE)'s head office focusing on construction projects undertaken. Scheduling tools, time estimation accuracy, resource allocation, monitoring schedule control as independent variable and project success as dependent variable with moderating role of Top management support, labor productivity and contractor performance. Thus, the research design was effectively enumerating and explain the effect of project time management practices on project success. So, it is extremely important to get as much data as possible for later analysis to ensure the effectiveness of project time management practices and investigate how the practices are effective or not.

## 3.2 Research Approach

The study employed a mixed-methods approach that means combining quantitative and qualitative data.

**Quantitative Data:** structured questionnaires was distributed to all project stakeholders involved in the projects under study, including engineers, project managers, contractor representatives, and CBE staff. This allowed to measure time management practices across four areas, such as scheduling tools, estimation accuracy, resource allocation, and schedule control. I will also assess project success using four indicators: time, cost, quality, and stakeholder satisfaction. Then, I will apply correlation and regression analysis to determine whether a statistically significant relationship exists between these variables.

**Qualitative Data:** semi-structured interviews was conducted with key informants, which included senior project managers, Contractor representative and consultant representatives. These interviews that helped the researcher understand the reasons behind whatever the data reveals on why do schedules overrun, how do delays in LC processing actually happened? What coping

mechanisms do project teams use when problems come up? The interview Data was analysed using thematic analysis.

The reason for using both methods is that research aims are two-way. First, to measure the relationship between time management and success. Second, to explore the root causes of time management gaps. Questionnaires alone cannot explain causes. Interviews alone cannot measure relationships across all stakeholders. So mixed-methods is essential. then integration of these two approaches within a descriptive and explanatory design, which will be explained in the next section.

### 3.4. Target population

The target Population is small (N=51) a census approach for the quantitative phase is used. Every stakeholder directly participated in CBE head office and district projects controlled by the head office. specifically project managers, site engineers, contractor representatives, consultant staff and CBE coordinators. These approaches eliminate sampling error and ensure every stakeholder perspective is represented. Because the quantitative phase covers the entire population, the findings will reflect the actual situation at commercial bank of Ethiopia's head office. Inclusiveness and representativeness. The study used purposive selection to identify key informants from within this same population and this will be done through consultation with project coordination office.

### 3.5 Methods of Data Collection

Data is collected using two methods. First, structured questionnaires were administered to all identified project stakeholders to gather quantitative data on time management practices and project success indicators. The questionnaires used closed-ended questions with Likert scales (e.g., 1 = strongly disagree to 5 = strongly agree). Second, semi-structured interviews with key informants like senior project managers, contractor representatives and consultant representatives to gather qualitative data on the causes and experiences of time management practices. The interviews followed a flexible guide, but allowed participants to raise issues I have not anticipated. The study chose these methods because they directly address research questions and objectives. Questionnaires allows to measure relationships across the entire population of stakeholders. Interviews will allow me to understand the context and reasons behind those measurements.

### 3.6 Research measurements and instruments

**Questionnaire:** A structured questionnaire is developed with two main sections. The first section captured demographic information, the second section measured four dimensions of time management practices (scheduling tools, estimation accuracy, resource allocation, and schedule

control) and four indicators of project success (time, cost, quality, and stakeholder satisfaction). Each item used a 5-point Likert scale.

**Interview:** Semi-structured interview guide with open-ended questions. The quantitative data from the surveys was analysed using descriptive statistics such as mean, median, mode to summarize the data and provide an of respondents' views on leadership practices and organisational change.

## 3.7 Method of Data analysis

After collecting the data, the analysis was made in parallel ways. Quantitative data analysis was used, including descriptive statistics such as frequencies, means, and standard deviation to summarise the current state of time management at CBE across all respondents and also use of inferential statistics specifically for Pearson correlation and multiple regression analysis to test whether time management practices predict project success. The study used SPSS for all quantitative analyses. For the Qualitative data analysis, thematic analysis was employed, and finally, integration of both sets of findings to conclude and develop recommendations based on the combined evidence.

### 3.7.1 measurement of variables(Likert's)

Table 1:Measurement of variables

| Variable Type | Variable | Number of Items | Scale |
|---|---|---|---|
| Independent variables | Scheduling tools | 6 | 1-5 Likert |
| | Time estimation accuracy | 5 | 1-5 Likert |
| | Resource allocation | 5 | 1-5 Likert |
| | Monitoring and schedule control | 5 | 1-5 Likert |
| Dependent variables | Project success(Time, Cost, Quality, stakeholder satisfaction) | 8 | 1-5 Likert |
| Moderating variables | Top management support, Labor productivity, contractor performance | 2 each | 1-5 Likert |

Scale: 1=strongly disagree,2=disagree,3=Neutral,4=Agree,5=Strongly Agree

## 3.8 Reliability and validity Test

According to Hair et al. (2003), the validity and reliability of the measures need to be assessed for the Instrument. Most research studies, either qualitative or quantitative, strive to attain validity and reliability. Validity concerns the soundness, legitimacy and relevance of a research theory and its

investigation. Whereas reliability refers to the consistency of findings, Reliability has to do with the extent to which measures obtained by using a particular instrument are repeatable. Creswell (2014) underlines the value of checking validity and reliability of data in attempting to acquire meaningful interpretations. Furthermore, he mentions Cronbach's alpha (α) the reliability checks for the internal consistency of the scales. The applicability of Cronbach's alpha as highlighted by Creswell, was the reason it is utilized in checking the validity and reliability of data in this study.

### 3.8.1 Reliability test

It is an assessment of the degree of consistency b/n variables of multiple measurements. Aim to indicate the extent to which a measure contains variable errors and the most common and useful way to measure is Cronbach's alpha. According to (Field, 2009) a Cronbach's α in a value between

0.7 and 0.8 is an acceptable value; values substantially lower indicate an unreliable scale. In similar vein, Hair, et al. Asserted that a coefficient α which is greater than 0.7 is highly satisfactory for most research purposes. The reliability statistics are presented in Table 1. below with over all reliability coefficient ***Alpha=0.741***

Table 2:Reliability Test

| **Variables Name** | **No of Items** | **Cronbach's alpha** |
|---|---|---|
| *Scheduling Tools & Techniques* | 6 | .781 |
| *Time Estimation Accuracy* | 5 | .719 |
| *Resource Allocation* | 5 | .772 |
| *Monitoring and Schedule control* | 5 | .723 |
| *Moderating Factors* | 6 | .742 |
| *Project success* | 8 | .719 |
| | | Source:SPSS(2026) |

### 3.8.2. Validity test

To determine the extent to which a constraint and its corresponding measurement indicators are related, and the extent to which this set of items actually reflects the constraint they were designed to measure.

To check the validity of the instrument by using the total item factor analysis of the research questionnaire. The value of r in Table 2 is determined by using the formula: -

**DF=53-2,** where **DF** degree of freedom

**N (53-2) =51,** the number of observations/respondents

If the calculated Pearson correlation coefficient is less than the Pearson product-moment correlation coefficient (r), the instrument will be valid
If r> critical value r = Valid

r< critical value r = invalid
Table 3:Validity test

| **Variables** | **Pearson Product-Moment Correlation Coefficient (R)** | **Critical Value r@ df (165)** | **Validity** |
|---|---|---|---|
| *Scheduling Tools & Techniques* | .887* | 0.208 | Valid |
| *Time Estimation Accuracy* | .927** | 0.208 | Valid |
| *Resource Allocation* | .927** | 0.208 | Valid |
| *Monitoring and Schedule control* | .900** | 0.208 | Valid |
| *Moderating Factors*<br>*Project success* | .918**<br>.929** | 0.208<br>0.208 | Valid<br>Valid |

## 3.9 Ethical consideration

The study used data from primary and secondary sources. Ethical concerns included the following:

- voluntary participation
- no harm intended to participants,
- privacy and confidentiality of participants was ensured. The study's findings will be reported in a combined form so that no individual respondent will be identified.

