

The Effect of Organizational Culture on Cost and Time Performance of Construction Projects: A Case Study of Elmi Olindo Contractors PLC, Ethiopia.

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Declaration

I, Semir Mohammed, hereby declare that the thesis entitled " The Effect of Organizational Culture on Cost and Time Performance of Construction Projects: A Case Study of Elmi Olindo Contractors PLC, Ethiopia." is based on my original work, except for quotations and citations. I further declare that this thesis has not been previously or currently submitted to Addis Ababa University or any other institution for any degree or academic qualification.

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This certificate certifies that the thesis entitled " The Effect of Organizational Culture on Cost and Time Performance of Construction Projects: A Case Study of Elmi Olindo Contractors PLC, Ethiopia." was conducted by Semir Mohammed as partial fulfillment of the Master of Arts Degree in Project Management at Addis Ababa University. I confirm that this work is original and has not been submitted for any degree, either at AAU or any other university. With my approval, this thesis is now submitted for consideration.

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Statement of Certification of Originality and Quality

This is to certify that the thesis prepared by Semir Mohammed: " The Effect of Organizational Culture on Cost and Time Performance of Construction Projects: A Case Study of Elmi Olindo Contractors PLC, Ethiopia." and submitted in partial fulfillment of the requirements for the Degree of Master of Arts in Project Management, complies with the regulations of the University and meets the accepted standards concerning originality and quality.

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Abstract

The purpose of this study was to test the effect of organizational culture on project cost and time performance within the construction sector. The study was conducted in Elmi Olindo Contractors, a construction company based in Addis Ababa, Ethiopia, Using Denison's organizational culture model as the theoretical framework. A mixed methods approach was employed. Quantitative data were collected through questionnaires sent to employees of Elmi Olindo Construction PLC who are involved in projects, qualitative data were obtained through open ended questionnaire items and semi structured interviews. A census approach was used or the quantitative survey and purposive sampling was used to select interview participants.113 responses were collected and analyzed for the quantitative survey and 5 employees participated in the interview and their responses were analyzed thematically. The findings demonstrated that organizational culture has an effect on cost and time performances of a project. Regression analysis showed that involvement, adaptability and mission have a positive effect on both cost and time performance of a project however consistency did not show a significant effect. The qualitative findings further showed that communication, teamwork, leadership, effectiveness, coordination and organizational responsiveness play important roles in improving cost and time performances of project. The study concludes that organizational culture is a critical determinant of project success within construction companies. The findings suggest that improving employee involvement, improving organizational adaptability, enhancing communication and coordination, and promoting clear strategic direction can significantly improve project cost and time performance.

Keywords: Organizational Culture, Project Performance, Cost Performance, Time Performance, Denison Model

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Chapter:1. Introduction

1.1 Background of the Study

The construction sector plays a key role in Ethiopia's development by providing infrastructure, economic sustainability and employment. The construction sector has been growing rapidly in the past years due to high demand in housing, industrial facilities city infrastructures, commercial buildings, etc. Consistent challenges have been observed especially in regards with time and cost performances in construction projects despite the growth in the sector over the past years. Numerous national reports and empirical studies have widely associated cost overruns, schedule delays, and productivity inefficiencies with managerial, technical, and contextual factors (Desta, 2019; Bekele, 2021).

Organizational culture is a recognized determinant of project performance. Organizational culture can be seen as the shared values, norms, beliefs, and behavioral expectations that shape how employees interact, communicate, make decisions, and respond to challenges (Schein, 2017). In construction organizational culture plays a major role because project success depends on teamwork, leadership, coordination, effective communication (Ozorhon, 2010). Researchers suggest that organizations with a strong, supportive, and performance-oriented culture are more likely to deliver projects within budget and schedule (Liu, 2008).

The relationship between organizational culture and perceived project cost and time performance has not been researched widely, especially in Ethiopian construction industry, organizational culture has received limited attention in comparison with financial and technical factors. Existing research focused mainly on leadership, project management practices, and procurement issues with limited attention on how organizational culture affects a project's performance such as cost and time. At an organizational level, Elmi Olindo Contractors PLC, as one of the long-established construction companies operating in Ethiopia, provides a context to investigating how cultural attributes such as leadership style, employee involvement, communication, and organizational values affect employees' perception of project performance.

This study seeks to examine the impact of organizational culture on the perceived cost and time performance of construction projects in Elmi Olindo Contractors PLC. Understanding this

relationship will help the company and the broader Ethiopian construction industry adopt more effective cultural practices to improve overall project outcomes also the research will contribute to the general literature gap that exist in relation to organizational culture and project performance.

1.2 Statement of the Problem

Despite the rapid growth of Ethiopia's construction sector, cost overruns and schedule delays remain persistent challenges. Studies indicate that a significant proportion of construction projects in Ethiopia are completed over budget and behind schedule (Nega, 2008). While technical and financial factors have been widely examined, the role of organizational culture in shaping project performance has received limited empirical attention.

At Elmi Olindo Contractors PLC, internal reports and preliminary observations reveal recurring project challenges, including communication gaps between departments, slow decision-making processes, ineffective cross-functional coordination, and inconsistent adherence to project management procedures (Alemayehu, 2023) (Tiruneh, 2022). These behavioral patterns are symptomatic of underlying organizational culture — the shared values, norms, and assumptions that guide employee behavior (Schein, 2017).

However, no empirical study has systematically examined how the company's organizational culture influences employees' perceptions of project cost and time performance. The specific cultural dimensions (involvement, consistency, adaptability, and mission) that may affect project outcomes have not been measured or analyzed within this organizational context.

This knowledge gap has practical consequences. Without empirical evidence linking cultural attributes to performance outcomes, management cannot implement targeted cultural interventions to improve project delivery. Generic recommendations based on technical or financial factors alone are unlikely to address the behavioral and cultural root causes of delays and cost overruns.

Therefore, this study seeks to fill this gap by investigating the effect of organizational culture on perceived cost and time performance of construction projects at Elmi Olindo Contractors PLC.

1.3 Research Questions

1. What are the dominant dimensions of organizational culture at Elmi Olindo Contractors PLC?
2. How do employees perceive the cost and time performance of construction projects in the company?
3. To what extent do the dimensions of organizational culture influence perceived cost performance of construction projects?
4. To what extent do the dimensions of organizational culture influence perceived time performance of construction projects??

1.4 Objectives of the Study

1.4.1 General Objective

- To assess the impact of organizational culture on the perceived time and cost performance of construction projects within Elmi Olindo Projects PLC.

1.4.2 Specific Objective

- To identify the dominant dimensions of organizational culture at Elmi Olindo Contractors PLC.
- To assess employees' perception of cost and time performance of construction projects in the company.
- To examine the effect of organizational culture dimensions on perceived cost performance.
- To examine the effect of organizational culture dimensions on perceived time performance.

1.5 Significance of the Study

1.5.1 For Elmi Olindo Contractors PLC

The study can help the management determine and improve cultures that affect the cost and time performance in construction projects. It can also provide empirical insights into how internal cultural attributes influence project performance.

1.5.2 For the Construction Industry

The study can provide data driven recommendations for other construction companies.

1.5.3 For Future researches

The study can give insight to the limited body of Ethiopian literature on organizational culture's role in project performance. It can also serve as a foundation for future researches on organizational culture and project management.

1.6 Scope of the Study

1.6.1 Geographical Scope

The study was conducted at Elmi Olindo Contractors PLC, Addis Ababa, Ethiopia.

1.6.2 Conceptual Scope

The study focused on the effect of organizational culture (using Denison's model: involvement, consistency, adaptability, and mission) on perceived cost performance and perceived time performance of construction projects. Other aspects of project performance (e.g., quality, safety, client satisfaction) were not covered.

1.6.3 Methodological Scope

Data were collected from technical and project support staff using questionnaires (census) and semi-structured interviews (purposive sampling). The study is a single-case study and findings are limited to Elmi Olindo Contractors PLC.

1.7 Definition of Key Terms

- Organizational Culture: Shared values, norms and beliefs that guide behaviors within an organization.
- Perceived Performance: Employees subjective assessment of performance in the projects.
- Cost performance: The extent to which a project is concluded within the planned budget.
- Time Performance: The extent to which a project is concluded within the planned schedule.

1.8 Organization of the Study

This thesis consists of five chapters. Chapter one presents the background, problem statement, objectives, research questions, and significance. Chapter Two reviews relevant literature

including theoretical, conceptual and empirical reviews as well as conceptual reviews and research gap. Chapter Three outlines the research methodology including research design, research approach, target population, data collection methods and methods of data analysis. Chapter Four presents findings and data analysis. Chapter Five provides conclusions and recommendations, and suggestions for future research.

Chapter:2. Literature Review

2.1 Theoretical Review

2.1.1 Schein's Organizational Culture Theory

The concept of organizational culture has become a major theme of management studies since the mid-1980s. One of the influential works is the Organizational Culture and Leadership model developed by (Schein, 2017) defines organizational culture as a pattern of shared basic assumptions learned by a group as it solves its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems. Organizational culture can be seen as a pattern of shared basic assumptions learned by a group as it solves problems of external adaptation and internal integration. According to Schein culture can be analyzed at three different levels Artifacts, Espoused beliefs and values and basic underlying assumptions. Artifacts are visible organizational elements such as structures, procedures, and behaviors; espoused values reflect stated strategies, goals, and philosophies; while basic assumptions represent unconscious beliefs that shape perceptions and actions. These levels affect how employees interpret situations, make decisions and act in different scenarios.

Organizational culture is different in the way it operates from formal management systems in that it operates informally but powerfully. It shapes behaviors that relates to planning accuracy, communication effectiveness, and responsiveness to project challenges. That makes culture important in construction projects, which are temporary, uncertain and interdependent.

In construction companies, artifacts include site management procedures and reporting mechanisms, and espoused values can be shown in official project objectives that relate to cost control and schedule control. Assumptions like attitudes to authority, risk, and accountability usually determine hoe employees act under pressure. Schein's framework is especially useful in elaborating why formal project might fail when underlying cultural assumptions are not aligned with objectives.