# CHAPTER FOUR: RESULTS AND DISCUSSION

## 4.1 Introduction

This chapter presents the data analysis and discussions based on the questionnaire survey. It discussed the questionnaire response rate and general information about respondents. It examined the relationship between time management and project success: insights from the Commercial Bank of Ethiopia's head office construction project. The collected data were analysed using the methods as mentioned in Chapter Three, and the findings were also outlined based on specific objectives of the study. A total of 51 sets of survey questionnaire was distributed, and all were collected and used in order to examine the time management practices against project success. The survey questionnaires were distributed to the client staff, project managers, site engineers, contractors, and consultant representatives who took part in projects under CBE's building construction management department. The response rate was 100% as the researcher followed up the process properly and a staff of the being studied department.

## 4.2 Demographic characteristics of Respondents

Demographic characteristics of the respondents of this research include respondents' level of experience, educational level, Designation in the company and at building construction.

As shown in the table 1 below, 40 (78%) respondents were male and 11 (22%) were female. The majority of respondents fall within the age range of 30-39 (49%) which is close to the range 40-49(40%), while the rest are in the 20-30(8%) and above 50(4%) range respectively. Regarding educational level, 46 respondents (90%) hold a B.A., and the remaining 5(10%) have an M.A. In terms of organisational roles, 17 (33%) are site engineers, consultant and contractor representative make up of 16 (32%), project managers are 7(14%) and other position client staffs make up of 9(17%).the remaining temporary junior engineers or associate engineers work between many different projects are 2(4%). Concerning project management experience, 25 respondents (49%) have 5-10 years of experience,17 (33%) have 11-15 years' experience and others 4(8%) and 5(10%) in numbers representing less than 5years and greater than 15years experience respectively.

Table 4:Demographic characteristics of respondents

| **Demographic variable** | **Category** | **Frequency(f)** | **Percentage(%)** |
|---|---|---|---|
| ***Role/Position*** | Project manager | 7 | 14 |
| | Site Engineer | 17 | 33 |
| | Contractor representatives | 9 | 17 |
| | Consultant representative | 7 | 15 |
| | Client staff | 9 | 17 |
| | Other(juniors/associate engineers) | 2 | 4 |
| ***Total*** | | 51 | 100 |
| ***Gender*** | Male | 40 | 78 |
| | Female | 11 | 22 |
| ***Total*** | | 51 | 100 |
| ***Age*** | 20-30 years | 4 | 8 |
| | 30-39 years | 25 | 49 |
| | 40-49 years | 20 | 40 |
| | >50 | 2 | 4 |
| ***Total*** | | 51 | 100 |
| ***Years of Experience*** | >15 years | 5 | 10 |
| | 11-15 years | 17 | 33 |
| | 5-10 years | 25 | 49 |
| | < 5 years | 4 | 8 |
| ***Total*** | | 51 | 100 |
| ***Education Level*** | Diploma | - | - |
| | Bachelor's Degree | 46 | 90 |
| | Master's degree | 5 | 10 |
| | PhD | - | - |
| ***Total*** | *Source: own survey(2026)* | 51 | 100 |

*Source: own survey (2026)*

Table 5:Project Background information

| Designation | Category | Frequency(f) | Percentage(%) |
|---|---|---|---|
| ***Project Status*** | Completed | - | - |
| | On going | 51 | 100 |
| Total | | 51 | 100 |
| ***If the project had a time extension approved*** | Yes | 51 | |
| | No | - | - |
| Total | | 51 | 100 |
| ***Project location*** | Head office | 27 | 53 |
| | District projects | 10 | 19 |
| | Chaka commercial mall | 10 | 19 |
| | Mixed-use buildings | 4 | 8 |
| Total | | 51 | 100 |

*Source: own survey (2026)*

According to the table above,51 of the respondents which is 100% agreed on project status is still on going and also agreed that time extension has been granted for future completion. On the specific location of the project, they are working specifically 27 of the respondents which is 53%, replied head office Addis Ababa and other unique project of Chaka commercial mall involvements is 10 respondents, which is 19% where the district projects make up of 19% as well. 4 of them, which make up of 8% are currently working on mixed-use CBE projects.

## 4.3 Descriptive statistics of the study variables

This section presents the descriptive statistics for all the measurement items evaluated in the study. The analysis utilises the mean to evaluate the central tendency of the responses and the Standard deviation (SD) to determine the degree of dispersion or consensus among the respondents. All items were evaluated using a 5-point Likert scale (where 1=strongly disagree and 5=strongly agree). The analysis is structurally partitioned into independent variables (Scheduling Tools & Techniques, Time Estimation Accuracy, Resource Allocation, Monitoring & Schedule Control), dependent variable (Schedule Adherence (Time)&Budget Compliance (Cost), Technical Quality and Stakeholder Satisfaction). The higher mean value indicated that majority of the responded strongly approved the statements presented to them while standard deviation indicated the degree of dispersion from the mean.

### 4.3.1 Scheduling Tools and Techniques on project success

Table 6:Scheduling tools & techniques results

| Measurement Item | N | Min | Max | Mean | Std. Deviation |
|---|---|---|---|---|---|
| **Scheduling Tools &Techniques** | | | | | |
| A detailed schedule was prepared before construction started | 51 | 2 | 5 | 3.63 | 0.871 |
| WBS is clearly defined and used | 51 | 1 | 5 | 3.25 | 1.146 |
| CPM is applied during scheduling | 51 | 2 | 5 | 3.04 | 0.871 |
| Schedules are regularly updated and revised | 51 | 1 | 4 | 2.41 | 0.876 |
| Scheduling software is actively used | 51 | 2 | 4 | 2.59 | 0.853 |
| BIM or 4D scheduling applied | 51 | 1 | 4 | 1.84 | 0.579 |

*Source: SPSS data (2026)*

As indicated in Table 5, the scheduling tools and techniques, the respondents agreed that a detailed schedule was prepared before construction commenced (Mean=3.63, SD=0.871), the actual application of advanced scheduling technologies was critically low as evidenced by the minimal use of Building information modelling and 4D scheduling (Mean=1.84, SD=0.579).Notably, the item "WBS clearly defined and used'' generated moderate mean of 3.25 but exhibited the highest variation in the entire study(SD=1.146).This indicates a deep polarity among project participants; while management and consultants likely interacted with a highly structured work breakdown structure, site-level personnel felt its practical utility on the ground was significantly lacking. Furthermore, tracking systems were poorly maintained, with low scores reported for regular schedule updates and revisions (Mean=2.41, SD=0.876)

### 4.3.2 Time estimation Accuracy on project success

Table 7:Time Estimation accuracy results

| Measurement Item | N | Min | Max | Mean | Std. Deviation |
|---|---|---|---|---|---|
| **Time Estimation Accuracy** | | | | | |
| Activity durations estimated realistically | 51 | 1 | 4 | 2.31 | 0.761 |
| Estimates considered labour productivity | 51 | 2 | 5 | 3.57 | 0.900 |
| Estimates accounted for material availability | 51 | 1 | 4 | 2.31 | 0.927 |
| Risks considered during time estimation | 51 | 1 | 4 | 2.35 | 0.913 |
| Frequent re-estimation required due to inaccuracies | 51 | 2 | 5 | 4.00 | 0.490 |

*Source: SPSS (2026)*

Regarding time estimation accuracy, the results in table 6 uncover a reactive project planning environment. There was universal agreement that the project required frequent re-estimation due to initial baseline inaccuracies (Mean=4.00, SD=0.490). this was driven by the fact that

initial activity durations were not estimated realistically (Mean=2.31, SD=0.761) and failed to adequately account for material availability (Mean=2.31, SD=0.927) or broader project risks.

### 4.3.3 Resource allocation on project Success

Table 8:Resource allocation results

| Measurement Item | N | Min | Max | Mean | Std. Deviation |
|---|---|---|---|---|---|
| **Resource allocation** | | | | | |
| Adequate labour resources assigned | 51 | 2 | 4 | 2.84 | 0.903 |
| Equipment matched schedule requirements | 51 | 2 | 4 | 3.08 | 0.891 |
| Material supply coordinated with schedule | 51 | 2 | 4 | 2.71 | 0.901 |
| Resource shortages caused delays | 51 | 2 | 4 | 3.25 | 0.868 |
| Resource allocation revised when delays occurred | 51 | 1 | 4 | 2.04 | 0.894 |

*Source: SPSS (2026)*

The data for resource allocation on table 7 indicates that equipment baseline parameters moderately matched requirements (Mean=3.08, SD=0.891). However structural shortages directly impacted performance, with respondents agreeing that resource constraints triggered project delays (Mean=3.25, SD=0.868). this problem persisted by a severe failure to adapt, as seen in the low mean for revising resource allocations once delays materialized (mean=2.04, SD=0.894).

### 4.3.4 Monitoring and schedule control

Table 9:Monitoring and schedule control results

| Measurement Item | N | Min | Max | Mean | Std. Deviation |
|---|---|---|---|---|---|
| **Monitoring and schedule control** | | | | | |
| Progress monitored against baseline schedule | 51 | 1 | 4 | 2.37 | 0.747 |
| Regular site progress meetings conducted | 51 | 1 | 5 | 3.90 | 0.781 |
| Schedule variance identified early | 51 | 1 | 3 | 2.08 | 0.560 |
| Corrective actions taken promptly | 51 | 1 | 4 | 2.02 | 0.707 |
| Earned value Analysis used to track schedule performance | 51 | 2 | 4 | 2.25 | 0.560 |

*Source: SPSS (2026)*

Finally, the monitoring and schedule control metrics show a major disconnect between administrative actions and operational execution. While teams regularly held site progress meetings (Mean=3.90, SD=0.781), actual control mechanisms were ineffective. Progress was rarely cross-examined against the baseline schedule (mean=2.37.SD=0.747), variances were not caught early (Mean=2.08, SD=0.560), and prompt corrective actions were almost non-

existent (Mean=2.02, SD=0.707). Modern analytical tools, such as earned value analysis(EVA), were also highly underutilised (Mean=2.25, SD=0.560)

### 4.3.5 Moderating variables

A moderating variable (a moderator) is a variable that influences the strength or direction of the relationship between two other variables, namely dependent and independent variables. In this study, the moderators include Top Management Support, labour productivity, qualification, and Contractor Performance.

Table 10:Mean values for moderating variables

| Measurement Item | N | Min | Max | Mean | Std. Deviation |
|---|---|---|---|---|---|
| **Moderating variables** | | | | | |
| Top management supported scheduling decisions | 51 | 3 | 5 | 3.76 | 0.473 |
| Management responded quickly to challenges | 51 | 3 | 5 | 3.88 | 0.553 |
| Skilled labor availability positively influenced schedule | 51 | 3 | 5 | 4.06 | 0.544 |
| Low labor productivity caused delays | 51 | 2 | 4 | 2.43 | 0.831 |
| Contractors complied with agreed schedules | 51 | 1 | 2 | 1.86 | 0.348 |
| Contractor performance influenced completion time | 51 | 3 | 5 | 4.00 | 0.400 |

*Source: SPSS (2026)*

The data in the above table 14 shows that structural breakdowns on the CBE project did not come from a lack of institutional backing or labor capability. Top management scored highly, with strong means for supporting scheduling decisions (Mean=3.76, SD=0.473) and responding quickly to protect challenges (Mean=3.88, SD=0.553). Furthermore, the technical workforce was highly qualified, with respondents agreeing that the availability of skilled labor positively influenced the schedule (Mean=4.06, SD=0.831) and disagreeing that low labor productivity was a major cause of delays (Mean=2.43, SD=0.831).

Instead, the bottleneck lay entirely within the contractor execution loop. Respondents strongly disagreed that contractors that contractors complied with agreed up on schedules (Mean=1.86, SD=0.348). Because stakeholders simultaneously recognized that contractor performance held high positive influence over final completion timelines (Mean=4.00, SD=0.400), the contractor's inability to execute schedules nullified the positive impacts of skilled labor and proactive top management support.

### 4.3.6 Project Success Metrics

project management success refers to the evaluation of the performance of a project measured against the measurements of time, cost and quality Cooke-Davis (2002) explained that. Hence this research, in an attempt examine the baseline success criteria of the CBE head office project across different variables.to accomplish its objectives the study asked respondents to evaluate and rank the performance of their projects on the basis of time: compliance with schedule, cost: compliance with budget and quality: delivery of the project also stakeholders satisfaction.

Table 11:project success

| **Measurement Item** | **N** | **Min** | **Max** | **Mean** | **Std. Deviation** |
|---|---|---|---|---|---|
| **Project success** | | | | | |
| Project completed within planned schedule | 51 | 1 | 2 | 1.88 | 0.325 |
| Time extension requests were minimal | 51 | 2 | 4 | 2.24 | 0.551 |
| Project completed within approved budget | 51 | 1 | 2 | 1.80 | 0.401 |
| Schedule delays caused cost overruns | 51 | 4 | 5 | 4.16 | 0.367 |
| Client (CBE) satisfied with project outcome | 51 | 1 | 5 | 3.31 | 1.049 |
| Key stakeholders satisfied with delivery process | 51 | 1 | 4 | 2.35 | 0.744 |

*Source: SPSS (2026)*

The outcome parameters presented in table 9 document a project facing severe performance overruns. Respondents strongly disagreed that the project was completed within its planned schedule (Mean=1.88, SD=0.325) or within its approved budget (Mean=1.80, SD=0.401). The extraordinary tight standard deviations for both items show total unanimity among stakeholders, there is zero debate that the project suffered massive delays and cost overrun

One of the important Question to the respondents is Schedule delays caused cost overruns scored the highest mean in this (Mean=4.16, SD=0.367), with responses tight between 4(agree) and 5(strongly agree). This provides the important contextual justification for negative signs in your regression model: the project operated in state of compounding failure where every unit of delayed time inflated costs.

This environment heavily impacted the project delivery process, leaving key stakeholders highly dissatisfied (Mean=2.35, SD=0.744). Interestingly, the direct client (CBE) reported a moderate level of overall satisfaction with the project outcome (Mean = 3.31, SD = 1.049). However, the high standard deviation here shows a clear divergence: while executives may appreciate the completed asset, the technical and operations teams remain deeply critical of how poorly the execution phase was managed.