2.1.2 Hofstede's Cultural Dimensions Theory

(Hofstede, 1991) explained culture from a comparative view, identifying important dimesions like power distance, uncertainity avoidance, indivisualism versus collectivism, and masculinity versus femininity. Even though it was originally developed to compare national cultures, Hofstade's dimensions have been mainly applied to organizational contexts.

Hofstede's theory can be important in the context of developing countries like Ethiopia, where hierarchical organizational structures are very common and may affect communication flow and speed of decision making in projects.

(Ozorhon, 2010) found that construction project performance is significantly affected by organizational and cultural allignment. In project based organizations like construction companies, cultural assumptions have a strong influence on collaboration, communication, leadership practices and problem solving approaches. Culture of an organization that embraces transparency trust and accountability can help coordination between project participants. Culture that is rigid may not help in effective project execution.

Firms succeed when teams actually talk to each other and understand their goals. In fact, research into construction companies proves that cultural traits—like team unity and a drive to innovate—impact final project outcomes just as much as technical blueprints or engineering processes (Sai On Cheung, 2012)

2.1.3 The Competing values Framework

(Kim S. Cameron & Robert E. Quinn, 2006) developed the Competing Values Framework (CVF), a widely used moel to analyze organizational culture. Based on flexibility versus contol and internal versus external orientation, it catagorizes cultures into four quadrants :

- Hierrarchy Culture: Thrives on strict rules, stability, and clear chains of command.
- Market Culture: Driven entirely by competition, hit tarhets, and high output.
- Clan Culture: Puts prople first, focusing highly on collaborstion and open communication.
- Adhocracy Culture: Centers on fast innovation, taking risks, and staying flexible.

Looking at these traits through Cameron and Quinn's (2006) Competing Values Framework reveals a major challenge for construction companies: they have to balance opposing forces. A successful project needs the teamwork and tight communication found in a clan culture, but it also demands the rigid cost control and strict scheduling that only a hierarchy culture provides. Managing these ongoing tensions between tight control and creative flexibility is exactly what dictates a firm's ultimate success

The Competing Values Framework gives us a useful view for analyzing cultural tensions in construction companies, where balance is needed between need for control and flexibility.

2.1.4 Denison's Organizational Culture Model

(Denison D. R., 1995) proposed a model that links organizational culture to organizatioal effectiveness and organizational performance. The model has four cultural dimensions:

- Involvement – employee empowerment, teamwork, and capability development;
- Consistency – core values, agreement, and coordination;
- Adaptability – responsiveness to change and learning;
- Mission – clarity of purpose, goals, and strategic direction.

These dimensions are important in construction project environments, where teamwork, coordination, adaptability, and clear objectives are essential for meeting cost and time targets.

Empirical research using Denison's model showed strong relationships between the cultural traits and indicators of organizational performance. In construction projects, involvement supports teamwork and task ownership, adaptability makes problem solving easier, consistency compliments coordination, and having a mission aligns the team with objectives especially in terms of cost and time. Because Denison's model is performance oriented, it is suitable to test project cost and time performance outcome.

2.1.5 Relevance of the Theories to the Study

The above theories imply that organizational culture affects construction performance by shaping leadership, communication, teamwork and decision making to uncertainties. Schein's theory explains cultural assumptions, Hofstede and CVF highlight structural and value based

differences. Denison's model gives the most direct relationship between culture and performance. That makes it relevant for empirical investigation.

Understanding how organizational culture affects cost and time performance is very important in the context of Ethiopian construction companies where hierarchical structure and resource constraint is dominant. This study takes perspectives from these theories to examine how cultural dimensions within Elmi Olindo Contractors PLC shape project cost and time performance perceptions.

This study uses Denison's model as its main framework, but takes ideas from Schein and Hofstede to get a complete picture. Denison's theory can be applied in this study because it turns cultural traits into measurable data for a quantitative study. On the other side, Schein's ideas make it much easier to actually make sense of the qualitative, human side of the data. Combining these theories together gives the final analysis a much stronger foundation.

2.2 Conceptual Review

2.2.1 Organizational Culture in Construction Companies

Organizational culture in construction companies have common practices in relation to leadership, communication and decision making. According to (Zuo, 2005) cultural allignment is cruicial for a construction company because projects involve temporary teams, multiple stakeholders and high uncertainity. Organizational culture plays a part in in how teams in a project coomunicate, coordinate, manage risks, and respond to challenges. Cultural elements like trust, cooperation, and shared responsibility are known to reduce conflicts and improve efficiency

In construction, culture affects daily behaviors like openness in communication between the team and collaboration among project stakeholders. Research suggest that organizations with cultures that demonstrate teamwork, trust and adaptability usually manage projects more efficiently compared to organizations with rigid hierarchies and poor communication (Kim S. Cameron & Robert E. Quinn, 2006).

According to (Mersha, 2023) in Ethiopian construction industry , orgaizational culture is shaped by hierarchial management structures, centralized decision making and strong authority

relationships. These cultural characterstics influence how project managers and technical staff percieve project suceess, especially in terms of cost and schedule.

Previous studies indicate that weak organizational culture can lead to poor communication, unclear responsibilities, and delays in decision-making. That can negatively influence project performance (Liu, 2008).on the other hand, a strong culture that promotes collaboration and accountability supports effective cost and time management.

2.2.2 Project Performance in Construction

Historically, project success comes down to the "iron triangle" of budget, schedule, and quality (Atkinson, 1999). This narrows it specifically on cost and time. In the Ethiopian construction industry, these two metrics are absolute critical indicators of success. When looking at cost, the main goal is tracking whether a project finishes inside its approved budget. For time, it is about finishing the project in the planned deadlines.

In construction projects, cost and time performance are closely interrelated. Delays usually result in increased costs due to extended labor, equipment usage, and overhead expenses.

2.2.3 Perceived Project Cost Performance

According to (PMI, 2021) Cost performance refers to the extent to which a project is completed within its approved budget. From a classical project control perspective, cost performance is measured objectively using financial records, cost variance, and earned value metrics (Kerzner, 2017). However, recent project management literature recognizes that project success is not determined solely by objective financial outcomes but also by how those outcomes are perceived by project stakeholders.

Perceived project performance is stakeholders' subjective assessment of how well projects meet cost and time objectives. When reliable objective data are difficult to access, perception-based measures are widely accepted in project management research. Employees' perceptions are particularly important and valuable because they reflect operational realities, managerial effectiveness, and organizational behavior within projects.

Perceived cost performance refers to the subjective evaluation of the projects cost performance from the view of project participants, such as the project managers, engineers and other

stakeholders. These perceptions are shaped by the stakeholder's experience, working situation, communication mode and the effectiveness of cost control methods in the project rather than an objective figure that might tell how the project performs financially. For example, a project may exceed its original budget but still be perceived as cost-effective if cost increases are well justified, communicated, and managed.

In construction projects, where cost uncertainty is high due to unstable material prices, scope changes, and site conditions, perceived cost performance becomes particularly important.

2.2.4 Perceived Project Time Performance

According to (PMI, 2021) time performance is the degree to which a project meet its deadline. According to (Kerzner, 2017) traditional measures of time performance are schedule variance, schedule performance index, and completion dates relative to baseline schedules. The same idea that applies to cost performance applies here.

Perceived time performance is a stakeholders' subjective assessment of how effectively a project manages its schedule, responds to delays, and maintains progress toward deadlines (Sun, 2010).

(PMI, 2021) recognizes that success in schedule is not only about mmeing a set date but it is about how to manage expectation and maintain stakeholders confidence. If delays are anticipated, managed and communicated effectively projects may still be percieved as performing well in terms of time even though it is facing delays.

In construction projects, where delays are common, perceived time performance shows not only on actual schedule outcomes but on how well the company manages uncertainty, coordinates, and communicates in the project (Liu, 2008).

Organizational culture plays a crucial role in molding perceived time performance. Cultures that promotes accountability, teamwork, and empowerment will have faster decision making and more efficient problem solving, which leads to a more positive schedule perceptions. On the other hand cultures with centralized authority show slow responses which increases frustration and negative perceptions of time performance (Hofstede, 1991).

2.2.5 Integration of Perceived Project Cost and Time Performance

Cost and time performance are interrelated in construction projects, schedule delays usually leads to cost overruns by extending overheads, claims, and resource inefficiencies (Flyvbjerg, 2014). Therefore, perceptions of cost and time performances are formed simultaneously and influenced by the same organizational factors.

Previous studies have successfully employed perception based methods to assess project performance link it to management practices and organizational cultures (Abdul-Rahman, 2012), so, using perceived cost and time performance is appropriate for this research

In this study, perceived cost and time performance are adopted as dependent variables to capture the experiential assessments of engineers and project managers. These perceptions provide valuable points of view into the effectiveness of organizational culture in construction project environments.

2.3 Empirical Review

2.3.1 Empirical Studies on Construction Cost and Time Performance

Studies done in developed and developing countries show that construction projects usually suffer from cost overruns and schedule delays. Research done by (BENT FLYVBJERG, 2003) highlighted that cost overruns happened in 90% of cases indicating weaknesses in project planning and management. (Love, 2014) made a research and found that poor coordination, unsatisfactory risk management, and weak internal controls highly contributed to time and cost overruns in construction projects.

In developing countries, because of institutional weaknesses and limited managerial capacity, these challenges are observed more. (Sun, 2010) found in their study that effective cost control mechanisms, delayed decision-making, and poor communication are crucial contributors to cost overruns and schedule delays. These factors are related to internal organizational practices rather than purely technical constraints.

In Ethiopia, similar situations are observed. (Nega, 2008) tested public building construction projects and found that most projects faced significant cost overruns because of inaccurate cost estimation, frequent design changes, and weak project management practices. (Mersha, 2023)

also reported that federal road construction projects consistently exceeded planned schedules, with delays credited to poor coordination, slow decision-making, and inadequate project monitoring systems.