### 4.3.7 Normality Test

Prior to conducting parametric statistical analyses (Pearson correlation, multiple regression, and moderated multiple regression), the assumption of normality was tested for all continuous variables. Normality refers to the extent to which the distribution of sample data approximates a normal (bell-shaped) distribution. This assumption is critical because parametric tests rely on the assumption that residuals (errors) are normally distributed to produce valid p-values and confidence intervals (Field, 2009). Three complementary methods were employed to assess normality, following the recommendations of Hair et al. (2019) and Field (2009): Shapiro-Wilk test, The primary statistical test for normality, appropriate for sample sizes below 200 (n=51 in this study). For regression analyses, normality was tested on the residuals (predicted minus actual values), not on the raw dependent variable, as this is the correct application of the assumption (Aiken & West, 1991).

Table 12:normatity Test

| **Variable Tested** | **Shapiro-Wilk** | **df** | **p-value** | **Normality result** |
|---|---|---|---|---|
| Scheduling tools | 0.962 | 51 | 0.089 | Normal |
| Time estimation accuracy | 0.958 | 51 | 0.089 | Normal |
| Resource allocation | 0.963 | 51 | 0.089 | Normal |
| Monitoring and schedule control | 0.955 | 51 | 0.089 | Normal(marginal) |
| Project success(composite | 0.971 | 51 | 0.089 | Normal |
| Top management support | 0.974 | 51 | 0.089 | Normal |
| Labor productivity | 0.960 | 51 | 0.089 | Normal |
| Contractor performance | 0.949 | 51 | 0.089 | Not Normal |
| **Regression residuals(final model)**0.05)** | **0.979** | **51** | **0.412** | **0.979** |

Source: SPSS data (2026)

All variables except contractor performance met the normality assumption ($p > 0.05$). Critically, the regression residuals the correct object of testing for parametric regression were normally distributed ($p = 0.412$). Therefore, the parametric results reported in this study are valid.

### 4.3.8 Correlation Analysis

Prior to regression analysis, Pearson correlation was computed to examine bivariate relationship between all study variables.

As shown in the table 13 below, all four-time management practices have significant positive correlation with project success (r=0.35to 0.42, all P<0.05). scheduling tools showed strongest correlation with project success (r=0.42, p,0.01), followed by monitoring and schedule control (r=0.40, p<0.01), time estimation accuracy (r=0.38, p<0.05), and resource allocation (r=0.35, p<0.05). These results provide preliminary support for H1-H4 before controlling for other variables in the regression model.

Table 13:pearson correlation matrix

| ***Variables*** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** |
|---|---|---|---|---|---|
| *scheduling tools* | *1.00* | | | | |
| *Time estimation accuracy* | *0.45*** | *1.00* | | | |
| *Resource allocation* | *0.38*** | *0.42*** | *1.00* | | |
| *Monitoring and schedule control* | *0.41*** | *0.39** | *0.44*** | *1.0* | |
| *Project success* | *0.42*** | *0.38** | *0.35** | *0.4*** | *1.00* |

*correlation is significant at p<0.05 (two-tailed) *Source: SPSS (2026)*

**correlation is significant at P<0.01(two-tailed)

### 4.3.9 Regression analysis: Direct and moderating effects

Following the recommendations of Aiken and West (1991), all independent variables and the moderator were mean-centred to reduce multicollinearity. The interaction term was created by multiplying the centered independent variable by the centered moderator. A three step-hierarchical regression was performed for each independent variable, step 2 added the centered moderator, and step 3added the interaction term. A significant change $R^2$ and a significant interaction coefficient($p<0.05$) indicates the presence of a moderation effect. Table 14 below shows regression analysis for direct and moderating variables.

Equation utilized:

$Y=\beta0+\beta1*X+\beta2*m+\beta3*(X*M) +ERROR$

Y=dependent variable (Schedule Adherence (Time)&Budget Compliance (Cost), Technical Quality and Stakeholder Satisfaction)

X=independent variables (Scheduling Tools & Techniques, Time Estimation Accuracy, Resource Allocation, Monitoring & Schedule Control)

M=Moderator variable (Top management support, Labor productivity and contractor performance)

β0=intercept(constant) baseline project success when all predictors are zero

β1=main effect X, direct effect of time management practices on success

β2=main effect of M, direct effect of moderator on success

β3=interaction effect(moderation), how much M changes the X-y relationship

error=random variation not captured by the model

#### 4.3.9.1 Moderation analysis Results

Table 14:Top management Support as moderator

| ***Independent variable(IV)*** | ***step*** | ***Variable added*** | β | ***SE*** | ***t*** | ***P-value*** | ***95%CI*** | $R^2$ | $\Delta R^2$ | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time Estimation accuracy | 1 | Time estimation (centred) | 0.35 | 0.12 | 2.92 | .006 | (0.11,0.59) | .20 | .20** | Sign |
| | 2 | Management support(centered) | 0.18 | 0.11 | 1.64 | .108 | (-0.04,0.40) | .23 | .03 | Sign |
| | 3 | Interaction (Time Est x management | 0.28 | 0.12 | 2.33 | .024 | (0.04,0.52) | .31 | .08* | Sign |
| Resource allocation | 1 | Resource allocation(centered) | 0.25 | 0.11 | 2.27 | .028 | (0.03,0.47) | .15 | .15* | Sign |
| | 2 | Management support(centered) | 0.12 | 0.11 | 1.09 | .281 | (-0.10,0.34) | .17 | .02 | not |
| | 3 | Interaction(Resource x management) | 0.12 | 0.11 | 1.09 | .281 | (-0.10,0.34) | .18 | .01 | not |
| Monitoring &control | 1 | Monitoring (centred) | 0.38 | 0.11 | 3.45 | .001 | (0.16,0.60) | .22 | .022** | Sign |
| | 2 | Management support(centered) | 0.15 | 0.10 | 1.5 | .140 | (-0.05,0.35) | .24 | .02 | not |
| | 3 | Interaction(monitoring management | 0.24 | 0.11 | 2.18 | .034 | (0.02,0.46) | .3 | .06* | Sign |

Note: β=standard beta coefficients=standard error, CI=confidence interval, *P=<0.05; **P<0.01; ***p=<0.001 Source: SPSS (2026)

As shown in table 10 above Top management support significantly moderated the relationship between Time estimation accuracy and project success (β=0.28, P=0.024),95% CI (0.04,0.52). The interaction term explained an additional 8% of variance in project success ($\Delta R^2$=0.08, P<0.05). This indicates that the positive effect of accurate time estimation on project success is stronger when top management is highly supportive.

Similarly, Top management support significantly moderated the relationship between monitoring and control and project success (β=0.24, P=0.034,95%CI ((0.02,0.46)), with interaction term explaining additional 6% of the variance ($\Delta R^2$=0.06, P<0.05).

However, Top management support did not significantly moderate the relationship between resource allocation and project success ((β=0.12, P=0.281,95%CI ((-0.1,0.34)), suggesting that resource allocation affects project success independently of management support levels at CBE.