2.3.2 Empirical Studies on Organizational Culture and Project Performance

Studies show that organizational culture affects project performance, specifically cost and time performance, this has been shown on different industries. (Denison D. R., 1995) has formulated a strong relationship between cultural traits like involvement, adaptability, consistency and mission and organizational effectiveness. Their results highlighted that organizations with participatory culture achieve better performance outcomes.

Researches emphasize the role of organizational and managerial factors in affecting construction project performance. (Toor, 2010) stated that leadership style, communication quality, and organizational support highly affected project outcomes. Their findings imply organizational dynamics play a major role in shaping project success that also includes complying with planned budget and schedule.

(Liu, 2008) conducted a research in the context of construction projects examining organizational culture in construction projects using survey data from professionals. In the study cultures that relate to communication, teamwork, leadership and so on highly affect project coordination and performance. Projects that have cooperative and flexible culture showed better control on cost and schedules compared to projects that have rigid hierarchical cultures.

2.3.3 Empirical Evidence on Organizational Culture and Perceived Project Performance

Researches indicate that project performance is not just an objective output but also a perceived experience of stakeholders. According to (Toor, 2010) engineers and managers perceptions of project performance gives valuable insights into organizational effectiveness, especially in complex projects.

(Love, 2014) stated that projects with strong collaborative culture were perceived as more successful, even when overruns and delays happened. This hints that perceived performance is affected by how organizations manage challenges rather than just final outcomes.

(Denison D. R., 1990) Showed that organizational culture affects employee perceptions of effectiveness, commitment, and performance. These show that perceived cost and time performance are valid indicators of project effectiveness and are appropriate dependent variables for organizational culture studies.

2.3.4 International Empirical Studies

International research has recognized organizational culture as a determinant of project success, not just in terms of quality but specifically cost and time outcomes. (Denison D. R., 1995) Found that cultural traits especially involvement and adaptability significantly correlated with organizational performance outcomes. Their research highlighted that cultural characteristics facilitate or constrain behaviors like information sharing, problem-solving, and flexibility, which are critical for managing project constraints such as cost and schedule.

Multiple international studies have examined the relationship between organizational culture and project performance. (Zuo, 2005) Found that project culture significantly influences communication, teamwork, and coordination in construction projects.

Similarly, (Liu, 2008) reported that organizational culture affects project outcomes through its impact on leadership behavior and employee motivation. They found that cultural misalignment between project partners led to misunderstandings and coordination breakdowns, resulting in schedule delays and increased costs. Their quantitative survey and qualitative interviews revealed that collaborative cultures improve trust and shared understanding, which are directly tied to on-time and on-budget performance.

(Abdul-Rahman, 2012) Demonstrated in their studies a positive relationship between organizational culture dimensions and project performance indicators, including adherence with cost control and schedule. These studies collectively suggest that organizational culture plays a critical role in determining construction project success.

These findings highlight that organizational culture influences not only individual attitudes but also group processes essential for managing time and cost constraints.

2.3.5 Ethiopian Empirical Studies

Empirical research on construction projects in Ethiopia has largely focused on cost and time performance, with a consistent finding that a significant proportion of projects experience delays and cost overruns. These studies provide important contextual evidence on the prevalence of performance problems in the sector.

(Nega, 2008) Examined public building projects and found that most projects exceeded their planned budgets and schedules due to inaccurate cost estimation, frequent design changes, and weak management practices. Although the study identified administrative weaknesses, it did not explicitly analyze organizational culture.

(Tiruneh, 2022) Examined the causes of construction project delays and their impact on project cost in the case of Elmi Olindo Contractors PLC. The study found that schedule delays were widespread and frequently resulted in cost escalation. Key contributing factors were inadequate planning, weak coordination among project participants, and limited risk anticipation. Although the study highlighted managerial shortcomings, it did not explicitly examine how culture within the organization influenced performance outcomes.

(Mersha, Construction project management practice in Ethiopia: The case of federal road construction projects, 2023) Analyzed time and cost performance in federal road construction projects. The study reported that all sampled projects experienced time overruns, and many required cost extensions. Ineffective supervision, delayed decision-making, and poor coordination were identified as major contributors to performance failure. While these findings reinforce the systemic nature of performance challenges in Ethiopian construction, the study did not explore how organizational culture within contracting firms shapes such managerial behaviors.

Studies focusing on internal management practices further suggest the relevance of organizational attributes to project performance. (Bahata, 2019) Assessed risk attitudes and risk management practices at Elmi Olindo Contractors PLC and found that risk handling relied heavily on individual experience rather than standardized procedures. This indicates the presence of underlying organizational norms and attitudes that influence how project risks are perceived and managed. Likewise, (Alemayehu, 2023) examined monitoring and evaluation practices at

Elmi Olindo Contractors PLC and reported that weak feedback mechanisms and inconsistent oversight negatively affected project performance.

Overall, Ethiopian empirical studies highlight that cost overruns and schedule delays are familiar problems in construction projects and that internal management practices play a major role in shaping performance outcomes. However, most existing studies address these issues through isolated technical or procedural lenses and do not explicitly examine organizational culture as a determinant of perceived cost and time performance. This gap provides the basis for the present study, which seeks to investigate how organizational culture influences employees' perceptions of cost and time performance in construction projects, using Elmi Olindo Contractors PLC as a case study.

2.3.6 Identified Research Gap

From the reviewed studies, it can be concluded that cost overruns and schedule delays are common challenges both in Ethiopia and internationally. International studies show us that organizational culture influences communication, leadership, and project coordination and they in turn affect project performance.

Ethiopian studies however focused mostly on technical, financial, and procedural causes for performance problems in a project. There is limited attention to organizational culture as a determinant of project outcome. Only few studies are done on perceived cost and time performance from the point of view of project participants despite the growing recognition of perception based performance assessment in project management studies.

This study addresses these gaps by examining the impact of organizational culture on perceived cost and time performance in construction projects, using Elmi Olindo Contractors PLC as a case study and adopting a mixed-methods approach.

2.4 Conceptual Framework

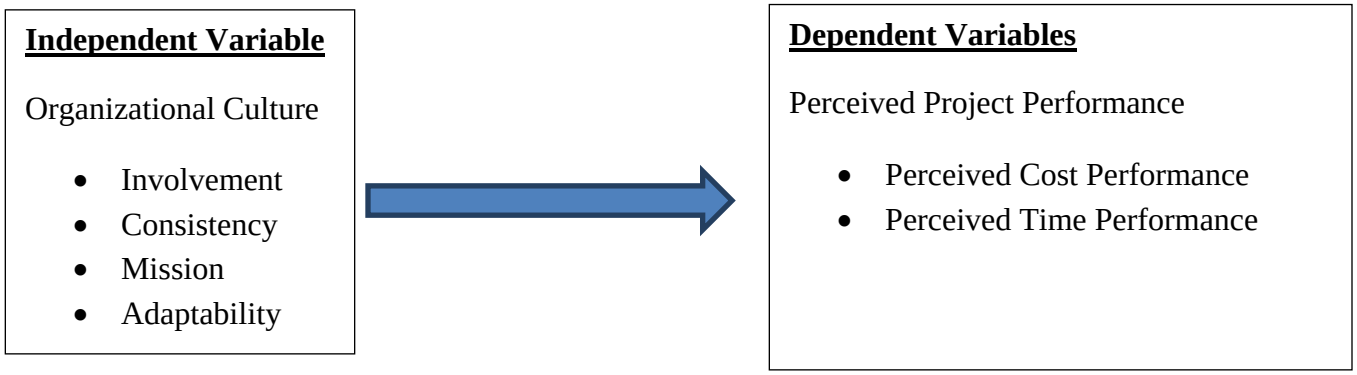
From the reviewed literature above, this study proposes that organizational culture affects construction projects performance, especially cost and time performance. Cultural dimensions such as leadership, communication, employee involvement, adaptability, and shared values are expected to affect how effectively projects are planned, coordinated, and executed.

The conceptual framework shows the assumed relationship between organizational culture and perceived cost and time performance. Organizational culture, represented by Denison's dimensions which are involvement, adaptability, consistency, and mission are treated as independent variable. These dimensions are expected to affect how project professionals perceive cost and time performance of projects.

The dependent variables are perceived cost and time performance, they reflect on project participants' evaluation of a projects budget control and schedule adherence based on their experience within the organization.

Organizational Culture → Perceived Cost Performance → Perceived Time Performance

This framework guides the development of research instruments and data analysis.



Source: Adapted from Denison (1990)

Figure 2.1 Conceptual framework of the study

Chapter:3. Research Methodology

3.1 Introduction

This chapter presents the research methodology that was used to examine the impact of organizational culture on the perceived cost and time performance of construction projects, using Elmi Olindo Contractors PLC as a case study. It explains the research design, research approach, target population, sampling techniques, data collection instruments, data analysis methods, validity and reliability considerations, ethical issues, and limitations of the study. The methodological choices are guided by the nature of the research problem, research objectives, and the need to generate valid and reliable find.

3.2 Study Setting

The study is conducted at Elmi Olindo Contractors PLC, a construction company that has been operating in Ethiopia for multiple decades and is engaged in building and infrastructure projects. The company executes projects under different technical, financial, and environmental conditions.

The company setting includes multiple project teams that consist project managers, site engineers, office engineers and technical staff who work under a shared organizational and cultural norms. The setting gives us an appropriate context to test how organizational culture affects perceived cost and time performance.

To get an in depth understanding of the cultural dynamics and performance perceptions within a project environment, focusing on a single company was helpful.

The company is selected because of its active involvement in construction projects in Ethiopia and the accessibility of relevant project participants, making it suitable for an in-depth case study.

3.3 Research Approach

This research uses both qualitative and quantitative methods to address the research problem. Instead of sticking strictly to a single philosophical view to answer the research questions this research uses pragmatic research approach which focuses on the practical consequences of

research and emphasizes selecting methods that are most suitable for answering the research question (Creswell, 2018).

Because organizational culture and project performance involve both observable objective patterns and subjective interpretations. Only quantitative approach would not be enough to get the contextual meanings and experiences of project participants. And a purely qualitative approach would limit the ability to statistically analyze relationships between variables. So, using both gives the flexibility that is required to investigate both parts.

The quantitative component of the research works under the assumption that organizational culture dimensions and perceived cost and time performance can be measured and analyzed statistically. This means using structured questionnaire and SPSS to collect and analyze data to get correlation and regression results. This helps in identifying cause and effect relationship between the variables.

When it comes to the qualitative component, perceptions of participants cost and time performance like experiences, cultural norms in the company and different contexts are recognized. In order to allow participants to explain how organizational culture affects project execution and to provide depth and contextual understanding, open ended questions and semi structured interviews are used.

Qualitative and quantitative data are collected and analyzed separately and they are integrated at interpretation of results. This design shows the credibility of the findings through triangulation, which allows results from one method to compliment the other (Creswell, 2018).

Mixed methods approach is suitable for construction management research because organizational behavior and project performance intersect, By using this approach the study makes sure there is methodological extensiveness and aligns with reality in projects,

3.4 Research Design

This study adopted an explanatory case study research design. The explanatory design was chosen to investigate the causal relationship between organizational culture (independent variable) and perceived cost and time performance (dependent variables). Specifically, the study

examines how variations in the four cultural dimensions — involvement, consistency, adaptability, and mission — affect project performance perceptions.

A single-case study approach was used because it allows in-depth exploration of cultural dynamics and performance perceptions within the specific context of Elmi Olindo Contractors PLC (Yin, 2018). Case study research is widely used in construction management research due to the project-based and context-specific nature of the industry (Liu, 2008). The single-case design is appropriate here because the study focuses on understanding how organizational culture influences perceived project performance within one organization, rather than seeking statistical generalization across multiple companies.

The explanatory component enables hypothesis testing through regression analysis, while the case study component provides contextual depth through qualitative data collection and analysis. This integrated design supports the mixed-methods approach described in the research approach section.

3.5 Target Population

The target population of the study consisted of all 150 technical and support staff directly involved in construction project execution at Elmi Olindo Contractors PLC. This included project managers, site engineers, office engineers, finance staff, procurement staff, and other technical personnel.

These staff members were selected because their roles directly influence or are influenced by project cost management, scheduling, and organizational practices. They possess relevant experience to assess organizational culture and perceived project performance, as they participate actively in cost and time control processes and experience organizational culture firsthand in projects.

3.6 Sampling Technique and Sample Size

3.6.1 Sampling Technique

This study used two participant selection strategies to address the quantitative and qualitative components of the research.

For the quantitative component, a census approach was adopted. All employees with project-related responsibilities at Elmi Olindo Contractors PLC was invited to participate in the questionnaire survey. Given the manageable size and accessibility of the study population, the census approach is selected to ensure comprehensive representation and to minimize sampling bias (Saunders, 2019).

For the qualitative component, purposive sampling was employed to select key informants for semi-structured interviews. Project managers and senior technical staff were purposively selected based on their roles in project planning, cost control, and schedule management. Purposive sampling is appropriate in case study research where the aim is to obtain in-depth understanding from information-rich participants rather than statistical generalization (Yin, 2018).

3.6.2 Sample Size

Quantitative component: The target population consisted of 150 employees involved in construction project execution and project support functions. Because the total population was small and manageable, a census approach was adopted, and all eligible members of the population were invited to participate in the questionnaire survey.

Qualitative component: A total of 8 interviews were conducted with key informants, including 3 project managers, 3 site engineers, and 2 procurement/finance managers. Interviews continued until thematic saturation was achieved no new codes or themes emerged after the sixth interview, and the remaining two interviews confirmed existing patterns.

3.7 Data Collection Methods

3.7.1 Quantitative Data Collection: Census Survey

A census approach was used for the quantitative part of the research, all the members of the target population were invited to participate in the questionnaire survey. A census approach can be used when the population is manageable because it minimizes sampling bias and makes sure comprehensive representation (Saunders, 2019).

Quantitative data was collected using a self-administered questionnaire which consists of demographic Information which includes role, years of experience, education level, and project involvement.

Organizational culture and Perceived Cost and Time Performance were measured using a five point Likert scale ranging from “strongly disagree “to “strongly agree” to capture participant’s attitudes and opinions.

Open ended questions were included to capture qualitative views in regards to cultural practices affecting cost and time performance.

3.7.2 Qualitative Data Collection: Semi-Structured Interviews

For the qualitative part, purposive sampling was used to select a small number ranging between 5 to 10 key informants for semi-structured interviews. Project managers and senior technical staff were purposively selected due to their strategic roles in decision-making, cost control, and schedule management.

3.7.3 Secondary Data

Secondary data was collected to complement the primary data and to provide contextual understanding of organizational practices and project performance. These data include relevant company documents such as organizational structures, project management procedures, and selected project progress and completion reports. In addition, industry guidelines and policy documents issued by relevant Ethiopian construction authorities were reviewed. The secondary data were used to support the interpretation of primary data and to situate the study within the broader construction industry context.

3.8 Data Analysis Method

3.8.1 Quantitative Data Analysis

Quantitative data were analyzed using SPSS version 26. Descriptive statistics (mean, standard deviation), reliability analysis (Cronbach's alpha), Pearson correlation, and multiple linear regression were performed. To ensure the validity of the regression models, Jamovi was additionally used for regression diagnostics, including tests for normality (histograms of standardized residuals), linearity (scatterplots), and multicollinearity (tolerance and VIF values).

3.8.2 Qualitative Data Analysis

Qualitative data from open-ended questionnaire responses and semi-structured interviews were analyzed using thematic analysis following the six-phase framework proposed by Braun and

Clarke (2006): (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. A total of 47 initial codes were identified and subsequently grouped into 12 sub-themes, which were then organized under the four main themes presented. The analysis was conducted manually using color-coded matrices in Microsoft Excel. Saturation was assessed by reviewing interview transcripts in the order conducted; no new codes emerged after the sixth interview, confirming that saturation was achieved.

3.9 Reliability and Validity

3.9.1 Reliability

Reliability is the consistency of data collection techniques. It is measured by determining whether the same result can be achieved if it tested at another time (Saunders, 2019).

Reliability is assessed using Cronbach's alpha, with a threshold value of 0.70 considered acceptable for internal consistency.

Before proceeding with the main statistical analysis reliability analysis was conducted to assess the internal consistency of the measurement scales used in the questionnaires. Cronbach's alpha coefficient was used to determine the reliability of each construct.

According to (Pallant, 2020), A Cronbach's alpha value higher than 0.7 indicate an acceptable internal consistency and reliability of the constructs.

Table 3.1 Reliability Analysis

Variable	**Cronbach's Alpha**
Involvement	0.821
Consistency	0.765
Adaptability	0.712
Mission	0.854
Cost performance	0.796
Time performance	0.796

The results presented in the above table show that all the variables achieved Cronbach's Alpha values above the threshold of 0.7. This shows that the questionnaire items that are used to measure the constructs have acceptable internal consistency.

Among the four organizational culture dimensions, mission recorded the highest reliability value ($\alpha = 0.854$), followed by involvement ($\alpha = 0.821$). Adaptability showed the lowest alpha value ($\alpha = 0.712$), although it still falls within the acceptable range.

The dependent variables, cost performance and time performance, both recorded reliability coefficients of 0.796, showing good internal consistency.

Therefore, the reliability analysis shows that the measurement scales used in this study are reliable and are eligible for further statistical analysis.

3.9.2 Validity

Validity ensures the accuracy of research findings accurately in what they claim to measure, particularly in establishing causal relationships. Research validity can be achieved by ensuring that questionnaire items are from valid literatures, making sure questions are aligned with the research objectives, and reviewing the questions with advisors and professionals

3.10 Ethical Considerations

The Study was made sure to observe standards of research ethics to protect participants and ensure integrity. The following ethical principles are applied throughout the study:

1. All participants got informed about the overall purpose and process of the study
2. Confidentiality was ensured by storing and using all data only for the research purpose
3. Participation was completely voluntary
4. The study was reported without manipulating the data

3.11 Limitations of the Study

The study has the following limitations:

1. Generalizability: The study was limited to a single construction company (Elmi Olindo Contractors PLC). This restricts the generalizability of findings to other construction companies with different organizational cultures, sizes, or operational contexts.

2. Subjective measurement: The study relied on perceived (subjective) measures of cost and time performance rather than objective project records (e.g., actual cost variance, schedule performance index). While perception-based measures are appropriate for examining organizational culture and internal effectiveness, they reflect respondents' subjective evaluations rather than independently verified financial or schedule data.

3. Social desirability bias: As respondents were evaluating their own organization, there is a risk of social desirability bias — participants may have provided more positive responses than their actual experiences reflect, particularly regarding organizational culture and performance outcomes.

4. Cross-sectional design: Data were collected at a single point in time, which limits the ability to establish causal direction between organizational culture and project performance. Longitudinal data would be required to confirm causality.

Despite these limitations, the mixed-methods approach (quantitative survey and qualitative interviews) and the high response rate (75.33%) enhance the reliability and credibility of the findings. The results remain valuable for similar organizational contexts and provide a foundation for future research.

Chapter:4. Data Analysis, Presentation and Discussion

4.1 Response Rate

A total of 150 employees who are currently actively participating in projects were given questionnaires as part of this study. Out of the total, 113 questionnaires were successfully completed and retrieved out of the entire distribution, representing 75.33% response rate. It should be noted that 37 employees did not return the questionnaire, and the analysis did not include their answers.

The response rate was considered adequate for statistical analysis and sufficient to support the objectives of the study. According to (Fellows, 2015), response rates within organizational studies are considered acceptable when they provide sufficient representation of the target population and allow meaningful statistical interpretation.