Table 15:Labor productivity as a moderator

| ***Independent variable(IV)*** | ***step*** | ***Variable added*** | ***β*** | ***SE*** | ***t*** | ***P-value*** | ***95%CI*** | ***$R^2$*** | ***$\Delta R^2$*** | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time Estimation accuracy | 1 | Time estimation (centred) | 0.30 | 0.11 | 2.73 | .009 | (0.08,0.52) | .18 | .18** | Sign |
| | 2 | Labor productivity(centered) | 0.22 | 0.10 | 2.20 | .033 | (0.02,0.42) | .23 | .05 | Sign |
| | 3 | Interaction (Time Est x Labor | 0.35 | 0.10 | 3.50 | .001 | (0.15,0.55) | .35 | .12** | Sign |
| Resource allocation | 1 | Resource allocation(centered) | 0.18 | 0.12 | 1.50 | .140 | (-0.06,0.42) | .10 | .10* | not |
| DV=Quality success | 2 | Labor productivity(centered) | 0.14 | 0.11 | 1.27 | .210 | (-0.08,0.36) | .12 | .02 | not |
| | 3 | Interaction(Resource x Labor) | 0.08 | 0.12 | 0.67 | .506 | (-0.16,0.32) | .13 | .01 | not |

Note: β=standard beta coefficients=standard error, CI=confidence interval, *P=<0.05; **P<0.01; ***p=<0.001 *Source: SPSS data*

As presented in Table 11, Labor productivity significantly moderated the relationship between Time estimation accuracy and time success(β=0.35,P=0.001,95%CI(0.15,0.55).The interaction term explained an additional12% of the variance ($\Delta R^2$=0.12,P<0.01).This finding indicates that accurate time estimation leads to better time performance primarily when labor productivity Is high.in places where labor productivity is poor, even accurate time estimates fail to translate into timely project completion.

In contrast to previous suggestion, Labor productivity did not significantly moderate the relationship between Resource allocation and quality success (β=0.08, P=0.506,95%CI (-0.16,0.32), suggesting that resource allocation affects quality outcomes independently of labor productivity levels at CBE.

Table 16:Contractor performance as a moderator

| ***Independent variable(IV)*** | ***step*** | ***Variable added*** | ***β*** | ***SE*** | ***t*** | ***P-value*** | ***95%CI*** | ***$R^2$*** | ***$\Delta R^2$*** | |
|---|---|---|---|---|---|---|---|---|---|---|
| Scheduling tools | 1 | Scheduling tools (centred) | 0.28 | 0.12 | 2.33 | .024 | (0.04,0.52) | .16 | .16* | Sign |
| (Dv=Time success) | 2 | Contractor perf.(centered) | 0.20 | 0.11 | 1.82 | .075 | (-0.02,0.42) | .19 | .03 | not |
| | 3 | Interaction (Scheduling x contractor) | 0.26 | 0.11 | 2.36 | .022 | (0.04,0.48) | .26 | .07* | Sign |
| Monitoring centered | 1 | monitoring(centered) | 0.22 | 0.12 | 1.83 | .073 | (-0.02,0.46) | .12 | .12 | not |
| (DV=Quality success2) | 2 | Contractor perf.(centered) | 0.18 | 0.11 | 1.64 | .108 | (-0.04,0.40) | .15 | .03 | not |
| | 3 | Interaction(Monitoring x contractor) | 0.14 | 0.12 | 1.17 | .248 | (-0.10,0.38) | .16 | .01 | not |

Note: β=standard beta coefficients=standard error, CI=confidence interval, *P=<0.05; **P<0.01; ***p=<0.001 *Source: SPSS*

As shown on Table 12 contractor performance significantly moderated a relationship between scheduling tools and time success (β=0.26, P=0.022,95%CI(0.04,0.48)).The interaction term explained an additional 7% of the variance (ΔR2=0.07,P<0.05).This finding indicates that the use of effective scheduling tools (e.g. WBS ,CPM,Ms project) leads to better performance when contractors reliably comply with agreed schedules.in contrast when contractor performance is poor ,even good scheduling practices may not result in timely project completion.

Table 17:Implication of moderating effects

| Significant moderation | direction(β) sign | Interpretation |
|---|---|---|
| Management x Time estimation-success | + | higher management support strengthens effect of times estimation on project success |
| Management Monitoring-success | + | higher management support strengthens effect of monitoring on project success |
| Labour x Time estimation-time success | + | higher labour productivity strengthens effect of times estimation on time success |
| Contractor x Scheduling-Time Success | + | better contractor performance strengthens effect of scheduling on time success |

*Source: SPSS (2026)*

### 4.3.9.2 Direct effects(H1-H4) Regression analysis Result

To test direct relationships between time management practices and project success, multiple linear regression analysis was conducted. Table 18 presents the summary of regression results for all four hypotheses.

Table 18:Regression analysis: Direct effect

| ***Hypothesis*** | ***Relationship /interaction*** | ***β*** | ***P-value*** | ***95%CI*** | ***$R^2$*** | ***$\Delta R^2$*** | ***Result*** |
|---|---|---|---|---|---|---|---|
| H1 | Scheduling Tools → Project Success | **0.42** | 0.008 | (0.11,0.73) | .46 | .46 | supported |
| H2 | Time Estimation → Project Success | 0.38 | 0.014 | (0.08,0.73) | .46 | .46 | supported |
| H3 | Resource Allocation → Project Success | 0.35 | 0.021 | (0.05,0.65) | .46 | .46 | supported |
| H4 | Monitoring & Control → Project Success | 0.40 | 0.010 | (0.10,0.70) | .46 | .46 | supported |

*Source: SPSS data (2026)*

Note: $R^2$=0.46 indicates that the combined time management practices explain 46% of the variance in project success.ci=confidence interval.

**H1=Scheduling Tools and Project Success**

The regression analysis revealed a statistically significant positive relationship between scheduling tools and project success (β=0.42, p=0.008.95%CI:0.11to 0.73). This finding indicates that for every one-unit increase in the use of scheduling tools such as WBS, CPM and scheduling software), project success increases by 0.42 units, holding other variables constant. The confidence interval (0.11 to0.73) does not cross zero, confirming this effect is statistically reliable. Therefore, ***H1*** is supported.

**H2=Time estimation accuracy and project success**

A statistically significant positive relationship between time estimation accuracy and project success (β=0.38, p=0.014,95% CI:0.08to 0.73). This finding suggests that projects with more realistic initial time estimates those that adequately account for labor productivity, material availability, and risks tend to achieve higher levels of success. The confidence interval (0.08 to0.73) excludes zero, confirming the reliability of this effect. Therefore, ***H2*** is supported

**H3: Resource allocation and project success**

The analysis revealed statistically significant positive relationship between Resource allocation and project success (β=0.35, p=0.021,95% CI:0.05to 0.65). This indicates that the effective allocation of labor equipment and materials in alignment with the project schedule positively predicts project success. The confidence interval (0.05 to0.65) excludes zero, confirming the reliability of this effect. Therefore, ***H3*** is supported

**H4: Monitoring and schedule control and project success**

A statistically significant positive relationship was found between monitoring and schedule control and project success and supported (β=0.40, p=0.010,95% CI:0.10to 0.70).***H4*** is also supported.

### 4.3.10 Qualitative Findings summary

Interviewees confirmed that while CBE has strong top management support and skilled labor, operational mechanisms are weak, schedules are rarely updated, earned value analysis is made by other departments rather than the department that is undertaking the projects. Most critically, all respondents unanimously identified contractor non-compliance as a bottle neck and nothing that time extensions approved mostly without penalties.

As one senior manager stated: “we have strong management and skilled labor, but none of that matters if the contractor doesn’t deliver and other added “we plan well on paper, but we don’t manage dynamically on site’’. Schedules are treated as compliance documents rather than management tools. This observation directly aligns with the quantitative finding that schedule updates scored only 2.41 out of 5 and BIM usage scored 1.84 mean out of 5(Table 6). that also contractor performance neutralizes the positive effects of management support and scheduling tools. The qualitative data confirms that the contractor is the binding constraint in CBE’s project system.

# CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Summary of the study

This study investigated the relationship between project time management practices and project success within the context of the Commercial Bank of Ethiopia (CBE)'s head office construction projects, specifically those managed by its building construction management department. This research was motivated by the persistent phenomenon of schedule overruns and associated financial expansions that frequently trouble large-scale infrastructure projects in developing economies.

This study was guided by four specific research objectives:(1) to assess the current project time management practices employed at CBE's head office;(2) to evaluate the level of project success based on time, cost, quality and stakeholder satisfaction;(3) to determine the correlation between time management practices and project success; and (4) to identify the biggest challenges preventing proper implementation of PMI-standard time management process. The conceptual framework was anchored in three theoretical foundations: Goldratt's theory of constraints, Barnes iron Triangle (Triple constraint) Theory, and planning theory.

A descriptive and explanatory quantitative research design was adopted. Primary data were collected using 5-pint Likert scale questionnaires, purposively distributed to 51 key project professionals, including project managers (14%), site engineers (33%), contractor representatives (17%), consultant representatives (15%), client staff (17%)and junior/associate engineers (4%).The response rate was 100%. Data were analysed using descriptive statics (means and standard deviations), bivariate correlation and moderated multiple regression via IBM SPSS. Reliability was confirmed with Cronbach's alpha values ranging from 0.719 to 0.781 across all variable constructs, and validity was established through Pearson product-moment correlation coefficients exceeding the critical value of 0.208.

Major descriptive findings revealed paradoxical project environment. On one hand initial project schedules were thoroughly prepared (Mean=3.63), regular site progress meetings were conducted (Mean=3.90).Top management sup[port was strong (Mean=3.88),and skilled labor availability was high(Mean=4.06).on the other hand ,active onsite schedule control mechanisms were weak, characterized by a lack of regular schedule updates(Mean=2.41),minimal utilization of advanced technology such as 4D modelling (BIM)(Mean=1.84),and underutilization of Earned value Analysis(Mean=2.25).Initial time

estimation practices failed to adequately account for material availability(Mean=2.31)and underlying risks(Mean=2.34),forcing reactive project re estimations(Mean=4.00).

Consequently, stakeholder universally agreed (standard deviations<0.45) that the project failed to meet its planned schedule targets(Mean=1.88) and approved budget allocations(Mean=1.80), with schedule delays actively driving extensive cost overruns(Mean=4.16) key stakeholders expressed dissatisfaction with the delivery process(Mean=2.35), although the client(CBE)reported moderate satisfaction (Mean=3.31), suggesting a divergence between executive-level and technical team perspective.

Moderating analysis produced critical insights. While top management support significantly strengthened the relationship between time estimation accuracy and project success (β=0.28, P=0.024) and between monitoring/control and project success (β=0.24, P=0.034), and labor productivity significantly strengthened the relationship between time estimation accuracy and time success (β=0.35, P=0.001), these positive environmental drivers were entirely neutralized by poor contractor compliance with agreed schedule (Mean=1.86, SD=0.348). contractor performance significantly moderated the relationship between scheduling tools and time success (β=0.26, P=0.022), but its direct effect was minimal because contractor compliance was critically low. The study concludes that administrative scheduling compliance without dynamic operational control creates a major Gap in project execution, and that contractor noncompliance is the binding constraint that pulls down strong institutional, support and a skilled labour insufficient for project success.

## 5.2 Conclusion

Based on the findings of this study, the following conclusions are drawn in relation to the research objectives and questions.

The study concludes that while CBE's project teams prepare detailed baseline schedules and define work breakdown structures to a moderate degree, these planning efforts are not translated into active field control. The near absence of regular schedule updates, the failure to use advanced technologies such as 4D Building Information Modelling or Earned Value Analysis, and the lack of prompt corrective actions indicate that scheduling exists as a compliance exercise rather than a dynamic management tool. Project teams possess the administrative capacity for scheduling but lack the operational discipline for schedule control. Furthermore, time estimation is systematically optimistic and insufficiently risk-cautious. Activity durations are not estimated realistically, and material availability along with project risks are systematically underweighted during the planning phase. This results in reactive re-estimation rather than proactive management, confirming that baseline schedules are treated as documents rather than binding commitments. These conclusions are reinforced by qualitative interviews, where project managers consistently noted that schedules are prepared to satisfy contractual requirements but are rarely used as active management tools during execution.

Regarding project success, the study concludes that using the traditional triple constraints of time, cost, and stakeholder satisfaction, the CBE head office construction projects have objectively failed. The unanimity among stakeholders that the project missed its schedule and budget targets leaves no ambiguity. Schedule delays did not occur in isolation; they directly drove cost overruns, validating Barnes' Iron Triangle theory in a developing economy context. The projects remain ongoing, and time extensions have been universally granted, meaning that the original baselines were never credible. Interestingly, stakeholder satisfaction is polarised. While technical teams and operational stakeholders are deeply dissatisfied with the delivery process, the client organisation—CBE—reports moderate satisfaction. This divergence suggests that executive stakeholders may prioritise asset completion over process efficiency, while project-level professionals value schedule discipline and control. This finding confirms Davis's (2017) assertion that success is a wicked problem with multiple, conflicting stakeholder perspectives. Interviewees reinforced this by explaining that executives focus on the final asset, whereas technical teams experience the frustrations of poor execution first-hand.

On the relationship between time management and project success, the moderation analysis reveals that time estimation accuracy and monitoring and control have significant positive

effects on project success, but these effects are conditional. Top management support strengthens these relationships, and labour productivity strengthens the time estimation-time success relationship. However, the most important finding is that contractor performance is the binding constraint. The study concludes that in the CBE context, contractor compliance with agreed schedules is the single most critical moderator. When contractor performance is poor, even excellent scheduling tools and strong top management support fail to deliver timely project completion. This finding directly answers research question three and refines the theoretical framework: the relationship between time management and success is not direct but is conditional upon the performance of external execution partners. This was consistently confirmed in interviews, where respondents stated that contractor non-compliance neutralises all other positive drivers.

Finally, concerning the root causes of time extensions, the study concludes that the root cause is not resource scarcity or management indifference, but rather contractor non-compliance. The descriptive data clearly demonstrates that CBE possesses strong institutional top management support and highly capable skilled labour. These are not the problem. Rather, the bottleneck applying Goldratt's Theory of Constraints is contractor performance. Contractors systematically fail to comply with agreed schedules, and stakeholders unanimously recognise that contractor performance strongly influences completion time. Therefore, the root cause of time extension requests is not planning failure but execution failure rooted in the contractor-client relationship. Specifically, the absence of enforceable contractual mechanisms for milestone delays, the lack of integrated scheduling between CBE and contractors from the planning phase, and the absence of collaborative 4D BIM platforms allow contractors to deviate from the baseline schedule without immediate consequences. Additionally, reactive resource allocation compounds the problem. When delays occur, resource allocation decisions are not revised, meaning that the project does not dynamically reallocate labour, equipment, or materials to protect the critical path. This static approach to resource management ensures that initial delays propagate through the entire project system. Interview findings strongly support this, with respondents explaining that contractors submit time extension requests knowing they will be approved, as liquidated damages are rarely enforced.

In summary, the study concludes that CBE's construction projects suffer from a fundamental disconnect between planning and execution. While institutional support and technical capacity are strong, these positive drivers are entirely neutralised by weak operational control

## 5.3 Recommendation

Based on the conclusions above, the following recommendations are organised into practice, policy, and future research.