Table 4.1 Response rate

Questionnaires	**Frequency**	**Percent (%)**
The total number that were distributed	150	100
The total number that was returned	113	75.33
The total number was not collected	37	24.67
Total number of rejected	--	--

4.2 Demographic information of Respondents

The demographic characteristics of respondents are presented to contextualize the study findings and to assess whether certain respondent attributes influence perceptions of organizational culture and project performance. Understanding the composition of the sample helps determine the generalizability of findings within the company and identifies potential response biases. For example, differences in perceptions across age groups, experience levels, or job positions could indicate that certain employee segments experience organizational culture differently, which would have implications for targeted interventions.

Table 4.2 Demographic profile of respondents

Characteristic	Category	Frequency	Percent (%)
Gender	Male	92	81.4
	Female	21	18.6
Age	20-29	60	53.1
	30-39	47	41.6
	40-49	6	5.3
Education	Diploma	7	6.2
	Bachelor's	77	68.1
	Master's	29	25.7
Position	Project Manager	31	27.4
	Site Engineer	34	30.1
	Office Engineer	23	20.4
	Finance Staff	12	10.6
	Procurement & Others	13	11.5
Experience	<5 years	42	37.2
	5-10 years	51	45.1
	11-15 years	15	13.3
	>15 years	5	4.4

The demographic distribution shows that the majority of respondents were male (81.4%), reflecting the gender composition of Ethiopia's construction industry. Most respondents were in the 20-39 age range (94.7%) and had less than 10 years of experience (82.3%), indicating a relatively young workforce. This is relevant because younger, less experienced employees may

perceive organizational culture differently than senior staff. The high proportion of respondents with bachelor's degrees (68.1%) suggests a well-educated technical workforce capable of providing informed assessments. The representation of various job positions ensures that multiple perspectives on organizational culture are captured, addressing the research objective of identifying dominant cultural dimensions across different roles.

4.3 Descriptive Analysis

Descriptive statistics (mean and standard deviation) were used to examine respondents' perceptions of organizational culture dimensions and project performance. Table 4.3 presents these results. According to *(Denison D. R., 1990)* mean scores above 3.0 on a 5-point Likert scale indicate positive perceptions, while scores below 3.0 suggest areas of concern. The standard deviation indicates the degree of agreement among respondents.

Table 4.3 Descriptive analysis of variables

Variable	**Mean**	**Standard Deviation**
Involvement	3.40	0.77
Consistency	3.33	0.73
Adaptability	3.37	0.61
Mission	3.75	0.76
Cost performance	3.52	0.85
Time performance	3.51	0.78

The descriptive statistics in the above table show that all variables recorded mean values above 3.0, indicating generally positive perceptions. However, some dimensions scored notably lower than others.

Among the four culture dimensions, consistency received the lowest mean score (M = 3.33, SD = 0.73), suggesting that employees perceive less agreement on core values and coordination mechanisms within the company. This finding is notable because consistency has been shown in other studies (Denison D. R., 1995) to be a key driver of organizational effectiveness. The relatively lower score on adaptability (M = 3.37, SD = 0.61) also indicates room for improvement in responding to project changes – a critical capability given the dynamic nature of construction projects (Liu, 2008).

Conversely, mission received the highest mean score (M = 3.75, SD = 0.76), indicating that strategic direction and goal clarity are relatively stronger aspects of the company's culture. This suggests that employees generally understand the organization's objectives, which can positively influence project alignment.

Regarding project performance, cost performance (M = 3.52, SD = 0.85) and time performance (M = 3.51, SD = 0.78) both recorded moderately high mean values. This implies that while projects are generally perceived as performing adequately, the standard deviations (0.85 and 0.78) indicate some variation in individual experiences. The moderate scores suggest opportunities for improvement in budget and schedule adherence – areas that may benefit from strengthening the lower-scoring cultural dimensions of consistency and adaptability.

4.4 Correlation Analysis

Correlation analysis was conducted to examine the relationship between organizational culture dimensions and project performance variables.

According to (Saunders, 2019) correlation analysis helps to determine the direction and strength of relationship between the variables.

Table 4.4 Correlation between variables

Correlations							
Variables		Involvement	Consistency	Adaptability	Mission	Cost Performance	Time Performance
Involvement	r	1					
Consistency	r	0.804**	1				
Adaptability	r	0.542**	0.611**	1			
Mission	r	0.349**	0.471**	0.312**	1		
Cost Performance	r	0.668**	0.611**	0.582**	0.431**	1	
Time Performance	r	0.668**	0.611**	0.582**	0.431**	0.947**	1

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

The results in the above table show that all four dimensions of the organizational culture are positively and significantly correlate with both cost and time performance.

Involvement showed the strongest positive correlation with cost performance ($r = 0.668$, $p < 0.001$) and time performance ($r = 0.668$, $p < 0.001$). This suggests that higher levels of employee participation and empowerment are associated with improved project performance.

Consistency also demonstrated a strong positive relationship with cost performance ($r = 0.611$, $p < 0.001$) and time performance ($r = 0.611$, $p < 0.001$). Similarly, adaptability recorded positive and statistically significant relationships with both cost and time performance.

Mission showed moderate but significant positive relationships with cost performance ($r = 0.431$, $p < 0.001$) and time performance ($r = 0.431$, $p < 0.001$).

The results generally indicate that improvements in organizational culture dimensions are associated with better project performance outcomes.

A very strong positive relationship was also observed between cost performance and time performance ($r = 0.947$, $p < 0.001$), indicating that projects that perform well in terms of cost also tend to perform well in terms of schedule performance.

4.5 Assumption Testing for Regression Analysis

Before conducting multiple regression analysis, the assumptions underlying regression analysis were tested in order to ensure the validity and reliability of the regression model. The study specifically assessed the assumptions of normality, linearity, and multicollinearity.

The assumption tests were conducted separately for both dependent variables, cost and time performance.

4.5.1 Normality Test

The normality assumption was tested to determine whether the residuals of the regression models were approximately normally distributed before conducting multiple regression analysis.

Histogram plots of standardized residuals were used to assess normality for both the cost performance and time performance models.

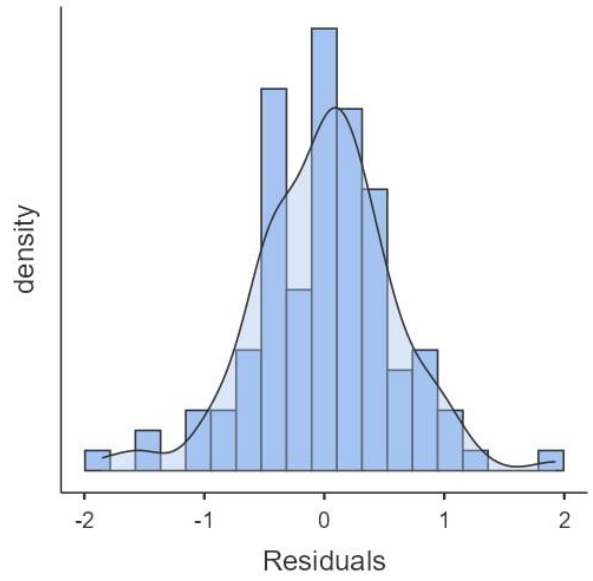


Figure 4.1 Histogram of Standardized Residuals for Cost Performance

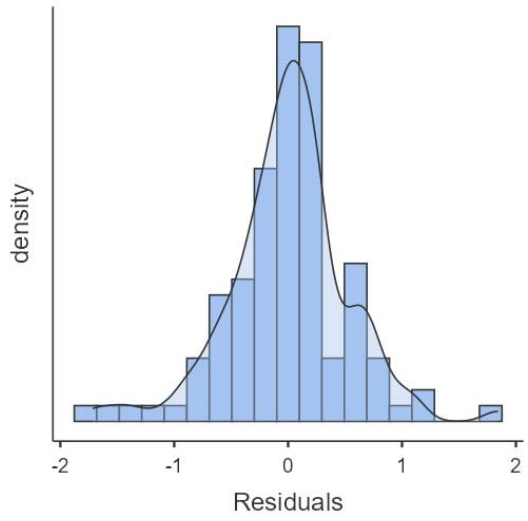


Figure 4.2 Histogram of Standardized Residuals for Time Performance

As seen in the above figures the histogram for both cost and time performance regression modes demonstrates a roughly bell-shaped distribution with no major skewness or irregular distribution patterns observed. Therefore, the normality assumption was satisfied for both cost and time performance models.

According to (Pallant, 2020), regression analysis can be considered appropriate when residuals are approximately normally distributed, as normality improves the reliability and validity of regression estimates and significance tests.

4.5.2 Linearity Test

The linearity assumption was tested to determine whether a linear relationship exists between the independent variables and the dependent variables before conducting regression analysis.

Linearity was assessed using scatterplots of standardized residuals for both the cost performance and time performance models.

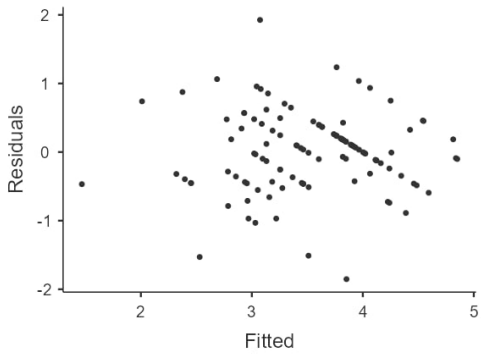


Figure 4.3 Scatterplot for Cost Performance Model

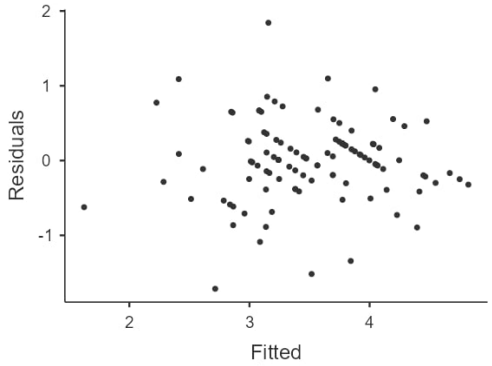


Figure 4.4 Scatterplot for Time Performance Model

As shown in thee above figures, the scatterplots for both cost and time performance regression models showed reasonably linear relationships between the independent variables and the dependent variables. The data points appeared to be randomly and evenly distributed without major curvilinear patterns or systematic deviations.

The residual distributions further indicated that the relationships between organizational culture dimensions and project performance variables were approximately linear.

These findings suggest that the linearity assumption required for multiple regression analysis was satisfied for both the cost performance and time performance models.

4.5.3 Multicollinearity Test

Multicollinearity assumption was tested to know whether extremely high correlations existed in the independent variables included in the regression models.

Multicollinearity happens when independent variables are highly correlated with one another, which may distort regression estimates and reduce the reliability of the regression coefficients. To measure multicollinearity, tolerance values and Variance Inflation Factor (VIF) statistics were examined for all predictor variables.

Table 4.5 Multicollinearity Statistics

Coefficients			
Model		Collinearity Statistics	
		Tolerance	VIF
	Involvement	0.349	2.87
	Adaptability	0.281	3.56
	Consistency	0.618	1.62
	Mission	0.774	1.29
a. Dependent Variable: Cost performance, Time Performance			

The results presented in the above table indicate that all tolerance values were above the minimum acceptable threshold of 0.1, while all VIF values were below the maximum recommended threshold of 10.

According to (Joseph F. Hair Jr., 2019), tolerance values greater than 0.1 and VIF values below 10 indicate the absence of serious multicollinearity problems in regression analysis.

Therefore, the findings confirm that no multicollinearity problem existed among the independent variables, and all predictor variables were considered suitable for inclusion in the regression models.

4.6 Regression Analysis

Multiple linear regression analysis was conducted to examine the effect of organizational culture dimensions on project performance. The regression model is specified as follows:

$$Y = \beta_0 + \beta_1 (\text{Involvement}) + \beta_2 (\text{Consistency}) + \beta_3 (\text{Adaptability}) + \beta_4 (\text{Mission}) + \varepsilon$$

Where Y represents the dependent variable (perceived cost performance in Model 1 and perceived time performance in Model 2), β_0 is the intercept, β_1 to β_4 are the regression coefficients for each organizational culture dimension, and ε is the error term. The model assumes linear relationships, normally distributed residuals, and no multicollinearity among predictors – assumptions that were tested and confirmed in section 4.6. The analysis was conducted using SPSS version 26 with the entry method (all predictors entered simultaneously).

The regression analysis was conducted to test the effect of organizational culture dimensions on project performance. Two separate regression models were employed for cost performance and time performance.

4.6.1 Effect of Organizational Culture on Cost Performance

Table 4.6 Model Summary of cost performance

Model	R	R Square	Adjusted R Square	Std. Error
1	0.736	0.541	0.524	0.586

The model summary result presented in the above table indicate a strong relationship between organizational culture dimensions and cost performance (R= 0.736).

The coefficient of determination ($R^2 = 0.541$) indicates that organizational culture explains 54.1% of the variation in cost performance. The remaining 45.9% may be attributed to other factors not included in the study.

The adjusted R^2 value of 0.524 further confirms the stability and explanatory power of the regression model.

These results suggest that organizational culture plays a significant role in influencing cost performance in construction projects.

Table 4.7 ANOVA analysis of cost performance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	43.801	4	10.950	31.839	0.000
Residual	37.144	108	0.344		
Total	80.945	112			

The ANOVA results shown in the table above indicate that the regression model is statistically significant ($F = 31.839$, $p < 0.001$). This implies that the organizational culture dimensions collectively have a significant effect on cost performance.

Table 4.8 Coefficient analysis of cost performance

Variable	Beta (β)	t-value	Sig.
Involvement	0.603	5.466	0.000
Consistency	-0.166	-1.352	0.179
Adaptability	0.243	2.935	0.004
Mission	0.222	2.995	0.003

The regression coefficients analysis indicates that involvement, adaptability, and mission have positive and statistically significant effects on cost performance.

Involvement recorded the strongest effect (β = 0.603, p < 0.001), indicating that employee participation and empowerment significantly contribute to improved cost performance.

Adaptability also showed a positive and significant effect on cost performance (β = 0.243, p = 0.004), suggesting that the organization's ability to respond to changes and project challenges improves project cost outcomes.

Mission similarly demonstrated a significant positive influence on cost performance (β = 0.222, p = 0.003).

However, consistency did not show a statistically significant effect on cost performance (β = -0.166, p = 0.179).

For consistency, the negative coefficient (β = -0.166) was not statistically significant (p = 0.179 > 0.05). Therefore, this negative sign should not be interpreted as a meaningful negative relationship; rather, consistency had no independent effect on cost performance in this study.

Overall, the findings suggest that involvement, adaptability, and mission are important organizational culture dimensions influencing cost performance.

4.6.2 Effect of Organizational Culture on Time Performance

Table 4.9 Model summary of time performance

Model	R	R Square	Adjusted R Square	Std. Error
1	0.738	0.545	0.528	0.534

The model summary result presented in the above table indicate that there is a strong relationship between organizational culture dimensions and time performance (R= 0.738).

The coefficient of determination (R^2 = 0.545) indicates that organizational culture explains 54.5% of the variation in time performance. The remaining 45.5% may be attributed to other factors not included in the study.

The adjusted R^2 value of 0.528 further supports the stability and explanatory power of the regression model.

These results suggest that organizational culture plays an important role in influencing time performance in construction projects.

Table 4.10 ANOVA analysis of time performance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	36.369	4	9.242	32.367	0.000
Residual	30.839	108	0.286		
Total	67.808	112			

The ANOVA results shown in the above table indicate that the regression model is statistically significant ($F = 32.367$, $p < 0.001$), suggesting that organizational culture dimensions have a significant effect on perceived time performance.

Table 4.11 Coefficient analysis of time performance

Variable	Beta (β)	t-value	Sig.
Involvement	0.474	4.313	0.000
Consistency	-0.036	-0.297	0.767
Adaptability	0.287	3.480	0.001
Mission	0.193	2.622	0.010

The regression coefficients analysis indicates that same as the cost performance, involvement, adaptability, and mission have positive and statistically significant effects on time performance.

Involvement recorded the strongest effect ($\beta = 0.474$, $p < 0.001$), indicating that employee participation and empowerment significantly contribute to improved time performance.

Adaptability also showed a positive and significant effect on cost performance ($\beta = 0.287$, $p = 0.010$), suggesting that the organization's ability to respond to changes and project challenges improves project time performance.

Mission similarly demonstrated a significant positive influence on time performance ($\beta = 0.193$, $p = 0.003$).

However, similar to cost performance, consistency did not show a statistically significant effect on time performance ($\beta = -0.036$, $p = 0.767$).

Similarly, consistency showed a negative but non-significant coefficient for time performance ($\beta = -0.036$, $p = 0.767$), confirming no meaningful effect.

Overall, the findings suggest that involvement, adaptability, and mission are important organizational culture dimensions influencing time performance.

4.7 Qualitative Findings and Discussions

In addition to quantitative analysis qualitative data were collected through open ended questionnaire responses and semi structured interviews in order to support methodological triangulation and capture deeper insight into findings of the research. The qualitative findings were analyzed using thematic analysis based on recurring ideas and patterns related to organizational culture and project performance.

The qualitative data consisted of responses to open-ended questionnaire items (n = 113 respondents provided written responses) and semi-structured interviews (n = 8 key informants: 3 project managers, 3 senior site engineers, 2 procurement/finance managers). Interviews lasted between 25 and 45 minutes and were notes were taken with participant consent.

Thematic analysis was conducted following the six-phase framework proposed by Braun and Clarke (2006): (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. A total of 47 initial codes were identified and subsequently grouped into 12 sub-themes, which were then organized under the four main themes presented below: involvement and communication, adaptability and flexibility, mission and leadership, and organizational challenges. The analysis was conducted manually using color-coded matrices in Microsoft Excel.

Saturation was assessed by reviewing interview transcripts in the order conducted; no new codes emerged after the sixth interview, indicating that saturation was achieved. To enhance trustworthiness, negative or deviant cases (responses that contradicted the dominant patterns) were actively sought and are reported.

The purpose of including qualitative findings was to compliment the quantitative results by capturing the respondents' experience, perceptions, and explanations regarding how organizational culture influences project cost and time performance within the company.

Overall, the qualitative findings supported the quantitative analysis and revealed that organizational culture significantly affects communication, teamwork, employee commitment, decision-making, coordination, adaptability, and overall project execution.

4.7.1 Involvement, Communication, and Project Performance

One of the significant themes identified from both the open ended questionnaire responses and interviews was the importance of employee involvement and communication in the improvement of project performance especially cost and time performance.

Many respondents explained that employee participation in project activities and decision making process has a contribution to project coordination and execution. Respondents highlighted that when employees are involved in planning and operational discussions, misunderstandings are less common and project implementation becomes smoother.

One respondent explained that: "The culture within the company heavily affects the cost of a project especially leadership and communication."

Another respondent stated that: "Coordination between different departments influences the schedule of the project massively."

One project manager explained: "When site engineers are involved in weekly planning meetings, we catch potential problems before they become expensive. Last year, a junior engineer pointed out a sequencing issue that would have cost us 2 million Birr and three weeks of delay. That conversation happened because our culture encourages speaking up. ''

A site engineer noted: "The difference between projects where I feel involved versus those where decisions come from top-down is huge. When I'm just told what to do, I follow orders. When I'm asked for input, I take ownership and look for ways to save time and money."

Another respondent added: "In projects where teamwork is strong, we finish tasks faster because we're not waiting for approvals from people who don't understand site conditions. Involvement means trust, and trust means speed."