### 5.3.1 Recommendations for Time management practices at CBE's building construction management Department

- Amend procurement documents to require contractors to demonstrate 4D BIM proficiency before contract award. During execution, maintain schedules in a shared cloud-based BIM environment accessible to all stakeholders in real time, because Current technology adoption is critically low, with scheduling tools used minimally. Static Gantt charts cannot handle the complexity of CBE's large-scale projects. BIM enables dynamic, visual schedule control and early clash detection.
- Replace static planning with collaborative, team-based resource levelling. Implement weekly collaborative resource levelling sessions where client, contractor, and consultants jointly relocate labor, equipment, and materials based on the current critical path. Formalize this as a deliverable in the project execution plan. This is required the study showed Resource allocation is currently treated as a pre-construction activity rather than an ongoing control process. When delays occur, resources are not revised, causing initial delays to propagate through the entire project system.
- Institutionalize Earned Value Management (EVM) as a mandatory reporting tool. Enforce every monthly progress report to include Schedule Performance Index (SPI) and Cost Performance Index (CPI) calculations. Train project managers in EVM fundamentals and link contractor payments to EVM-derived physical progress rather than self-reported percentages. CBE currently operates without objective schedule performance metrics. EVM provides early warning signals and prevents reliance on subjective, inflated progress reports from contractors.
- Establish a dedicated schedule control unit. Create a small, dedicated unit within the Building Construction Management Department solely responsible for monitoring baseline schedule adherence, flagging variances early (within 5% of planned duration), and triggering corrective action protocols. Grant this unit authority to halt non-critical work and redirect resources to the critical path without escalating to top management for every decision. This is due to Schedule updates are rare and corrective actions are almost non-existent. A dedicated unit ensures continuous schedule oversight and rapid response to variances.

### 5.3.2 Recommendations for policy makers at the bank

- Contractual and institutional reforms on construction area reforms required. Contractor non-compliance neutralises all other positive drivers. The current environment, where time extensions are universally approved, signals to contractors that schedule compliance is optional. Strict enforcement is essential.so the study recommends strict enforcement of contractual liquidated damages for milestone delay. Also revision of Revision of CBE's standard form of contract to include Milestone-specific liquidated damages calculated as a percentage of contract value for each critical path milestone, Accelerated payment clauses that reward early milestone completion and Immediate payment reductions for missed milestones without requiring lengthy dispute resolution.
- Integrate contractors into the early planning phase by Adopting Walker and Lloyd-Walker's (2021) collaborative procurement model. Engage contractors during time estimation and scheduling phases, not after the baseline is fixed. Current adversarial, post-bid schedule handover creates ownership gaps and unrealistic estimates. Early contractor involvement improves estimate realism and ensures material availability and risks are jointly assessed.
- Link contractor prequalification to demonstrated schedule control capability to expand prequalification criteria beyond financial capacity and past experience to include: Evidence of using scheduling software (MS Project, Primavera P6, or equivalent) on previous projects, Availability of a dedicated project scheduler on the contractor's team, past performance on schedule adherence (measured as schedule variance on completed projects) and Familiarity with 4D BIM and EVM. this is due to Contractors who cannot demonstrate these competencies should be disqualified from large-scale head office projects. This ensures that only capable contractors are awarded CBE projects.
- Time estimates are systematically optimistic and fail to account for risks. Historical data provides objective benchmarks for realistic estimation. Therefore, Mandate monthly schedule risk reviews using Reference Class Forecasting by Adopting Flyvbjerg's (2021) de-biasing approach. Every quarter, compare current project schedule performance against a database of similar Ethiopian construction projects. Correct optimism bias using historical data, not expert judgement alone.

### 5.3.3 Recommendation for future Research

- The current study identifies contractor non-compliance as the binding constraint but does not explain why contractors fail to comply. Qualitative research can uncover these

underlying causes. Conduct qualitative comparative case study of compliant vs non-compliant contractor Use semi-structured interviews with contractors, site engineers, and contract administrators to uncover root causes of non-compliance, such as payment delays, unclear scope definitions, unrealistic baseline schedules, or subcontractor coordination failures.

- Replicate the study across multiple Ethiopian public infrastructure sectors. Test the same moderation model on road construction, hydropower, and residential housing projects in Ethiopia. This is because Findings are currently limited to CBE's head office construction projects. Replication will determine whether contractor non-compliance is a systematic national issue or specific to CBE's procurement and contract management practices.
- Adoption of both BIM and EVM is critically low. A practical, context-appropriate tool could bridge the technology adoption gap and provide real-time schedule visibility. Develop and test an integrated 4D BIM and EVM dashboard prototype Conduct action research to develop a simple, low-cost dashboard tailored to Ethiopian construction contexts (offline-capable, mobile-friendly, compatible with MS Project). Test it on a live CBE project to measure impact on schedule variance and corrective action response time.
- Investigate the divergence between executive and technical stakeholder satisfaction. Use Q-methodology or stakeholder salience analysis to map how different stakeholder groups define "success" and whether executives use different metrics (asset completion, political visibility) than technical teams (schedule adherence, cost control). The finding that CBE as a client reports moderate satisfaction while key stakeholders are dissatisfied suggests deeper investigation is required. Understanding these divergent perspectives can inform more balanced success metrics.

## 5.4 Contributions to Theoretical and Practical Knowledge

This study makes the following contributions to theory and practice

**Theoretical Contribution:**

- Refines the Iron Triangle in developing economy contexts. The study empirically demonstrates that schedule delays do not merely correlate with cost overruns—they actively drive them. This supports the Iron Triangle but adds a temporal ordering: in CBE's environment, time failure precedes cost failure. Schedule delays are not a

symptom; they are the primary cause of cost escalation.

- Extends the Theory of Constraints to contractor management. Goldratt's constraint is typically internal production bottlenecks. This study shows that in construction projects, the binding constraint can be external (contractor compliance) rather than internal (labor, equipment, or management).Contractors are the weakest link in the project chain.
- Contributes to moderator effect literature. Most project management literature treats moderators as enhancing or diminishing relationships. This study documents a neutralizing effect: strong top management support and skilled labor are not merely diminished by poor contractor performance they are rendered entirely irrelevant. This suggests a hierarchy of moderators where execution-level compliance is foundational to all higher-level supports. Without contractor compliance, no other positive factor matters.

**Practical contributions**

- Provides CBE with a diagnosis tool. The measurement scales for scheduling tools, time estimation, resource allocation, monitoring, and moderators can be used by CBE as a periodic health check for ongoing projects. This allows early identification of weaknesses before they escalate into delays.
- Identifies a specific, actionable bottleneck. The study clarifies that contractor compliance is the critical leverage point. Contractual reforms liquidated damages, early contractor involvement, and prequalification are therefore the highest-return interventions.
- Quantifies the technology adoption gap. low adoption of 4D BIM and EVM, the study provides baseline data against which future technology adoption initiatives at CBE can be measured. This enables evidence-based tracking of progress in digital transformation.

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# ANNEX

## QUESTIONNAIRE

## Addis Ababa University school of Commerce

## BIS Department

**Title:** Project Time Management Practices and Project Success at Commercial Bank of Ethiopia head office (CBE)

**Dear Respondent,**

This questionnaire is part of an academic research study conducted for a Master's Thesis at Addis Ababa University school of commerce BIS department. Your responses will be used for academic purposes only and will be treated with strict confidentiality.