Similarly, some participants highlighted that collaborative work environments improve teamwork and facilitate faster problem-solving during project implementation. One respondent noted that: “It creates a smooth and understanding work environment.”

Interview participants further explained that involving technical staff and project personnel in project related discussions and meetings improves communication flow and reduces operational inefficiencies. According to some respondents, projects tend to progress more effectively in terms of both cost and time when employees feel more empowered and engaged in organizational activities.

The findings highlight that organizations promoting employee involvement and effective communication are more likely to achieve better cost and time performance.

These qualitative findings strongly support the quantitative regression analysis where involvement emerged as the strongest predictor of both project cost and time performance. The findings are also consistent with Denison’s organizational culture theory, which emphasizes employee participation and empowerment as key drivers of organizational effectiveness.

4.7.2 Adaptability and Flexibility in Project Execution

Another theme observed from the qualitative responses was organizational adaptability and flexibility.

Respondents explained that since construction projects are dynamic in nature they frequently encounter unexpected changes and operational challenges such as material shortages, design changes, procurement delays, weather conditions, and client modifications. In such situations, the company should be capable of adapting quickly, to perform better in terms of both cost and time management.

Several participants highlighted that flexible organizational cultures improve responsiveness and help reduce delays during project execution.

A procurement officer stated: "When material prices suddenly increased by 40% last quarter, our team was given the flexibility to source alternatives within two days. If we had to wait for head office approval through normal channels, we would have lost three weeks. That's the kind of adaptability that saves projects."

One respondent offered a contrasting view: "On some projects, the culture is still very rigid. Any change requires sign-off from three levels of management, and by the time approval comes, the problem has worsened. Those projects always run late and over budget."

One respondent explained that if organizations encourage learning and innovation, then they are more capable of introducing effective solutions to project-related problems. Others noted that quick decision-making and proactive planning help reduce disruptions during project implementation. Which will improve time and cost performance in projects.

Interview findings also revealed that organizations with adaptable cultures are generally more effective at coordinating project activities and responding to unforeseen site conditions.

These findings indicate that adaptability contributes to project efficiency by improving the organization’s ability to respond to environmental and operational changes.

The qualitative findings support the quantitative regression analysis, where adaptability demonstrated a statistically significant positive effect on both cost and time performance.

4.7.3 Mission, Leadership and Organizational Culture

In this study, qualitative analysis showed the importance of strategic leadership on project performance. Respondents showed that clarity of objectives, strong leadership, and effective communications led to better project outcomes and project completion within the planned budget and time. According to respondents, when objectives and goals are clearly defined, employees focus on being a part of the project and focus on common objectives.

One respondent explained that having supportive and decisive leadership helps to guide the team in the right direction and helps to improve timely decision-making. Another respondent also

stated that an organization that uses accountable, transparent, and effective communication has a better performance in controlling costs and effectively managing project time.

A site engineer stated: "When management clearly says "this project must finish by December and within 50 million Birr," everyone aligns their work to that target. Without that clarity, each department does its own thing, and we end up with delays and cost overruns."

Another participant noted: "Leadership that communicates the "why" behind decisions makes a huge difference. If I understand why a change is needed, I implement it faster and with more commitment."

Respondents further stated that when the management team communicates to employees about organizational goals and missions, a better understanding of the project is created, and everyone in the project feels responsible for the work that they do. This contributes to improved coordination and strong commitment that led to better project performance. Also, the findings suggested that leadership plays an important role in shaping organizational culture to have adequate performance.

Overall, these qualitative findings support that having a clear mission, leadership, and organizational culture showed a positive and statistically significant positive effect on project performance. So organizations with a strong strategic direction and effective leadership style are more likely to improve on project cost, time, and overall performance.

4.7.4 Organizational Challenges Affecting Project Performance

Most respondents agree that there is a positive influence of organizational culture at Elmi Olindo Construction. However, some respondents reported that there is a weak organizational culture that negatively affects project performance. Specifically, weak communication, delays in managerial decisions, and lack of coordination between departments have been reported. And these factors led to project delays, which affect the time and cost of project performance.

According to the reported data, there have also been ambiguities in taking responsibility and being accountable for projects done, which led to confusion among the project teams and affected project performance. In another perspective, a few respondents have also raised an issue

with bureaucratic procedures and the slow approval process that can disrupt project schedules and increase project costs.

A single respondent also reported that there have been poor coordination and delays in internal decisions, which affect both the cost and completion time of a project.

Generally, these findings suggest that weak organizational practices negatively affect both cost and time performance. Furthermore, the qualitative responses indicate that leadership problems, gaps in communication, and poor coordination may contribute to cost overruns and time mismanagement. So upgrading organizational culture positively affects project performance.

4.8 Discussion on Findings

This study's main objective was to examine the organizational culture on project performance at Elmi Olindo Construction PLC. These findings are obtained from both qualitative and quantitative analyses by focusing on four independent dimensions, which are consistency, Involvement, adaptability, and mission. The discussion below presents the interpretation of the findings.

One of the major findings of this study is that involvement is the strongest predictor of both cost and time performance. The regression analysis showed that involvement has a strong positive and significant influence on project performance. The qualitative finding further supported this result. Respondents highlighted the importance of teamwork, communication, employee participation, and collaboration in projects. They explained that projects tend to progress more smoothly when employees are more involved in decision-making and operational activities. In construction projects, many operational issues require rapid communication and coordinated responses between project teams, technical staff, procurement units, and management. When employees are involved, problems can be identified and resolved more quickly and efficiently, reducing cost overruns and delays.

The findings are also consistent with previous empirical studies, which reported that employee involvement positively influences organizational performance and project success. In project-based industries such as construction, where coordination and teamwork are essential, involvement appears to be particularly important for improving project cost and schedule performance.

The study also found that adaptability has a significant effect on both cost and time performance. Both qualitative and quantitative findings showed that a company tends to execute projects if they respond effectively to changes. Construction projects operate in highly dynamic environments where changes usually occur during project execution. Under this dynamic environment, organizational adaptability becomes crucial for maintaining project schedules and controlling project costs.

This study further shows the importance of adaptability in construction projects since the firm's dynamic nature, especially in developing countries where there are economic fluctuations, inflation, and uncertainties. So managerial teams should work on using an adaptive management system rather than rigid organizational systems to face the uncertain project conditions.

The mission of the organization also has a positive influence on project cost and time performance. Having a strong mission is important for better performance throughout a project. By nature, construction projects include many stakeholders, so a lack of a clear mission can create a negative influence on project execution. Overall, having a strong mission and leadership helps the organization achieve successful project execution.

This study found that strong communication, leadership, and alignment in an organization improve project performance. Among other dimensions, consistency did not show a significant effect on project performance. A possible explanation for the weakening of consistency is that construction projects are dynamic in nature and require flexibility to changing conditions. Using rigid execution systems may negatively influence organizational responsiveness and slow the operational decision-making process.

Nevertheless, these findings do not generally suggest that consistency is not important; rather, consistency only by itself may not be sufficient enough to improve project performance. So it must be supported by other factors such as effective communication, involvement, and effective leadership.

In general, this study shows that the dimensions of organizational culture constructed in the above findings are important determinants of project cost and time performance at Elmi Olindo Construction plc. So improving those dimensions of organizational culture may lead to better project coordination, strengthen employee commitment, improve responsiveness to operational

challenges, and ultimately contribute to better project performance. Also, this study may contribute to the literature on organizational cultures and project performance, specifically in the Ethiopian construction industry, to provide a practical view for the construction sector to improve project performance.

Table 4.12 Integration of quantitative and qualitative findings

Dimension	Qualitative Finding (β)	Supporting Qualitative Evidence
Involvement	β = 0.603 (cost), β = 0.474 (time), $p < 0.001$	"When I'm asked for input, I take ownership and look for ways to save time and money" (Site engineer)
Adaptability	β = 0.243 (cost), β = 0.287 (time), $p < 0.01$	"We were given flexibility to source alternatives within two days" (Procurement officer)
Mission	β = 0.222 (cost), β = 0.193 (time), $p < 0.01$	"When management clearly says the target, everyone aligns" (Project manager)
Consistency	Not significant ($p > 0.05$)	"Rigid procedures requiring three sign-offs cause delays" (Deviant case)

Chapter:5. Conclusion and Recommendation

5.1 Introduction

This chapter presents the conclusions drawn from the study's findings, followed by practical recommendations for Elmi Olindo Contractors PLC and policy recommendations for the Ethiopian construction industry. The limitations of the study are acknowledged, and directions for future research are proposed. The chapter is organized into five sections: conclusion, recommendations for the company, policy recommendations, limitations, and future research directions.

5.2 Conclusion

This study aimed to examine the effect of organizational culture on perceived cost and time performance of construction projects at Elmi Olindo Contractors PLC, using Denison's four-dimensional model (involvement, consistency, adaptability, and mission). A mixed-methods approach was employed, combining a census survey of 150 employees (113 valid responses) with semi-structured interviews. The following conclusions address each research objective.

5.2.1 Achievement of Research Objectives

First, the dominant dimensions of organizational culture at Elmi Olindo were identified. Descriptive statistics showed that mission received the highest mean score ($M = 3.75$), followed by involvement ($M = 3.40$), adaptability ($M = 3.37$), and consistency ($M = 3.33$). This indicates that employees perceive the company as having relatively clear strategic direction, while employee participation and flexibility are moderately present but could be strengthened.

Second, employees' perceptions of cost and time performance were moderately positive, with mean scores of 3.52 (cost) and 3.51 (time) out of 5. This suggests that while projects are generally perceived as performing adequately, there is room for improvement in budget and schedule adherence.

Third, regression analysis revealed that involvement, adaptability, and mission have statistically significant positive effects on both perceived cost and time performance. Involvement was the strongest predictor ($\beta = 0.603$ for cost, $\beta = 0.474$ for time, $p < 0.001$), followed by adaptability ($\beta = 0.243$ for cost, $\beta = 0.287$ for time, $p < 0.01$) and mission ($\beta = 0.222$ for cost, $\beta = 0.193$ for time, $p < 0.01$). Consistency did not show a significant independent effect ($p > 0.05$). Qualitative

findings corroborated these results, with participants emphasizing that teamwork, communication, quick decision-making, and clear goals directly improve project outcomes.

5.2.2 Theoretical Implications

The findings largely confirm Denison's organizational culture model in the Ethiopian construction context. Involvement and mission emerged as strong predictors of performance, consistent with Denison's original studies. However, the non-significant effect of consistency suggests that in dynamic, project-based environments like construction, rigid adherence to standardized procedures may be less important than flexibility and employee empowerment. This challenges the universality of Denison's model and suggests that contextual factors (e.g., industry turbulence, resource constraints) may moderate the relevance of certain cultural dimensions.

5.2.3 Practical Implications

For Elmi Olindo Contractors PLC, the results demonstrate that improving organizational culture particularly employee involvement, adaptability to change, and strategic clarity can significantly enhance project cost and time performance. This is not just an academic exercise: given that cost overruns and delays are persistent problems in Ethiopian construction, cultural interventions offer a relatively low-cost, high-impact lever for improving project outcomes. The study provides empirical evidence that management should prioritize cultural change alongside technical and financial improvements.

For the broader Ethiopian construction industry, this study highlights that organizational culture is a critical but often overlooked determinant of project success. Firms seeking to reduce delays and budget overruns should assess and strengthen their internal cultural practices rather than focusing solely on external factors like material prices or client behavior.

5.2.4 Summary on Conclusion

In conclusion, organizational culture significantly influences perceived cost and time performance in construction projects at Elmi Olindo Contractors PLC. By improving employee involvement, enhancing organizational adaptability, and communicating clear strategic objectives, the company can achieve better project outcomes. The study contributes to the limited Ethiopian literature on organizational culture in project management and provides actionable insights for construction firms facing similar challenges.

5.3 Recommendations

5.3.1 Recommendations for Elmi Olindo Contractors PLC

Based on the findings, the following prioritized recommendations are proposed for Elmi Olindo Contractors PLC. Priority is assigned based on the strength of each cultural dimension's effect on project performance (involvement having the strongest effect, followed by adaptability and mission). Consistency is not prioritized as it did not show a significant independent effect.

1. Strengthen Employee Involvement Mechanisms

Since involvement was the strongest predictor of both cost and time performance, the company should take the following actions:

Implementation of weekly participatory planning meetings where site engineers, office engineers, and procurement staff jointly review project status and identify potential issues before they escalate.

Establishment of a formal mechanism for capturing and rewarding employee suggestions that lead to cost savings or schedule improvements (e.g., quarterly recognition program).

Expanding the role of junior engineers in decision-making by including them in project review committees.

2. Enhance Organizational Adaptability

To improve responsiveness to project changes the following actions should be taken:

Reducing approval layers for change orders and procurement variations from three levels to one level for amounts under 500,000 Birr.

Creating a rapid-response team for common project disruptions (material shortages, design changes, weather delays) with pre-approved contingency plans.

Conducting post-project learning sessions to document successful adaptations and incorporate them into standard operating procedures.

3. Strengthen Mission Clarity and Leadership

To ensure strategic direction improves project outcomes the company should take the following actions:

Developing a one-page project charter for each project explicitly stating cost and time targets, which must be signed off by all key stakeholders before project initiation.

Conducting monthly project alignment meetings where management communicates organizational priorities and addresses team questions.

Incorporating cost and time performance metrics into regular performance reviews at both individual and team levels.

The study found that consistency did not have a statistically significant independent effect on cost or time performance. This does not mean consistency is unimportant, but rather that, within Elmi Olindo's context, rigid adherence to procedures without accompanying flexibility may not improve project outcomes. Therefore, consistency-related improvements (e.g., standardization of documentation) should be pursued only after implementing the higher-priority recommendations above, and should be balanced with adaptability.

5.3.2 Policy Recommendations for the Ethiopian Construction Industry

Based on the findings, the following policy recommendations are proposed for industry regulators, professional associations, and policymakers:

Integrate organizational culture into contractor evaluation. The Ministry of Urban Development and Construction should consider including organizational culture indicators (e.g., employee involvement, adaptability, strategic clarity) in contractor pre-qualification and performance evaluation criteria.

Develop industry guidelines for cultural improvement. The Ethiopian Construction Works Corporation and professional associations should develop toolkits to help construction companies assess and improve their organizational culture, particularly focusing on employee involvement and adaptability – the strongest predictors of project performance in this study.

Encourage mixed-methods performance monitoring. Policymakers should recognize that perceived performance measures complement objective metrics. Regular employee perception

surveys could be incorporated into project monitoring systems to provide early warning of cultural issues that may lead to delays or cost overruns.

Support capacity building in change management. Given the importance of adaptability, industry training programs should include modules on change management, flexible project execution, and rapid decision-making.

5.4 Direction for Future Research

This study opens several avenues for future investigation:

Multi-company studies. Future research should include multiple construction companies in Ethiopia to improve generalizability and allow comparison of cultural practices across firms.

Mediation and moderation. Researchers should examine mediating variables (e.g., organizational commitment, relational capital, employee engagement) to understand how organizational culture translates into project performance, as suggested by the second examiner. Moderating variables such as project complexity, firm size, or leadership style could also be investigated.

Longitudinal designs. Future studies could track organizational culture and project performance over time to establish causal direction and assess whether cultural interventions lead to measurable performance improvements.

Objective performance metrics. Where available, researchers should complement perceived measures with objective project data (e.g., actual cost variance, schedule performance index) to validate perception-based findings.

Other project outcomes. This study focused on cost and time performance; future research could examine quality performance, safety outcomes, client satisfaction, and employee well-being.

Cross-industry comparisons. Comparative studies between construction and other project-based industries (e.g., IT, manufacturing) could identify industry-specific versus universal cultural drivers of project success.

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ANNEXES: Questionnaire Sample

Quantitative Instrument

Instruction to respondents:

This questionnaire is intended for academic research purposes only. Your responses will be kept confidential and used solely for this study. Please indicate the extent to which you agree or disagree with each statement.

Scale:
1 = Strongly Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree

Section I: Demographic Information

1. Gender
   ☐ Male ☐ Female ☐ Prefer not to say
2. Age group
   ☐ 20–29 ☐ 30–39 ☐ 40–49 ☐ 50 and above
3. Highest educational qualification
   ☐ Diploma ☐ Bachelor's ☐ Master's ☐ Other (specify)
4. Current position
   ☐ Project Manager
   ☐ Site Engineer
   ☐ Office Engineer
   ☐ Foreman
   ☐ Finance staff
   ☐ Procurement staff
   ☐ Other (specify)
5. Years of experience in the construction industry
   ☐ Less than 5 years
   ☐ 5–10 years
   ☐ 11–15 years
   ☐ More than 15 years

Section II: Organizational culture and Perceived Cost and Time Performance

Please use the (√) symbol to indicate in the Rating or Likert items measuring technique using Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1).

No	Item	1	2	3	4
A	**Involvement**				
1	Employees in this company are encouraged to participate in decision-making related to their work.				
2	Teamwork is strongly emphasized in project execution.				
3	Employees feel a sense of ownership over construction projects.				
4	Skills and competencies of employees are adequately developed to meet project demands.				
B	**Consistency**				
5	There are clear and consistent procedures guiding project implementation				
6	Management decisions are applied consistently across different projects.				
7	Coordination among departments (engineering, finance, procurement) is effective.				
8	Conflicts are resolved through agreed-upon rules and procedures				
C	**Adaptability**				
9	The company responds effectively to changes in project requirements.				
10	Lessons learned from previous projects are used to improve future performance				

11	The organization is flexible in addressing unexpected project challenges.				
12	Innovation is encouraged to solve project-related problems				
D	**Mission**				
13	The company has a clear mission that guides project activities				
14	Project goals are clearly communicated to all team members				
15	Employees understand how their work contributes to project success				
16	Management provides clear direction regarding cost and time objectives				
E	**Perceived Cost Performance**				
17	Construction projects are generally completed within the approved budget				
18	Cost overruns are effectively controlled when they occur				
19	Financial planning supports timely project execution				
20	Procurement processes support cost efficiency in projects				
F	**Perceived Time Performance**				
21	Construction projects are generally completed within the planned schedule				
22	Project delays are identified and addressed promptly				
23	Coordination among project participants supports timely completion				
24	Availability of resources supports adherence to project schedules				

Section III: Open Ended Questions

1. In your experience, how does organizational culture influence cost performance in construction projects?
2. In your experience, how does organizational culture influence time performance in construction projects?
3. What aspects of the company's culture do you think most affect project success?

Qualitative Instrument: Semi Structured Interview Questions

Section I: Background Information

1. Can you describe your role and responsibilities in the company?
2. How long have you been involved in construction projects within this organization?

Section II: Organizational Culture

Involvement

3. How are employees involved in decision-making during project execution?
4. How does teamwork influence project outcomes?

Consistency

5. How consistent are rules, procedures, and management decisions across projects?
6. How are conflicts or disagreements resolved during project implementation?

Adaptability

7. How does the organization respond to unexpected changes such as design variations or material shortages?
8. Can you give an example where adaptability affected project cost or time?

Mission

9. How clearly are project objectives related to cost and time communicated?
10. How does management's vision influence day-to-day project activities?

Perceived Cost Performance

11. What are the main cost-related challenges encountered during project execution?
12. How does organizational culture influence cost control and budgeting practices?

Perceived Time Performance

13. What are the major causes of project delays in your experience?

14. How do organizational practices and work culture affect schedule adherence?

Culture–Performance Link

15. Which aspects of organizational culture have the greatest impact on both cost and time performance? Why?
16. Can you describe a situation where organizational culture contributed to project success or challenges?

Improvement and Comments

17. What cultural changes would improve project cost and time performance?
18. Is there anything else you would like to add regarding organizational culture and project performance?