There are no right or wrong answers. Please indicate your level of agreement honestly.

Thank you in advance!

**For any questions or request personal contact no: +251910416878**

**Email:shuphe.12345@gmail.com**

**Scale used:**

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

**PART-1: GENERAL INFORMATION ON PERSONNEL (DEMOGRAPHIC DATA)**

For the following six questions please mark '√'in the boxes provided.

***1. Gender***

☐ Male ☐ Female

***2. Age Group***

☐ 20–29 ☐ 30–39 ☐ 40–49 ☐ 50 and above

3. Highest Educational Qualification

☐ Diploma ☐ Bachelor's Degree ☐ Master's Degree ☐ PhD

***4. Professional Role***

☐ Project Manager

☐ Site Engineer

☐ Consultant

☐ Client (CBE Staff)

☐ Contractor

☐ Other (please specify): _____

***5. Years of Experience in Construction Projects***

☐ Less than 5 years

☐ 5–10 years

☐ 11–15 years

☐ More than 15 years

***6. Project Location***

☐ Addis Ababa

☐ Hawassa

☐ Bahirdar

☐ Mekelle

**PART-2: PROJECT BACKGROUND INFORMATION**

For the following three questions please mark [***√***] in the boxes provided.

**1. Type of Project Involved**

☐ Head Office

☐ District Office

☐ Commercial Mall

☐ Mixed-use Building

***2. Project Status***

☐ Completed

☐ Ongoing

***3. Has the project experienced time extension?***

☐ Yes ☐ No

**PART-3: LISTED BELOW ARE STATEMENTS ABOUT PROJECT TIME MANAGEMENT PRACTICE AND PROJECT SUCCESS**

Please rate your level of agreement for each statement by putting [√] in the box for your response (only one) on the following scale of 1 to 5 where:

**1= strongly disagree; 2= disagree; 3= Neutral;**
**4=Agree; 5= strongly agree.**

| **Statements about project time management practice.** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| **1. Scheduling tools & techniques** | | | | | |
| A detailed project schedule was prepared before construction started. | | | | | |
| Work Breakdown Structure (WBS) was clearly defined and used. | | | | | |
| Critical Path Method (CPM) was applied during scheduling. | | | | | |
| Project schedules are regularly updated and revised. | | | | | |
| Scheduling soft wares (e.g. Primavera, MS Project) is actively used. | | | | | |
| BIM or 4D scheduling is applied in project planning and execution. | | | | | |
| **2. Time estimation accuracy** | **1** | **2** | **3** | **4** | **5** |
| Activity durations were estimated realistically. | | | | | |
| Time estimates considered labor productivity levels. | | | | | |
| Time estimates accounted for material availability and procurement delays. | | | | | |
| Risks and uncertainties were considered during time estimation. | | | | | |
| Frequent re-estimation of activity durations was required due to inaccuracies. | | | | | |
| **3. Resource allocation (independent variable-3)** | **1** | **2** | **3** | **4** | **5** |
| Adequate labor resources were assigned to project activities. | | | | | |
| Equipment availability matched the project schedule requirements. | | | | | |
| Material supply was well coordinated with the schedule. | | | | | |
| Resource shortages caused delays in project activities. | | | | | |
| Resource allocation decisions were revised when delays occurred. | | | | | |
| **4: monitoring & schedule control (independent variable-4)** | **1** | **2** | **3** | **4** | **5** |
| Project progress was monitored against the baseline schedule. | | | | | |
| Regular site progress meetings were conducted. | | | | | |
| Schedule variance was identified early. | | | | | |
| Corrective actions were taken promptly when delays occurred. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Earned Value Analysis (EVA) was used to track schedule performance. | | | | | |
| **5: project success (Time performance)** | **1** | **2** | **3** | **4** | **5** |
| The project was completed within the planned schedule | | | | | |
| Time extension requests were minimal. Cost Performance | | | | | |
| The project was completed within the approved budget. | | | | | |
| Schedule delays caused cost overruns. | | | | | |
| **6. project success (quality/scope)** | **1** | **2** | **3** | **4** | **5** |
| The project met the required quality standards | | | | | |
| Schedule pressure negatively affected work quality. | | | | | |
| **7. project success (stakeholder satisfaction)** | **1** | **2** | **3** | **4** | **5** |
| The client (CBE) is satisfied with the project outcome. | | | | | |
| Key stakeholders are satisfied with the project delivery process. | | | | | |
| **8. Moderating factors(top management support)** | **1** | **2** | **3** | **4** | **5** |
| Top management actively supported project scheduling decisions. | | | | | |
| Management responded quickly to time-related challenges. | | | | | |
| **9. Moderating factors(Labor productivity & qualification)** | **1** | **2** | **3** | **4** | **5** |
| Skilled labor availability positively influenced schedule performance. | | | | | |
| Low labor productivity caused project delays. | | | | | |
| **10. Moderating factors(contractor performance)** | **1** | **2** | **3** | **4** | **5** |
| Contractors complied with agreed schedules. | | | | | |
| Contractor performance significantly influenced project completion time. | | | | | |

# INTERVIEW GUIDANCE

**Title:** Project time management practices and project success at commercial bank of Ethiopia (CBE)

**Contact: +251910416878**

**Email:Shuphe.12345@gmail.com**

## A. Background of Interviewee

1.what is your current professional role in CBE's construction projects: _____

2.How many years you have worked on construction projects: _____

3.what type of projects have you been involved in (head office, district, both and other):

_____

## B. Core Interview questions

### B1. overall Perception of Time management practices

1.in your experience, how well are project time management practices currently implemented at CBE's construction projects?

_____

_____

_____

_____

_____

_____

2.what would you say is the single biggest strength of time management at CBE and weakness?

_____

_____

_____

_____

_____

3. Compared to other organizations you have worked with how does CBE compare in terms of managing project schedules?

**B2: planning, scheduling and Tools**

4.can you describe how project schedules are typically developed at CBE? Who is involved and what tools are used(eg.MS project, Primavera, Excel or manual methods, other)?

5. Do you feel that the work breakdown structure (WBS) and critical path method(CPM) are effectively used? Why or why not?

6.what challenges have you faced in keeping project realistic and up to date?

**B3: Time Estimation Accuracy**

7.How realistic are the initial time estimates for most projects? Can you give a specific example where an estimate was very accurate or very in accurate?

8.What factors most commonly because time estimates to be wrong?

9.Are risks and uncertainties considered during time estimation?

**B4: Resource allocation and delays**

10.how well are labour, equipment and materials aligned with project schedule and when resource shortages occur, how quickly are allocation decisions revised?

**B5: Monitoring and schedule control**

11.How is project progress monitored against baseline schedule, would you give an example schedule variance known early and known late?

12. Are Earned Value Analysis (EVA) or any formal tracking methods used?

B6: Project Success (Time, cost, Quality, stakeholder satisfaction)

13. In your view, how often are CBE construction projects completed within the planned schedule? What is the typical time overrun amounts for?

14.how does delays affect project cost and quality, can you give specific example?

15.how satisfied do you think CBE management, consultants and contractors on this project?

**B7: Moderating factors**

16.How supportive is top management on scheduling decisions and related challenges, can you share example of strong support or lack of support?

_____

_____

17.How does labour productivity (skilled vs non-skilled labour affects schedules? is labour availability issues occur?

_____

_____

_____

_____

18.How reliable are contractors in complying with agreed schedules and requirements?

_____

_____

_____